TOWARD UNLOCKING THE FULL POTENTIAL OF ACQUISITIONS: THE ROLE OF ORGANIZATIONAL RESTRUCTURING

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Building on behavioral theory, we study when and how firms unlock synergy from acquisitions over extended periods of time. We argue that initial integration is inevitably suboptimal and that, as a result, acquisitive growth decreases an acquirer's performance, eventually forcing it to engage in organizational restructuring to more fully unlock the synergistic potential. Hence, we conceptualize organizational restructuring as a second stage in the integration process. Moreover, we theorize about how acquisition-restructuring cycles evolve as firms gain acquisition and restructuring experience. We tested our theory using panel data on firms undertaking almost 1,600 acquisitions over four decades.

In 2006, firms acquired at an all-time record level of $3.79 trillion worldwide (Thomson Financial, 2007). However, research has suggested that in a majority of cases anticipated synergies were left unrealized (for meta-analyses, see Datta, Pinches, and Narayanan [1992] and King, Dalton, Daily, and Covin [2004]). Strategy scholars have, therefore, long been pursuing an answer to the question, How can acquisitions be undertaken more successfully?

Since the 1980s, researchers have been exploring the preacquisition, or selection, stage of the acquisition process. They have argued that the synergistic opportunities inherent in an acquisition are contingent on the strategic fit that the acquisition offers in the form of resource similarity or complementarity. Many studies have confirmed this argument (Harrison, Hitt, Hoskisson, & Ireland, 1991; Kusewitt, 1985; Lubatkin, 1987; Pennings, Barkema, & Douma, 1994; Ramaswamy, 1997; Shelton, 1988; Singh & Montgomery, 1987; Zaheer, Castañer, & Souder, 2004).

More recently, however, the bulk of the research attention has shifted toward a second contingency that arises in the postacquisition, or implementation, stage of the acquisition process: organizational fit. The argument is that, although strategic fit is a necessary condition for synergy realization, it merely creates synergistic potential that can only be realized through effective integration of an acquired firm (Haspeslagh & Jemison, 1991; Jemison & Sitkin, 1986). In line with this view, studies have shown that integration enhances acquisition performance (Datta & Grant, 1990; Shanley, 1994; Zollo & Singh, 2004). In fact, Larsson and Finkelstein (1999) found it to be the single most important predictor of synergy realization.

Hence, after an aquirer selects and acquires a firm with synergistic potential, it is up to the acquirer to unlock as much of this potential as possible by building sufficient organizational fit (Pablo, 1994). However, this is a complex task that requires considerable management time and attention spent on "combining similar processes, coordinating business units that share common resources, centralizing support activities that apply to multiple units, and resolving conflicts among business units" (Hitt, Harrison, & Ireland, 2001: 86). Furthermore, it requires managing and gradually closing gaps with respect to, for instance, management style (Datta, 1991) and organizational culture (Chatterjee, Lubatkin, Schweiger, & Weber, 1992), an effort that is often hampered by considerable inertia, or even out-

right resistance, on the part of the acquired firm (Nahavandi & Malekzadeh, 1988; Walter, 1985; Weber & Camerer, 2003).[1]

Notwithstanding the many valuable insights that prior research has provided, researchers have nearly always adopted the individual acquisition as the unit of analysis, implicitly assuming that a firm starts with a clean slate every time it acquires. In reality, however, an acquisition is usually not an isolated event, but merely one part of an overarching sequence of acquisitions collectively aimed at implementing a corporate strategy (Kusewitt, 1985; Salter & Weinhold, 1979). The integration of each of these acquisitions requires considerable time and effort, thus often causing the burden on the acquirer's management to increase as its string of acquisitions grows (Gary, 2005; Hill & Hoskisson, 1987; Penrose, 1959). Eventually, according to Haspeslagh and Jemison, major organizational change may be needed to combine all the various pieces into an "integrated network of operations" (1991: 255)—suggesting that the role of organizational fit extends far beyond the level of the individual acquisition.

Building on behavioral theory, we develop a new theoretical framework through which we seek to explain when and how firms unlock synergy as they engage in acquisitive growth over long periods of time. Adopting the acquirer as our unit of analysis,[2] we conceptualize strategy as a sequence of decisions and actions taken "one at a time, over a period of years" (Fredrickson & Mitchell, 1984: 400), rather than as a preconceived, comprehensive plan. First, we argue that, for each acquisition, a firm initially engages in "local search" (Cyert & March, 1963), which inevitably results in suboptimal integration. As a result, a sequence of acquisitions leads to the accumulation of organizational inefficiencies, which gradually increases the need for more "distant search" in the form of major organizational restructuring.[3] By recombining its subunits, such restructuring enables the firm to unlock the synergistic potential of its acquisitions more fully. Hence, in essence, the first part of our theory implies that acquirers go through long-term cycles of acquisitive growth and organizational restructuring and that such restructuring serves as an important second stage in the postacquisition integration process.

Subsequently, we theorize about how these acquisition-restructuring cycles evolve over time. We argue that acquisition experience enables an acquirer to learn to implement its acquisitions more successfully from the start, thereby postponing the need for restructuring. Moreover, restructuring experience fosters the acquirer's ability to unlock more synergy when the need for another restructuring does arise. We tested our theory using panel data on firms engaging in almost 1,600 acquisitions over four decades (1966–2005).

BACKGROUND

Although behavioral theory (Cyert & March, 1963; March & Simon, 1958; Simon, 1945) initially focused on decision making at the operating level, its broader applicability to strategic issues—that is, those that are "important, in terms of the actions taken, the resources committed, or the precedents set" (Mintzberg, Raisinghani, & Théorêt, 1976: 246)—was soon recognized (Carter, 1971). Two key interrelated themes within this literature are central to our theory development: search and organizational learning. Regarding the former, classic behavioral theory suggests that a search for solutions is initiated in the case of failure, or anticipation of failure, to meet a goal (Cyert & March, 1963; see also Nutt, 1998). Although this characterization may accurately depict search at the operating level, at the strategic level it is not necessarily driven by *problems*, as firms also initiate search proactively in an attempt to seize strategic *opportunities* (Carter, 1971).

However, the search process is subject to "bounded rationality," meaning that a firm has "limited information, attention, and processing ability" (Greve, 2003: 12; Simon, 1945). Hence, there are constraints on the cognitive demands that the firm's management can effectively handle at any given time (Ocasio, 1997; Penrose, 1959). Faced with a complex strategic issue, it is typically "confronted with more stimuli than [it] can attend to or adequately process" (Hambrick, Finkelstein, & Mooney, 2005: 478; Mintzberg, 1973). As a result, the firm is forced to "satisfice"—that is, look for a course of action that is satisfactory rather than optimal (Simon, 1945)—by relying on cognitive simplifications of reality that economize on in-

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[1] Acquirers often create integration teams and appoint senior managers as full-time integration leaders (Ashkenas, DeMonaco, & Francis, 1998; Daniel & Metcalf, 2001), illustrating the complexity and the stakes that are involved.

[2] Analyzing phenomena at a higher level of aggregation typically implies examining processes, both conceptually and empirically, over lengthy periods of time (Freeman, 1978). Unlike most prior work, which has examined periods of days or weeks, or at most, of a few years following acquisitions, our study examines four decades.

[3] As we will explain later on, organizational restructuring is fundamentally different from portfolio restructuring, which is what the term "restructuring" has typically referred to in the literature so far.

formation processing (Schwenk, 1984). This phenomenon has been corroborated in experimental settings (Bettman, Johnson, & Payne, 1990; Payne, Bettman, & Johnson, 1988).

By focusing attention on just a few aspects of a situation, such simplified models limit a firm's search to a small, salient subset of the total set of alternatives (March & Simon, 1958; Mintzberg et al., 1976). Specifically, they lead the firm to engage in local search, in which efforts to identify satisfactory courses of action are largely limited to the neighborhood of the problem symptom and solutions adopted in the past (Cyert & March, 1963; Levinthal & March, 1993). Although "there is no realistic alternative in the face of the limits on human knowledge and reasoning . . . [such] simplification may lead to error" (Simon, 1945: 119; Tversky & Kahneman, 1974), compromising the quality of decision making and preventing the firm from finding the global, as opposed to merely a local, optimum (Levinthal, 1997). Research has indeed shown that decisions tend to be less effective if the comprehensiveness with which firms search for and evaluate alternative courses of action for a given strategic move is relatively low (e.g., Dean & Sharfman, 1996; Fredrickson, 1984; Fredrickson & Iaquinto, 1989; Von Werder, 1999; Wong, 2004). As a result, when local search fails to yield a course of action that is sufficiently effective, at some point firms will switch to more comprehensive, or distant, search in order to find one that is (Cyert & March, 1963).

The second key theme of behavioral theory that is of central importance to our paper—organizational learning—follows naturally from the notion of search. Over time, as a firm repeatedly performs a given organizational task, the search process triggered by that task will become increasingly routinized and refined (Levitt & March, 1988). Although a complex strategic move will likely always require substantial cognitive effort in the form of conscious and deliberate information processing, the routinization and learning that experience entails will help the firm to decide on and implement a suitable course of action more automatically, thus diminishing the need for cognitive effort (March & Simon, 1958; Nelson & Winter, 1982; Shiffrin & Schneider, 1977). Experience, therefore, lowers the demands placed on bounded rationality. It leads a firm to consider fewer courses of action, not because bounded rationality prevents it from being more comprehensive (as is the case in the absence of experience), but because it has learned which ones are most effective for a given task (Levinthal & March, 1981).

THEORY AND HYPOTHESES

The hypotheses developed below all deal exclusively with acquisitions for which the primary rationale is the creation of synergy, such as economies of scale, economies of scope, or capability transfer (Harrison et al., 1991; Haspeslagh & Jemison, 1991; Hitt et al., 2001; Larsson & Finkelstein, 1999; Lubatkin, 1983), and that consequently require relatively high levels of integration (Datta & Grant, 1990; Haspeslagh & Jemison, 1991). We therefore tested our hypotheses using only data on acquisitions that were likely to have such synergistic potential because their activities were related to those of the acquirer; we included horizontal, vertical,[4] and related-diversified acquisitions, which we jointly labeled "related acquisitions."

The Long-Term Cycle of Acquisitive Growth and Organizational Restructuring

Local search in the context of acquisition integration. As mentioned earlier, search at the strategic level is triggered not only by problems, but also by opportunities (Carter, 1971). Acquisitions represent such strategic opportunities. However, the complex task of integrating them and thus, establishing the organizational fit required to unlock their synergistic potential (Haspeslagh & Jemison, 1991; Hitt et al., 2001; Schweizer, 2005; Yu, Engelman, & Van de Ven, 2005), usually prevents a firm from considering the full set of alternative courses of action, forcing it instead to satisfice by relying on cognitive simplifications of reality (Hitt & Tyler, 1991). Such local search economizes on information processing but increases the probability of making suboptimal decisions on acquisitions (Duhaime & Schwenk, 1985). In line with this idea, research has shown that anticipated synergies are typically not fully realized (Datta et al., 1992; King et al., 2004).

Cyert and March's (1963) "proximity rules" provide deeper insight into the form that such local search is likely to take. These rules imply that a firm mainly searches for solutions to a problem (1) in the neighborhood of the symptom (that is, in the subunit in which the problem manifested itself first) and (2) in the neighborhood of the firm's current state (that is, avoiding solutions that break with established routines by favoring incremental

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[4] Vertical acquisitions usually possess resources that are complementary, rather than similar, to those of the acquirer, which can be a source of synergy as well (Harrison et al., 1991; Larsson & Finkelstein, 1999; Zaheer et al., 2004).

over radical change). In the context of our study, the first proximity rule suggests that effective integration solutions are likely to be sought within an acquired firm itself, where symptoms of inadequate organizational fit are likely to emerge first in the form of, for instance, resistance on the part of its employees (Nahavandi & Malekzadeh, 1988; Walter, 1985) or persistent weakening of its postacquisition performance. The second rule suggests that an acquirer will mainly consider integration approaches that do not require major changes in its organization beyond those within the acquired firm itself. Hence, it will seek to integrate the acquisition without changing its own existing organizational structure.[5]

In sum, the above suggests that, in an attempt to establish adequate organizational fit, an acquirer will satisfice by mainly considering organizational changes within the acquired firm itself, regarding its own existing organizational structure as exogenous to the issue. In line with this argument, Haspeslagh and Jemison found that integration is often characterized by a "make them like us" syndrome on the part of acquirers (1991: 151), especially in the case of relatively small acquisitions. Hébert, Very, and Beamish (2005) reported that acquirers often send integration teams into acquired firms to identify and evaluate synergistic opportunities. However, since these are usually small teams of business-level managers (Haspeslagh & Jemison, 1991; Palter & Srinivasan, 2006), their search activity is inevitably local. Furthermore, Yu and colleagues (2005) found that initial integration efforts tend to be limited to changes within, rather than across, acquired subunits. Thus, at least initially, an acquirer tends to disregard more radical possibilities for integration, such as recombining specific subunits from multiple existing divisions with an acquired firm to form an entirely new division. Taking these possibilities into consideration, however, would clearly increase the compre-

hensiveness of the search process. Although it will typically be financially unjustifiable to engage in such major organizational change for each individual acquisition undertaken, the potential benefits of doing so may often become very real after a firm has undertaken a string of acquisitions over time, as we will argue later on.

The performance effects of acquisitive growth. Since an acquisition is usually not an isolated event, but part of an overarching sequence of acquisitions collectively aimed at implementing a corporate strategy (Kusewitt, 1985; Salter & Weinhold, 1979), an acquirer tends to face a sequence of integration decisions over time. Because, given bounded rationality, "little attempt is made to integrate consciously the individual decisions that could possibly affect one another" (Fredrickson & Mitchell, 1984: 402), they are typically handled individually, rather than according to a preconceived, integrated strategy resulting from some formal planning system (Fredrickson, 1984; Fredrickson & Mitchell, 1984; Mintzberg, 1978).

We argue that each consecutive acquisition adds "inefficiencies" (Lubatkin, 1983: 222) to an acquirer's organizational system. That is, given the suboptimal organizational fit that results from local search in strategic decision making, each acquired firm, with its own culture, structure, systems, and processes, represents a subunit that adds to the total complexity of coordinating the acquiring firm (Argyres, 1996; Campbell, 1988; Gary, 2005; Henderson & Fredrickson, 1996; Hill & Hoskisson, 1987; Thompson, 1967). This becomes all the more apparent when one realizes that the type of acquisitions under consideration here—related acquisitions—typically require strategic controls, which, unlike financial controls, demand a thorough understanding on the part of, as well as rich information exchange with, the acquirer's senior management (Hitt, Hoskisson, Johnson, & Moesel, 1996).[6]

Wolters Kluwer, a major multinational publishing and information services firm included in our sample, illustrates the point. After a steady decline in profits, the firm was recently losing money for the first time ever. Analysts said it showed signs of

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[5] Cyert and March (1963) argued that local search is often governed by a third proximity rule: search in the neighborhood of vulnerable areas, with firms favoring "changes in organizational units that are unable to claim that preservation of their current routines is essential to the organizational functioning" (Greve, 2003: 15). As Cyert and March pointed out, "certain activities in the organization are more easily attacked than others, simply because of their power position in the system" (1963: 171). Once again, this suggests that, in its pursuit of organizational fit, an acquirer is likely to primarily implement changes within the narrow confines of the acquired firm because of its relatively weak power position in the overall organization (e.g., Jemison & Sitkin, 1986).

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[6] In fact, information-processing requirements could increase as much as exponentially with the number of subunits (N): $N(N - 1)/2$ (Hill & Hoskisson, 1987). Although lateral coordination mechanisms may partly alleviate these complications by dividing the coordination task over a larger number of individuals (e.g., Tsai, 2002), some vertical coordination through financial controls will remain necessary; thus, the burden on senior management still increases with each acquisition to be integrated and coordinated.

burnout caused by a failure to integrate the hundred-plus acquisitions it had engaged in over the previous decade. They strongly advised the CEO to better integrate the firm's "archipelago" of subunits in order to counter the decreasing trend in its financial performance (NRC Handelsblad, 2003).

In light of the above, we argue that the extent to which anticipated synergies are realized from a given acquisition depends on its position within a sequence of acquisitions. Whereas early acquisitions in the sequence can draw on a relatively large pool of available managerial resources, which enable comparatively high-quality integration, these resources will become increasingly tied up in coordination as more acquisitions are added (Kanfer & Ackerman, 1989). That is, "the services available from the existing managerial group limit the amount of expansion that can be planned [and implemented] at any time because all plans for expansion absorb some of the services available from this group" (Penrose, 1959: 49), as corroborated by more recent research (Hitt, Hoskisson, & Ireland, 1990; Yu et al., 2005).[7]

The more an acquirer's managerial resources become overstretched as a result of undertaking additional acquisitions, the more it will be forced to satisfice on their integration by engaging in ever more local search in which an ever smaller subset of potential courses of action is considered. That is, "the greater the job demands . . . the more remote strategic rationality becomes. Under high job demands, executives have so much performance pressure, so many decisions to make, in the face of so much information, they simply cannot afford—in terms of cognitive wherewithal, time, or other resources—to be comprehensive in their analyses or search for solutions" (Hambrick et al., 2005: 478). As a result, the odds of building the organizational fit required for synergies to be unlocked become ever smaller as a firm's string of acquisitions grows.

Hence, we predict a vicious cycle will unfold as follows: the addition of a suboptimally integrated acquisition will require more managerial resources for effective coordination of the acquiring firm as a whole (for example, more resources will be needed to resolve conflicts and ensure effective resource sharing between subunits), thus leaving fewer resources for the integration of the next acquisition. As a result, this next acquisition will be *even more* suboptimally integrated, which, in turn, will increase the coordi-

nation demands *to an even greater extent*, and so on (see Ellis, Hollenbeck, Ilgen, Porter, West, & Moon, 2003). In light of bounded rationality, therefore, this pattern will increasingly result in missed synergistic opportunities in terms of, for example, joint R&D, exchanging "best practices" or people in the context of job rotation, or sharing knowledge and other resources required for concerted action throughout a firm (Ghoshal & Gratton, 2002). In view of the above, we hypothesize:[8]

Hypothesis 1. The impact of an additional related acquisition on a firm's performance becomes less positive (or more negative) as its acquisition sequence grows.

The upper portion of Figure 1, which graphically represents our theoretical framework, depicts the effect on a firm's performance of its "number of related acquisitions since last restructuring," which corresponds to Hypothesis 1.

Acquisitions as drivers of organizational restructuring: Distant search. As discussed earlier, behavioral scholars have argued and found that, in order to economize on information processing, firms engage in local search for effective courses of action. If this fails to generate a satisfactory outcome, they tend to shift to more distant search so as to consider a wider range of alternatives (Cyert & March, 1963; Mintzberg et al., 1976). Initially, therefore, an acquirer will mainly consider changes within the acquired firm itself, regarding its own broader organizational structure as exogenous. Although such initial integration helps to realize synergies (Larsson & Finkelstein, 1999; Zollo & Singh, 2004), Hypothesis 1 suggests that these efforts gradually become blunted as a firm's acquisition sequence grows, the firm increasingly suffers from integration and coordination problems, and its performance declines. Hence, in line with behavioral theory, we predict that at some point the firm will shift to more distant search for solutions.

We suggest that such distant search will lead to large-scale organizational restructuring, reflect-

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[7] Hiring more managers is no solution, at least not in the short term, because their development and integration require the services of incumbent managers as well (Penrose, 1959).

[8] It should be noted that the precise shape of this relationship between the number of related acquisitions undertaken and firm performance—that is, whether it is a monotonically decreasing function or an inverted U-shaped curve—is a separate empirical issue. Though, on average, acquisitions seem to fail in terms of synergy realization or, more generally, in terms of their contributions to the acquirers' performance, most studies have reported considerable variance in findings (e.g., King et al., 2004), suggesting that not *all* acquisitions end in failure. A priori, therefore, we would expect the inverted U-shaped curve to materialize.

FIGURE 1
Theoretic Framework
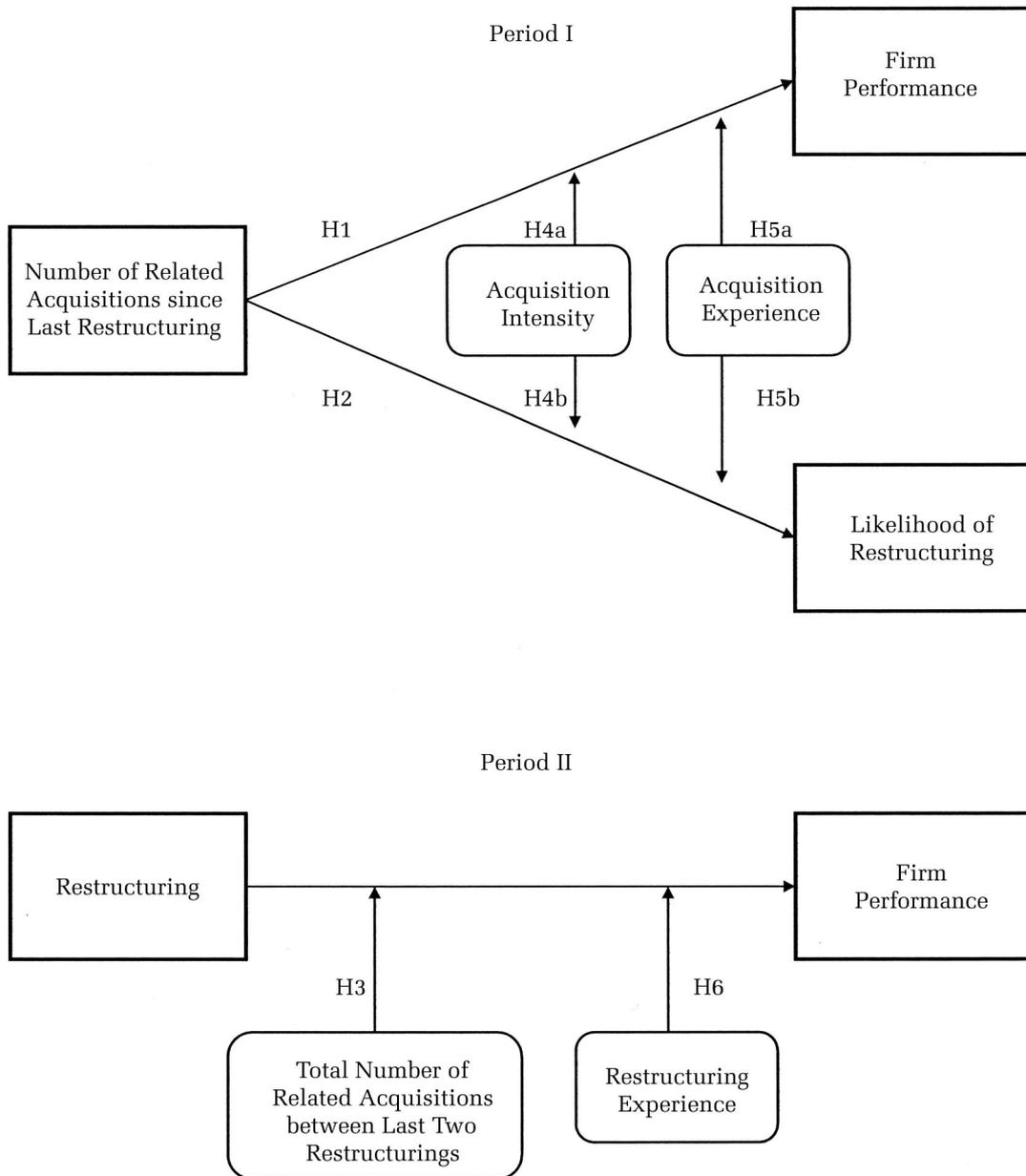
Period I

Period II

ing Miller and Friesen's argument that "major reorientations seem to take place because many excesses or deficiencies have developed during periods of pervasive momentum" (1980: 612). That is, an acquirer will at some point start to question its organizational structure and consider actions that go beyond incremental change within each individual acquisition. Again, Wolters Kluwer illustrates our theory. After a decade of highly acquisitive behavior, the firm's CEO, Nancy McKinstry, reported on the company website that "2003 was a year of transition for

Wolters Kluwer, during which we began a . . . realignment of the organization."[9]

In general terms, organizational restructuring has been defined as change aimed at "increasing the effi-

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[9] Another illustration of how a sequence of acquisitions can drive major restructuring can be found in a press release, "Acquisitions Trigger Reorganization at Norwood," published on the homepage of Norwood Promotional Products. This release states that the firm "is realigning itself to effectively integrate the new additions."

ciency and effectiveness of management teams through significant changes in organizational structure" (Bowman & Singh, 1993: 6). However, we need to be more specific because, for our purposes, it is essential to understand that organizational restructuring is fundamentally different from portfolio restructuring, which is what the term "restructuring" has usually referred to in the literature (e.g., Bergh & Lawless, 1998; Markides, 1995). Whereas portfolio restructuring refers to changes in the scope of a firm (through acquisitions, start-ups, or divestments), organizational restructuring refers to recombination of existing subunits (see Karim, 2005) that leaves the scope of the firm unchanged (Bowman & Singh, 1993).

Although failure of local search to yield effective courses of action has indeed been found to induce a shift to more distant search (Mintzberg et al., 1976), such a shift can take quite some time to set in, particularly when major organizational change is involved (Lant, Milliken, & Batra, 1992). Not only do firms have a tendency to escalate their commitment to key decisions made in the past (Staw, 1981), including those made in the context of acquisitions (Duhaime & Schwenk, 1985), but also, organizational change in fact tends to be impeded by interdependent routines that have become deeply ingrained over time in such organizational domains as structure, culture, and control systems (Cyert & March, 1963; Gersick, 1991; Greenwood & Hinings, 1993; Miller & Friesen, 1980; Romanelli & Tushman, 1994; Tushman & Romanelli, 1985).

As a result, an acquirer will tend to engage in major organizational restructuring only when a crisis has become sufficiently deep to break the strong grip of such inertia, triggering a period of "sensemaking" that allows it to change the prevailing beliefs underlying its existing organizational structure (Weick, 1995). Specifically, by redirecting attention within the firm away from other activities (Bourgeois, 1985), such as additional acquisitions, this process will usually involve many more organization members than the small groups of managers who initially integrated each acquisition individually, thus allowing for a richer discussion and a broader range of alternative courses of action to be considered (March, Sproull, & Tamuz, 1991).

Hence, building on the argument underlying Hypothesis 1, we posit that acquisitive growth gradually increases the need for organizational restructuring, although it may take a substantial period of time before the acquirer's inertia is broken and such restructuring is actually undertaken. At this point, as Haspeslagh and Jemison wrote, "The firm has reached a stage where further acquisitions are ruled out . . . because the organizational challenges have caught up with them. [Now] a second, more profound

set of demands arise from the competitive realities of the newly acquired position" (1991: 263), requiring major organizational change to combine all the pieces into "an integrated network of operations" (1991: 255).

Hypothesis 2. With firm performance controlled for, the probability of a firm's restructuring increases with its number of related acquisitions.

The upper portion of Figure 1 graphically depicts the relationship predicted in Hypothesis 2. Since Hypothesis 1 predicts that mounting organizational inefficiencies eventually cause firm performance to decrease, and since prior research has firmly established weakening performance as a key predictor of organizational change (Greve, 2003; Romanelli & Tushman, 1994), organizational restructuring may be a reaction to negative performance feedback. Our theory, however, suggests that acquisitive growth renders a firm more difficult to coordinate and thus possibly represents a driver of restructuring that operates independently of performance. To isolate the direct effect of acquisitions, therefore, we controlled for firm performance.

Unlocking synergistic potential through organizational restructuring. It is quite common for firms to use organizational restructuring as a means of experimenting with structure to find more promising configurations (Capron, Dussauge, & Mitchell, 1998; Capron, Mitchell, & Swaminathan, 2001; Eisenhardt & Brown, 1999; Karim, 2006). Because of bounded rationality, acquirers are typically unable to optimally integrate acquisitions the first time around. Therefore, acquisitions can be thought of as "pieces of clay that firms attempt to mold" (Karim, 2006: 804) repeatedly to unlock as much of their synergistic potential as possible over time.

For our purposes, recombination of organizational divisions through organizational restructuring can take four forms, singly or in combination: creation, elimination, merger, or split-up (Brickley & Van Drunen, 1990; see also Eisenhardt & Brown, 1999). "Creation" means that a new division, into which multiple subunits are placed, is created. "Elimination" refers to cancellation of a division and thus, allocation of its subunits to an organization's remaining divisions.[10] "Merger" means that two or more separate divisions are combined; and, finally, "split-up" refers to a division's being broken up into one or more separate divisions. Thus,

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[10] "Creation" and "elimination" do not refer to acquisition and divestment of a division, respectively. Rather, they signify administrative modifications of an organizational chart, implying changes in reporting relationships.

organizational restructuring has major implications for where subunits end up within an organization, thus representing a toolkit that it can use to integrate its acquisitions more effectively. By moving beyond organizational change at the level of the individual acquisition (Barki & Pinsonneault, 2005; Birkinshaw, Bresman, & Håkanson, 2000; Ghoshal & Bartlett, 1996; Ghoshal & Gratton, 2002), an acquirer can jump from a situation in which it can merely optimize its overall organizational fit locally—conditional on its existing organizational structure—to one in which it might reach "the global optimum" (Levinthal, 1997).

Hence, organizational restructuring enables an acquirer to more fully unlock the synergistic potential of its acquisitions.[11] Not only does it allow the firm to identify, evaluate, and choose from among a wider range of alternative approaches to realize *anticipated* synergies, but also, it confers the benefit of hindsight, allowing the firm to evaluate all of its acquisitions collectively, which may lead it to uncover *new* synergistic opportunities as well (Ciborra, 1996; Karim, 2006). Thus, such post hoc evaluation is valuable because some of the synergistic potential of an acquisition may simply not be identifiable beforehand, as it is conditional on other acquisitions not yet undertaken.[12] For example, each of Cisco Systems' acquisitions has tended to increase the synergistic potential of its prior ones by enabling the company to build more fully integrated networking solutions (Harbor Research, 2003).

In the words of March et al., "Great organizational histories, like great novels, are written, not by first constructing interpretations of events and then filling in the details, but by first identifying the details and allowing the interpretations to emerge from them. As a result, openness to a variety of . . . dimensions of experience and preference is often more valuable than a clear prior model and unam-

biguous objectives" (1991: 8). Thus, it may only become clear after recent acquisitions have been undertaken that organizational fit and synergy realization call for combining some of the earlier ones in the acquisition sequence with others located in different divisions, or for creating a new division in which multiple acquisitions will be placed, or for splitting a certain division into smaller, more homogeneous units (Brickley & Van Drunen, 1990; Galunic & Eisenhardt, 1996).[13] For instance, a study of the Beatrice Company reported that, following an extended period of acquisitive growth, management restructured the firm into six groups in order to "achieve synergies among the operations" (Baker, 1992: 1097).

Although organizational restructuring may often enable an acquirer to unlock more of the synergistic potential of its acquisitions—representing a second stage in the postacquisition integration process—there are downsides to such radical change as well. Prior research has shown that the disruption that radical change brings about subjects a firm to a "liability of newness" similar to that faced by newly founded firms, which leads to less efficient internal functioning and a significant short-term drop in performance as new routines are established (Amburgey, Kelly, & Barnett, 1993; Greve, 1999).[14] Therefore, we expect the more fully unlocked synergistic potential of prior acquisitions to materialize some time after the acquirer's restructuring, when its disruptive effect has subsided. Since, in light of our theory, this beneficial effect is likely to be greater if the restructuring involves a larger number of acquisitions, we hypothesize a performance increase following restructuring that is proportional to the number of acquisitions directly preceding it:

Hypothesis 3. Following a restructuring, increase in a firm's performance is amplified by the number of related acquisitions undertaken between the last two restructurings.

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[11] Although organizational and portfolio restructuring are distinct in theory, they tend to correlate in practice (Bowman & Singh, 1993). Specifically, divestment activity tends to be relatively intense during episodes of organizational restructuring (Hoskisson, Johnson, & Moesel, 1994; Miller & Friesen, 1980; Shimizu & Hitt, 2005; Tushman & Romanelli, 1985); in Table 1 (below) a significant, positive correlation coefficient between variables for these two activities supports this statement. To be able to factor out the effect of organizational restructuring in our models, therefore, we controlled for divestments.

[12] As one of the anonymous reviewers pointed out, this latter argument, unlike the former, does not require the assumption of bounded rationality.

[13] An additional benefit that organizational restructuring has to offer over initial incremental efforts to integrate each acquisition individually is that it is considerably more likely to break the grip of the inertia within acquired firms that often complicates integration, since organizational restructuring jointly addresses several interdependent organizational domains over a short period of time (Allen, 1979; Romanelli & Tushman, 1994; Tushman & Romanelli, 1985). Thus, restructuring is usually able to achieve a momentum that individual subunits cannot undermine.

[14] Empirically, therefore, we model this short-term disruptive effect explicitly, since its omission would paint an incomplete and misleading picture of the effect of organizational restructuring (Barnett & Carroll, 1995).

In Figure 1, this increase in firm performance in the period following restructuring (designated as "Period II") is represented by the effect of "Restructuring" on "Firm Performance," amplified by "Total Number of Related Acquisitions between Last Two Restructurings."

The Evolution of Acquisition-Restructuring Cycles over Time

Having specified our basic model, we now theorize on how the acquisition-restructuring cycles described above evolve over time, as a firm gains experience with acquisitions and restructuring. To this end, we build on a theme within behavioral theory that naturally extends the insights into the search process gained so far: organizational learning. However, we first briefly discuss another factor that, from a behavioral perspective, can be expected to impact the dynamics of these acquisition-restructuring cycles—namely, the intensity of acquisitive growth.

Acquisition intensity. Given bounded rationality, the postacquisition integration process is subject to diseconomies of time compression (Dierickx & Cool, 1989). Thus, attempting to integrate a given number of acquisitions in a shorter period of time is likely to lower the degree and quality of integration and thus, the amount of synergy realized (Kusewitt, 1985; Vermeulen & Barkema, 2002).[15] The narrower the time interval in which a sequence of acquisitions is undertaken—that is, the higher the acquisition intensity—the less time an acquirer will have to search for and implement an effective course of action before engaging in the next acquisition.

By extension, if acquisition intensity indeed hampers integration, then the need for more distant search through organizational restructuring should emerge sooner. In other words, we predict a difference in the propensity to restructure between a firm engaging in ten acquisitions within a period of, say, ten years and one undertaking ten acquisitions within a single year, as the accumulated organizational inefficiencies are likely to be greater in the latter case.

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[15] Penrose's outline of her theory of the receding managerial limit contains a compelling illustration of diseconomies of time compression: "If a firm deliberately or inadvertently expands its organization more rapidly than the individuals in the expanding organization can obtain the experience with each other and with the firm that is necessary for the effective operation of the group, the efficiency of the firm will suffer" (1959: 47).

Hypothesis 4a. Acquisition intensity moderates the relationship between a firm's number of related acquisitions and firm performance, as predicted by Hypothesis 1. The higher the acquisition intensity, the higher the rate at which the impact of an additional acquisition becomes less positive (or more negative) as the acquisition sequence grows.

Hypothesis 4b. Acquisition intensity moderates the relationship between a firm's number of related acquisitions and its probability of restructuring, as predicted by Hypothesis 2. The higher the acquisition intensity, the more positive this relationship.

Acquisition experience. As a firm repeats a task over time, the search process triggered by that task becomes increasingly routinized (Levitt & March, 1988), allowing the firm to decide on and implement a suitable course of action with less cognitive effort (March & Simon, 1958; Nelson & Winter, 1982; Shiffrin & Schneider, 1977). As the firm gains acquisition experience, therefore, routines partly replace detailed decision making about integration (Zollo, 1998), thus alleviating the information-processing demands that are placed on its managerial resources.

Although the routinization that results from such experience accumulation may indeed allow a firm to acquire more *efficiently*, there is little consensus on whether it also enables it to acquire more *effectively*, thus enhancing synergy realization. Scholars have argued that it is difficult to learn from experience with heterogeneous and causally ambiguous tasks (Zollo & Winter, 2002)—a category that acquisitions clearly belong to in light of the many interdependent subactivities that they encompass (Zollo & Singh, 2004), such as due diligence, negotiation, financing, and integration. However, although acquisitions show considerable heterogeneity and causal ambiguity on the surface, many underlying subactivities may be quite similar across deals (cf. Grant, 1996), such as identifying, screening, and deciding on an acquisition target, negotiating the purchase, and managing the integration process through integration teams (Haspeslagh & Jemison, 1991). Often, these subactivities are performed by the same individuals or departments (Grant, 1996; Hébert et al., 2005), suggesting considerable scope for gaining valuable knowledge that is generalizable across acquisitions, through learning that is purely experiential or more deliberate, such as experience codification (Palter & Srinivasan, 2006; Zollo & Singh, 2004). In line with this argument, Eisenhardt and Brown (1999) offered anecdotal evidence of routines for mobilizing integration teams,

handling stock options, and tracking employee retention rates. General Electric, for instance, has managed to routinize its acquisition process to the point that it is now able to effectively integrate most of its acquisitions within 100 days (Ashkenas et al., 1998). More generally, most prior work has shown that acquisition experience increases acquisition performance (Bruton, Oviatt, & White, 1994; Haleblian & Finkelstein, 1999; Hayward, 2002).

Extending this line of reasoning, if acquisition experience indeed increases the efficiency and effectiveness of integration, then the organizational inefficiencies described earlier should accrue less rapidly over a sequence of acquisitions. As a result, the need for more distant search through organizational restructuring should emerge less quickly as well.

Hypothesis 5a. Acquisition experience moderates the relationship between a firm's number of related acquisitions and firm performance, as predicted by Hypothesis 1. The greater the acquisition experience, the lower the rate at which the impact of an additional acquisition becomes less positive (or more negative) as an acquisition sequence grows.

Hypothesis 5b. Acquisition experience moderates the relationship between a firm's number of related acquisitions and the probability of restructuring, as predicted by Hypothesis 2. The greater the acquisition experience, the less positive this relationship.

Restructuring experience. If acquisition experience fosters integration at the level of the individual acquisition, experience with organizational restructuring may benefit integration at the level of an acquirer as a whole, enabling it to recombine subunits and thus, unlock the previously untapped synergistic potential of its acquisitions more efficiently and effectively. Interestingly, such experience has received little research attention (Amburgey et al., 1993; Delacroix & Swaminathan, 1991; Greve, 1998; Kelly & Amburgey, 1991; King & Tucci, 2002).

It could be argued, perhaps even more than in the case of acquisition experience, that it is difficult to develop an experience-based restructuring capability, since restructurings occur infrequently and are highly heterogeneous and causally ambiguous (Zollo & Winter, 2002). However, like integration, restructuring also consists of distinct subactivities, such as aligning control systems and balancing power distributions (Allen, 1979; Bowman & Singh, 1993). Some of these subactivities may be similar across restructurings, thus facilitating learning (Grant, 1996). In this vein,

Hitt et al. (2001) provided anecdotal evidence of the development of restructuring capability, and McKinley and Scherer (2000) argued that top management learns through experience to choose among a variety of ways to restructure. As part of the sense-making process surrounding complex events such as restructurings, individuals may sift their experience for a plausible explanation of what they now face and for a plausible course of action based on what has worked in similar circumstances in the past (Weick, 1995). Even in firms that restructure so infrequently that some of the experiential knowledge is washed away with personnel turnover, some of it may be retained in the form of routines, documents, culture, or other elements of organizational memory (Cyert & March, 1963).

Hence, "to routinize the process of change . . . an organization must gain experience in modifying operating routines. . . . In short, organizations learn to change by changing" (Amburgey et al., 1993: 54). Although restructuring should be delayed until it is absolutely necessary and its benefits are likely to exceed its costs and disruptions, we expect that the success with which a firm is able to resolve organizational inefficiencies through restructuring—and thus, to unlock previously unrealized synergies from acquisitions—increases with restructuring experience:

Hypothesis 6. Following restructuring, increase in a firm's performance is amplified by restructuring experience.

DATA AND METHODS

Sample

We collected panel data on 25 large Dutch multinational firms for the period 1966 to 2005. The year 1966 was chosen as our starting point because it represented a break in Dutch acquisition activity, which sharply increased after 1966 (De Jong, 1988). The data were obtained directly from annual reports. The firms operated in a wide variety of industries, including brewing, publishing and printing, food products, chemicals, and so on. They represented all nonfinancial firms listed on the Amsterdam Stock Exchange in 1993, excluding the four largest ones (Royal Dutch/Shell Group, Unilever, Philips, and Akzo), which were outliers in terms of their age and the time they started to acquire.[16] On average, our sample firms had 14,288 employees, 1.48 billion euros in sales, assets with a

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[16] The inclusion of these firms would have led to serious "left-censoring" problems for our experience variables.

book value of 992.84 million euros, and a net profit of 43.25 million euros. Furthermore, they undertook an average of 1.87 related acquisitions per year, collectively engaging in 1,585 acquisitions within our 40-year window of analysis.

Variables

Firm performance. In line with our theory and prior research on synergy realization from acquisitions (Kusewitt, 1985; Ramaswamy, 1997; Zollo & Singh, 2004), we measured firm performance through return on assets (ROA). Abnormal returns, although widely used in the acquisition literature, did not serve our purposes here, since we studied when and how synergies were unlocked over time, rather than the total value that was created in terms of the net present value of all the cash flows that acquisitions gave rise to, discounted to a single point in time. As compared to other accounting measures of profitability, ROA has been shown to be the least sensitive to biases due to changes in leverage or bargaining power caused by acquisitions (Meeks & Meeks, 1981). In addition to using ROA as the dependent variable in our performance models, we included it as a control in the restructuring models, as performance tends to affect a firm's propensity to engage in radical organizational change (Greve, 2003; Romanelli & Tushman, 1994).

Organizational restructuring. This binary measure equaled 1 if a firm's annual report showed that it undertook organizational restructuring in a given year (Romanelli & Tushman, 1994). Sometimes restructuring took several years, but we found no cases in which distinct restructuring programs overlapped in time. Organizational restructuring is fundamentally different from portfolio restructuring, which has typically been what researchers have meant by restructuring (e.g., Bergh & Lawless, 1998; Markides, 1995). Portfolio restructuring refers to changes in the scope of a firm through acquisitions, start-ups, or divestments (Bowman & Singh, 1993). Organizational restructuring, in contrast, implies the recombination of existing subunits, leaving the scope of the firm unchanged (Bowman & Singh, 1993; Karim, 2006). We first identified all firm-year observations in which restructuring activity took place at the divisional level, as indicated in the annual reports. According to Brickley and Van Drunen (1990), such divisional restructuring can take one of four forms: creation, elimination, merger, or split-up. Next, we created our restructuring dummy by assigning 1 to those cases in which (1) divisional restructuring spanned multiple divisions and/or (2) a firm transformed its formal structure, switching between functional, product-divisional, geographic area, or matrix structures. For triangulation purposes, we examined published business histories for the seven firms for which these were available and observed no discrepancies. This dummy served as the dependent variable in the restructuring models and as an independent variable in the others.

Number of related acquisitions since last restructuring. This variable represents a count of the number of horizontal, vertical, and related diversified acquisitions made since the year of a firm's most recent restructuring. Thus, in the case of organizational restructuring, the count variable was reset to 0. Following earlier research, an acquisition was coded as "horizontal" if it took place within the same three-digit SBI code[17] as a firm's core activities; as "related-diversified" if it occurred within the same two-digit SBI code (but not the same three-digit category); and as "vertical" if it took place within the firm's value-added chain (see Pennings et al., 1994).[18]

Number of related acquisitions between last two restructurings. This count variable was used to test Hypothesis 3 and, to this end, it reported the total number of related acquisitions a firm had undertaken between its most recent restructuring and the one prior to that (i.e., between the last two restructurings). Hence, this variable was different from the previous one, which counted the number of acquisitions that a focal firm had engaged in since its most recent restructuring.

Elapsed time since last restructuring. This was a clock variable measuring the number of years elapsed since a firm's most recent restructuring. In the event of restructuring, the clock was reset to 0 (e.g., Amburgey et al., 1993; Martin, Swaminathan, & Mitchell, 1998).

Acquisition experience. This variable was measured as the natural logarithm of the total number of acquisitions undertaken by a firm since 1966. The logarithm was used because doing so captured the decreasing marginal returns that experiential learning is subject to (e.g., Pablo, 1994; Pennings et al., 1994). Similar results were obtained using the nontransformed measure.

Restructuring experience. This variable was measured as the natural logarithm of the total num-

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[17] The SBI (Standaard Bedrijfsindeling) coding system is the Dutch equivalent of the SIC system.

[18] Although a more detailed operationalization of "sequences" or "strings" of acquisitions could be obtained by incorporating more properties of the underlying distribution (e.g., skewness and kurtosis, which were included in Vermeulen and Barkema [2002]), our theorizing in the present study focused simply on the number of acquisitions that firms undertake between episodes of organizational restructuring.

ber of restructurings since 1966, and again results were similar when the log was not used.

Control Variables

Firm size. We used the natural logarithm of a firm's number of employees. We included it in the performance models since it might influence both firm performance (Hitt, Hoskisson, & Kim, 1997) and acquisition behavior (Amburgey & Miner, 1992). Its inclusion might, therefore, account for spurious correlation. Firm size and its square were also included in the restructuring models, since the complexity of larger firms might require more frequent restructuring, although beyond a certain size structural inertia might offset this need (Hannan & Freeman, 1984; Penrose, 1959).

Debt-to-equity ratio. Following prior research (Hitt et al., 1997; Vermeulen & Barkema, 2002), we controlled for capital structure using a debt-to-equity ratio, which might affect both acquisition behavior (as a proxy for free cash flow) and firm performance (Jensen, 1986). This variable was also included in the restructuring models as insolvency might signal a need for change.

Product scope. Product scope affects firm performance (Hoskisson & Hitt, 1990; Palich, Cardinal, & Miller, 2000). We measured it using the number of four-digit SBI codes in which a firm operated in a given year (Sharma, 1998). Using the number of three-digit SBI codes led to nearly identical results. Product scope was also included in the restructuring models, as diversified firms sometimes restructure in order to focus more on their core businesses (Allen, 1979).

Geographic scope. Similarly, geographic scope tends to affect firm performance (Hitt et al., 1997). We measured this variable through the number of different countries in which a firm operated in a particular year. Geographic scope was also included in the restructuring models for reasons similar to those supporting the inclusion of product scope.

Number of divestments. Although divestments are a form of portfolio restructuring rather than organizational restructuring, there does tend to be more divestment activity during periods of organizational restructuring (Bowman & Singh, 1993) (see the correlation coefficient in Table 1). To factor out their performance effect, therefore, we included the natural logarithm of the number of divested acquisitions in a given year as a control in the performance models so that it would not be confounded with the performance effect of organizational restructuring itself.

Number of divisions. The natural logarithm of the number of divisions of a firm was included as a control variable in the restructuring models because the modularity resulting from divisionaliza-

tion might allow the firm to solve problems locally through organizational restructuring within divisions, rather than through the larger-scale restructuring that we studied.

CEO change. CEO change has been found to trigger major organizational change (e.g., Lant, Milliken, & Batra, 1992; Romanelli & Tushman, 1994). In our restructuring models, therefore, we included a dummy that indicated whether a CEO change occurred in any given year.

Number of "greenfields" since last restructuring. This was a count of the number of greenfield investments undertaken by a firm since its last restructuring. The variable was reset to 0 if restructuring occurred. We included number of greenfields in the restructuring models to compare the effect of greenfields to that of acquisitions. We did not expect greenfields to drive restructuring, since they are naturally integrated to begin with. In fact, prior research found that greenfields make firms simple and inert (Vermeulen & Barkema, 2001), suggesting that they may have a negative effect on the propensity to restructure.

Firm dummies. We accounted for firm-specific unobserved heterogeneity using firm dummies. Including these dummies controlled for the dependence of observations nested within a single firm and alleviated concerns about potential endogeneity bias (Hamilton & Nickerson, 2003). Inclusion also captured potential effects of stable firm-specific factors, such as organizational culture.

Year dummies. Year dummies were included to control for potential influences of trends, such as acquisition waves, the state of the economy, and the general aging of firms. Alternative specifications with a calendar time variable and several of its powers led to similar results.

Analyses

Given the panel structure of our data, we used Hausman tests to select between fixed- and random-effects models (Owusu-Gyapong, 1986). These tests showed that the random-effects estimator was inconsistent and thus, that fixed effects should be employed. We tested Hypotheses 1, 3, 4a, 5a, and 6 using ordinary least square (OLS) fixed-effects regression models. To test Hypotheses 2, 4b, and 5b, we used conditional fixed-effects logit models, as is the standard approach with panel data and a binary dependent variable. Potential multicollinearity problems owing to the use of squared and interaction terms were mitigated by centering the continuous independent variables (Aiken & West, 1991; Jaccard, Turrisi, & Wan, 1990). Furthermore, robust Huber-White standard errors were used in all models. Finally, in the interests of conserva-

TABLE 1
Descriptive Statistics and Correlations

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Return on assets	5.12	5.22														
2. Organizational restructuring	0.13	0.34	−.06													
3. Number of related acquisitions since last restructuring	12.88	16.06	.22*	.07												
4. Number of Greenfields since last restructuring	4.22	6.29	.04	−.001	.59*											
5. Elapsed time since last restructuring	6.64	6.89	.12*	−.38*	.60*	.54*										
6. Acquisition experience[a]	3.01	1.23	.14*	.19*	.52*	.27*	.18*									
7. Restructuring experience[a]	0.78	0.64	.00	.33*	.14*	.08*	−.22*	.66*								
8. Total number of related acquisitions between last two restructuring	12.63	14.71	−.001	.25*	.09*	−.09*	−.28*	.45*	.19*							
9. Number of employees[a]	9.06	0.96	−.10*	.18*	.35*	.12*	−.01	.54*	.53*	.15*						
10. Debt-to-equity ratio	1.90	1.52	−.25*	.08*	.07*	.06	−.05	.13*	.21*	−.08	.14*					
11. Product scope	16.07	10.65	−.24*	.06	−.03	.01	−.11*	.22*	.07*	.03	.32*	.12*				
12. Geographic scope	11.29	9.01	.13*	.17*	.56*	.47*	.23*	.68*	.52*	.23*	.46*	.07*	−.03			
13. Number of divisions[a]	1.30	0.82	−.02	.09*	.19*	.16*	−.05	.54*	.54*	.06	.21*	.20*	.15*	.25*		
14. CEO change	0.12	0.33	−.02	.03	.02	−.04	−.01	.03	−.01	.09*	.04	−.03	.00	.02	.01	
15. Number of divestments	0.26	0.47	.06	.10*	.14*	.12*	.05	.33*	.27*	.15*	.12*	.02	.13*	.20*	.25*	.05*

[a] Logarithm.

* $p < .05$

tism, all significance tests in our models represented two-tailed tests, even though, in principle, one-tailed tests would have been statistically justified in light of the directionality of our hypotheses (Neter, Kutner, Nachtsheim, & Wasserman, 1996).

RESULTS

Hypothesis Tests

Table 1 presents descriptive statistics and correlations. Overall, the magnitudes of the correlations suggest that multicollinearity is not a problem in our models, as confirmed by the variance inflation factors of our variables, which are all below 10 (Neter et al., 1996).[19]

Table 2 presents the results of the OLS fixed-effects regression models testing Hypotheses 1, 3, 4a, 5a, and 6. All models are highly significant ($p < .001$) and have considerable explanatory power, with our full models (8 and 9) explaining well over 40 percent of the variance in firm performance. To

[19] The strongest correlation is that between geographic scope and acquisition experience ($r = .68$). Since the somewhat inflated standard errors that could result bias against finding support for those hypotheses that pertain to acquisition experience, this merely renders our tests more conservative. Moreover, excluding geographic scope led to similar results for these hypotheses, implying the absence of serious multicollinearity. More generally, formal testing for spurious correlation by including the squares of the components of all our interaction terms revealed that any multicollinearity that may be present does not materially affect our hypothesized effects (Cortina, 1993).

facilitate causal inference, we primarily tested our hypotheses using both models 8 and 9, the latter of which was estimated with one-year lagged independent variables. Regarding Hypothesis 1, our models report the main effect of a firm's number of related acquisitions since its last restructuring and its square. Note that, since we centered our variables, it was only necessary that the coefficient of the squared term be significantly negative for there to be evidence of an inverted U-shaped relationship (as long as the coefficient of the linear term was not too large and significantly negative). This coefficient is indeed strongly significant in almost all models ($p < .001$), including both full models. This finding corroborates Hypothesis 1 and, more specifically, reveals an inverted U-shaped curve (see the figures below): following restructuring, acquisitions first tend to contribute to, but eventually hurt, firm performance. Moreover, the partial derivatives indicate that the inflection points of the estimated inverted U-curves are all well within the range of our data.

With respect to testing Hypotheses 4a and 5a, it is important to note that our theory does not imply different *shapes* of the inverted U-shaped curve at different values of the moderators, but only different *locations of the optimum.* Aiken and West (1991: 68−69) showed that, in a case such as this, correct testing requires one to interact the moderators only with the linear term of the independent variable. As a formal check, we estimated models that also included interactions with the squared term, but their coefficients were highly insignificant (see models 2 and 3). Hypotheses 4a and 5a are supported in both full models: the coefficient of the

TABLE 2
Results of OLS Fixed-Effects Regression Models for Return on Assets and Granger Causality Test Using LDV Model[a]

Variable	Hypothesis	ROA$_t$								ROA$_{t+1}$	LDV ROA$_{t+1}$
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Intercept		7.24***	7.30***	6.37***	6.54***	6.60***	7.84***	6.72***	7.46***	7.65***	0.24*
Lagged dependent variable[b]											0.46***
Number of employees[b]		−1.35***	−1.39***	−1.01**	−1.04***	−1.83***	−1.61**	−1.55**	−1.60**	−1.04*	2.12**
Debt-to-equity ratio		−0.69*	−0.67*	−0.68*	−0.66*	−0.50*	−0.47†	−0.51*	−0.49*	−0.64***	−0.13
Product scope		−0.12**	−0.11*	−0.13***	−0.13***	−0.15**	−0.15**	−0.16**	−0.16**	−0.13*	0.09
Product scope squared		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	−0.001	−0.01***
Geographic scope		−0.01	−0.03	−0.02	−0.02	−0.02	0.02	0.07	0.05	0.09	0.01
Number of divestments[b]		−0.06	0.01	−0.29	−0.23	−0.02	0.04	0.01	0.09	0.22	0.88***
Number of related acquisitions		0.21***	0.22***	0.04	0.05	0.03	0.09	−0.03	0.05	−0.06	−0.11
Number of related acquisitions since last restructuring	1	−0.002***	−0.003***	−0.003†	−0.01***	−0.01***	−0.004***	−0.004***	−0.004***	−0.004***	−0.002***
Number of related acquisitions since last restructuring squared											
Restructuring		−2.90***	−2.96***	−2.24***	−2.30***	−2.09**	−1.62*	−1.29†	−1.40†	0.31	2.25***
Elapsed time since last restructuring		−0.13**	−0.21***	−0.10*	−0.18***	−0.21*	−0.08	−0.26**	−0.14	−0.07	0.14
Number of related acquisitions × elapsed time	4a		0.003†		0.004***	0.004*	0.01**	0.004*	0.004*	0.01***	0.004***
Number of related acquisitions squared × elapsed time			0.00								
Acquisition experience[b]	5a	0.13	0.36	2.59***	2.73***	3.47***	2.95***	3.98***	3.03***	3.84***	−0.58
Number of related acquisitions × acquisitions experience				0.15***	0.16***	0.16**	0.10*	0.17**	0.11*	0.15**	0.08*
Number of related acquisitions squared × acquisitions experience				−0.001							
Restructuring experience[b]		1.63*	1.27	0.32	−0.04	1.44	1.02	1.49	1.42	1.20	−0.89
Total number of related acquisitions between last two restructurings						−0.03	0.11†	−0.03	0.07	0.14**	0.17***
Elapsed time × total number of related acquisitions	3						0.03**		0.02**	0.03***	0.02***
Elapsed time × restructuring experience	6							0.38**	0.29*	0.26*	0.22**
Adjusted R^2		0.33	0.34	0.35	0.36	0.41	0.42	0.42	0.43	0.45	
Model F		8.65***	8.60***	8.91***	9.24***	7.59***	7.93***	7.85***	7.31***	7.41***	
Wald χ^2											514.08
n		790	790	790	790	523	523	523	523	498	446

[a] The decrease in sample size from model 4 to model 5 is a consequence of the inclusion of the variable "total number of related acquisitions between last two restructurings," which can only be computed for the years subsequent to the first observed restructuring of a focal firm. Firm and year dummies are not reported. Additional models are available upon request.

[b] Logarithm.

† $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$

Conservative two-tailed tests.

FIGURE 2a
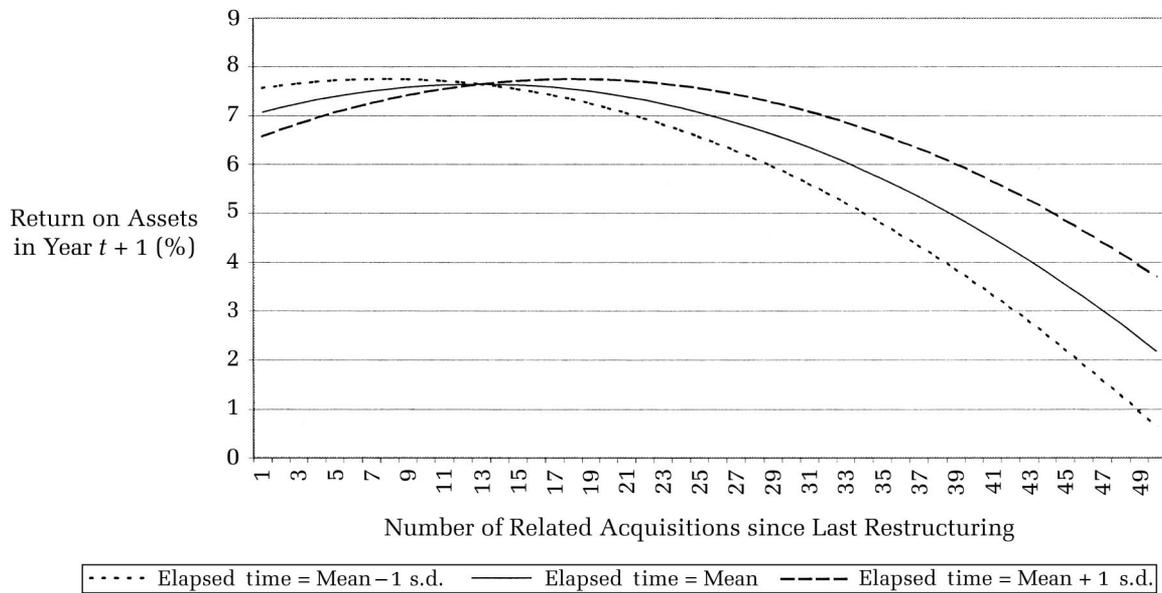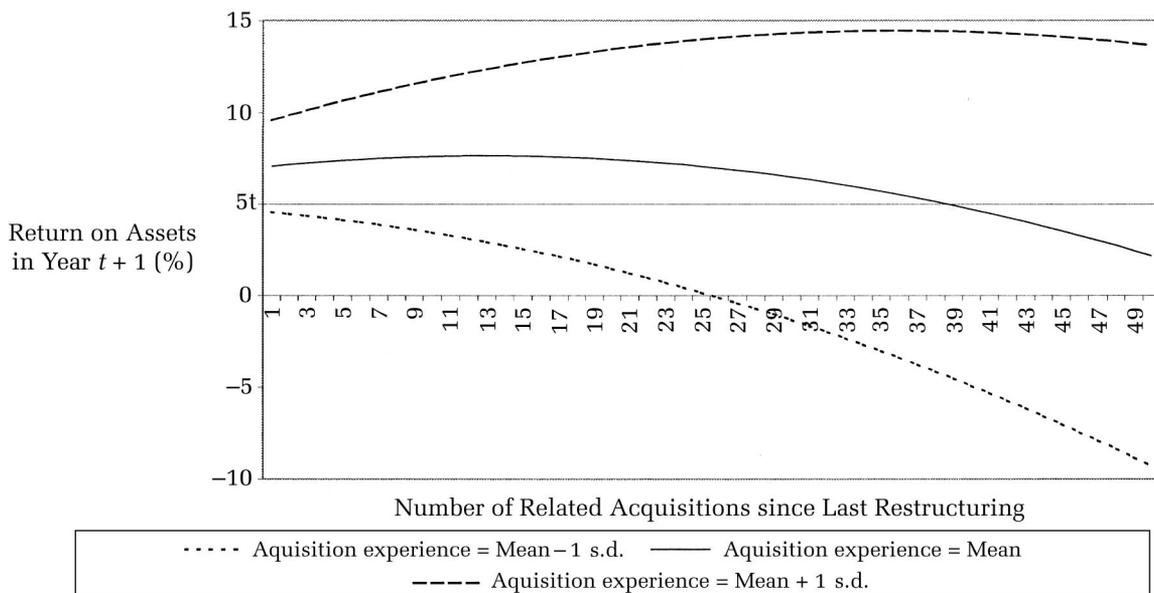**Estimated Relationship, Hypothesis 4a: Acquisition Intensity**

Number of Related Acquisitions since Last Restructuring

Return on Assets in Year $t + 1$ (%)

- - - - - Elapsed time = Mean − 1 s.d.   ——— Elapsed time = Mean   − − − − Elapsed time = Mean + 1 s.d.

FIGURE 2b
Estimated Relationship Hypothesis 5a: Acquisition Experience

Number of Related Acquisitions since Last Restructuring

Return on Assets in Year $t + 1$ (%)

- - - - - Aquisition experience = Mean − 1 s.d.   ——— Aquisition experience = Mean
− − − − Aquisition experience = Mean + 1 s.d.

interaction of related acquisitions with elapsed time is positive and significant (model 8: $p < .05$; model 9: $p < .001$), as is that of the interaction with acquisition experience (model 8: $p <. 05$; model 9: $p < .01$). Thus, both acquisition intensity and acquisition experience moderate the inverted U-shaped relationship between the number of related acquisitions a firm has undertaken since its last organizational restructuring and firm performance.

The graphs in Figures 2a and 2b, which are based

on the estimates in model 9, are neatly in line with Hypotheses 4a and 5a. We see, for instance, that acquisition experience one standard deviation below the mean (i.e., experience with about six acquisitions) does not imply any optimal number of related acquisitions at all, as even the first acquisition tends to hurt firm performance. In contrast, acquisition experience one standard deviation above the mean (i.e., experience with about 69 acquisitions) reveals an optimum of about 36 acquisitions, allowing ROA to rise up to 14 percent be-

TABLE 3
Results of Conditional Fixed-Effects Logit Models
for Organizational Restructuring$_{t+1}$[a]

Variables	Hypothesis	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		−3.15***	−2.77***	−2.75***	−2.63***	−2.68***
Number of employees[b]		0.52+	0.44	0.46	0.54+	0.58*
Number of employees squared[b]		−0.31**	−0.42**	−0.43**	−0.42**	−0.44**
Debt-to-equity ratio		0.39***	0.41***	0.45***	0.42***	0.47***
Product scope		−0.01	−0.01	−0.01	−0.01	−0.01
Geographic scope		0.03	0.03	0.03	0.05	0.05
Elapsed time		−0.03	−0.09	0.08	−0.14	0.08
Number of divisions[b]		−0.53+	−0.57+	−0.53+	−0.57+	−0.55+
CEO change		0.61+	0.65*	0.62+	0.66*	0.62+
Restructuring experience[b]		−1.33**	−1.21*	−1.15*	−1.15*	−1.08*
Acquisition experience[b]		0.70	0.44	0.38	−0.17	−0.16
Return on assets		−0.10***	−0.10***	−0.09***	−0.11***	−0.11***
Number of greenfields since last restructuring		−0.05+	−0.09*	−0.09*	−0.10*	−0.10*
Number of related acquisitions since last restructuring	2		0.03*	0.03+	0.08**	0.08**
Number of related acquisitions since last restructuring × elapsed time	4b			−0.01*		−0.01*
Number of related acquisitions since last restructuring × acquisition experience	5b				−0.03*	−0.03*
McFadden's pseudo-R^2		0.19	0.19	0.20	0.20	0.21
Model chi-square		78.87***	80.50***	79.41***	83.70***	84.22***
Bayesian information criterion (BIC)		−4,354.12	−4,356.28	−4,352.90	−4,340.32	−4,337.81

[a] $n = 759$. Firm and year dummies are not reported.
[b] Logarithm.
+ $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$
Conservative two-tailed tests.

fore additional acquisitions start to decrease firm performance.

In line with prior research (Amburgey et al., 1993; Greve, 1999), in our findings restructuring has a short-term disruptive effect, as can be inferred from the significantly negative coefficient of the restructuring dummy in all the models without one-year lagged independent variables (this effect indeed seems to be short-lived, since it is no longer significant one year after restructuring, as can be seen in model 9). In support of our theory, however, the performance increase *following* this short-term disruptive effect is greater (1) if a larger number of acquisitions preceded the restructuring and (2) if a firm had more restructuring experience, as the associated interaction terms have significantly positive effects in both full models (model 8: $p < .01$ and $p < .05$, respectively; model 9: $p < .001$ and $p < .05$, respectively). Hence, both Hypotheses 3 and 6 find support.

Briefly elaborating on Hypothesis 3, we note that the results indeed suggest that organizational restructuring allows for more synergy to be unlocked,

especially if such recombination activity follows a longer sequence of acquisitions. Illustrating the economic significance of these results, the estimates of model 9 suggest that the difference in additional gains within the first three years after a restructuring between two scenarios—one in which *5* acquisitions preceded the restructuring and one in which *25* acquisitions preceded it—amounts to no less than 8 million euros. For the average sample firm with annual net profits of a little over 40 million euros, this is clearly a considerable amount of money.

Table 3 reports the logit models that test Hypotheses 2, 4b, and 5b. Like the OLS models, they are highly significant ($p < .001$) and have substantial explanatory power. Again, to facilitate causal inference, we lagged the independent variables by one year. In the full model (model 5), Hypothesis 2 is strongly supported: we found that the effect of related acquisitions on the likelihood of restructuring is positive and significant ($p < .01$), even after controlling for firm performance, which has a negative effect, as expected. Thus, acquisitions indeed

seem to drive restructuring independently of performance. The associated odds ratio is 1.08, implying that, on average, each acquisition increases the odds of restructuring by about 8 percent. Greenfields, in contrast, tend to decrease the propensity to restructure, in line with prior work (Vermeulen & Barkema, 2001).

Support is also found for Hypotheses 4b and 5b, as the coefficients of the interactions between related acquisitions and elapsed time and acquisition experience, respectively, are significantly negative in the full model (both $p < .05$). Thus, the wider the time interval over which a firm undertakes acquisitions (i.e., the lower the acquisition intensity) and the higher the firm's acquisition experience, the less each additional acquisition increases the probability of restructuring.

To improve our understanding of how our results might play out over time as an acquirer gains acquisition and restructuring experience, we conducted a simulation based jointly on the full performance and restructuring models, in which performance fed into the restructuring model and restructuring events, in turn, fed into the performance model (we used model 8 to make sure that we also captured the short-term disruptive effect of organizational restructuring). Figures 3a and 3b present the outcomes. In line with our theory, these figures show that acquirers go through long-term cycles of acquisitions and restructuring, enabling them to become more profitable over time. What is more, the simulation adds an important insight into the dynamics of our theory: although we expected firms to learn to restructure more closely to the optimal performance levels of each cycle as they gained acquisition and restructuring experience, it turned out that, with each cycle, they tended to acquire further, going beyond this optimum, before they restructured. Upon closer inspection, however, this makes sense, as performance levels that go above and beyond the optimal ones in their current cycles are more likely to be attained if firms first accumulate a larger number of acquisitions from which to unlock synergies through restructuring. Thus, experienced acquirers seem to sacrifice some of their profitability in the present to be more profitable in the future.

Causality

Do acquisitions and restructuring indeed affect performance, as hypothesized, or does performance, in fact, drive acquisition and restructuring? In nonexperimental research, causal inference requires (1) correlation between cause and effect, (2) temporal precedence of the cause, and (3) exclusion of alternative explanations (Cook & Campbell, 1979). Although we took the conventional steps to establish causality (i.e., fixed effects and lagged independent variables), we sought to pursue this issue further through lagged dependent variable (LDV) models, which, in econometric terms, test for so-called Granger causality (Greene, 2003).

Using a lagged dependent variable implies conditioning on the history of all the independent variables, allowing past realizations of the dependent variable to affect its current level (Greene, 2003). Apart from explicitly modeling autocorrelation, this can greatly reduce the threat of spuriousness due to unobserved heterogeneity (Allison, 1990), thus alleviating concerns about reverse causality. The downside is that a lagged dependent variable usually absorbs a great deal of variance, leaving less for other variables to explain even though they may, in fact, be theoretically relevant. Furthermore, OLS estimation of a fixed-effects model with a lagged dependent variable leads to downwardly biased estimates of the coefficients of the other variables (Nickell, 1981), which can be resolved by using an estimator based on instrumental variables.

We drew on relatively recent developments in econometrics by using the Arellano-Bond estimator, which, after eliminating fixed effects via first differencing, applies instrumental variables estimation to the differenced equation (Arellano & Bond, 1991). Based on a generalized method of moments (GMM) approach, this estimator greatly improves the efficiency of estimates by not only using lagged values of the dependent variable as instruments, but also allowing consideration of all other potential instruments in the model. Model 10 of Table 2 presents the results for an LDV model estimated by means of the Arellano-Bond estimator.[20] As can be seen, all our hypotheses remain supported—in some cases even more firmly than in our primary models—providing strong evidence that at least part of the causality indeed runs as specified by our hypotheses: from acquisitions and restructuring to firm performance.

Robustness Checks and Additional Analyses

First of all, responding to King et al. (2004), we used return on sales and return on equity as alter-

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[20] A Sargan test of overidentifying restrictions provided strong evidence of the validity of the available instruments ($p = 1.00$). Furthermore, an Arellano-Bond test provided evidence that autocorrelation of order 2 is absent ($p = .47$), implying that there was no need to add a two-year lagged dependent variable.

FIGURE 3a
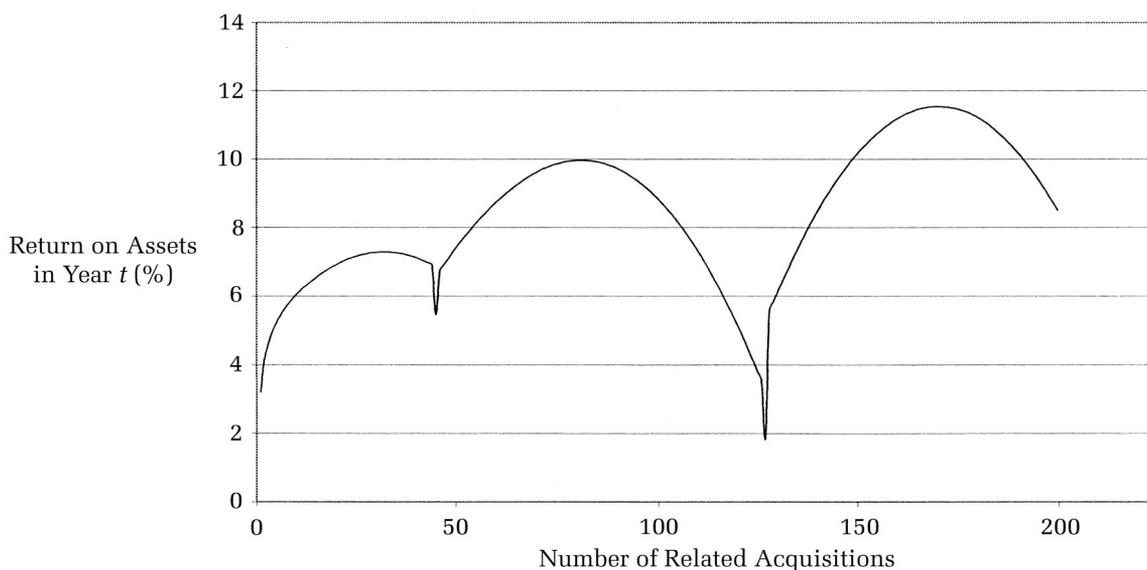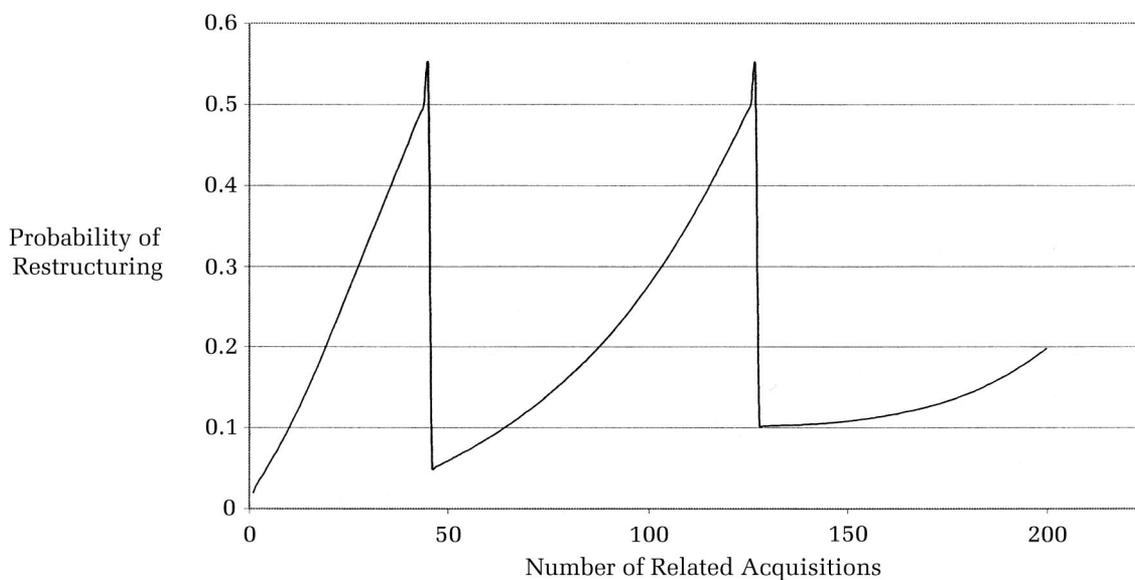**Simulation Based on the Performance Model**

FIGURE 3b
Simulation Based on the Restructuring Model

native performance measures; these substitutions led to very similar results. Second, we added a count of the total number of related acquisitions undertaken since 1966 and its square to check whether the inverted U-shaped relationship that we picked up between restructurings was not simply part of a more general inverted U-shaped curve (cf. Conn, Cosh, Guest, & Hughes, 2004). The original effects remained significant ($p < .001$), and those of the additional variable and its square, in fact, indicated the presence of a U-shaped curve

($p < .001$), in line with Haleblian and Finkelstein's (1999) findings. We did the same for several randomly chosen acquisition sequences (i.e., not in-between restructurings) and found no evidence of performance effects. Furthermore, adding the cubed term of our original variable led to insignificant results.

Third, we conducted four additional analyses to gain a better understanding of the inverted U-shaped curve found for related acquisitions and to rule out potential alternative explanations. First,

we reran the models to see whether the relationship had a similar shape for *unrelated* diversified acquisitions. Consistently with our theory, we did not find an inverted U-shaped effect. Second, we did the same for *international* related acquisitions: in addition to finding an inverted U-shaped curve, we found, in line with the idea that cross-border acquisitions are particularly difficult to integrate (Brock, 2005), that the inflection point corresponded to about two to four fewer acquisitions, as compared to the one for related acquisitions in general. Third, we obtained data from the Dutch government that enabled us to operationalize industry-specific business cycles using gross production and employment. We found that our restructuring measure was not correlated with such business cycles ($p > .50$) and thus ruled out business cycle effects as drivers of organizational restructuring. Furthermore, although we did find ($p < .01$) that acquisitions contributed more to firm performance when overall industry production and/or employment were higher, suggesting that firms pick higher-quality acquisitions in times of economic prosperity within an industry (see Conn et al., 2004), these effects did not change the significance of our hypothesized results in either the performance or the restructuring models. Finally, we obtained data from SDC Platinum on the number of acquisitions undertaken in a focal firm's industry, enabling us to measure industry-specific merger waves from 1985 onwards. Our findings were similar to those on business cycles: merger waves were not correlated with our organizational restructuring measure ($p > .10$) and, although we found some evidence ($p < .05$) that firms were able to pick relatively high-quality targets during times of high acquisition intensity within an industry, this result did not render our hypothesized effects in the performance and restructuring models statistically insignificant.

Fourth, upon having gathered acquisition-specific data from SDC Platinum, we found evidence ($p < .05$) that the greater the extent to which an acquisition sequence consists of multibusiness targets (i.e., those active in multiple SIC codes), which are typically more difficult to integrate (e.g., Hitt et al., 2001), the faster the acquirer reaches the inflection point of the inverted U-shaped curve that we found for Hypothesis 1, suggesting that it is indeed integration issues that drive our results.

Fifth, whereas the logarithmic specification of experience in our analyses is common, implying that the learning benefits of additional experience increase at a decreasing rate and thus, that recent experience is less important than earlier experience (see Yelle, 1979), some have contended that recent experience may, in fact, be more decisive because earlier experience is forgotten and becomes antiquated (e.g., Argote, Beckman, & Epple, 1990). To explore this issue further, we incorporated three different discount factors proposed by Baum and Ingram (1998) into our original (nontransformed) acquisition and restructuring experience variables: the square root of the age of the experience, the age of the experience, and the age of the experience squared (in increasing order of speed of experience depreciation). We found for both the restructuring and the performance models that none of these specifications fitted the data as well as our initial logarithmic specifications, suggesting that acquisition and restructuring experience accumulated early on is crucial and not readily forgotten or antiquated.

Sixth, we gathered data on the top management teams (TMTs) of all our firms over our entire window of analysis from chambers of commerce and the firms' annual reports to assess the extent to which the learning effects that we found were specific to TMT members rather than organizational. For both acquisition and restructuring experience, we found that when we jointly included the organizational experience variable and a variable that measured the experience accumulated by the incumbent TMT member with the longest tenure, both were significant (at least $p < .10$), although the coefficient of the latter was about half the size of that of the former, thus providing some evidence of the existence of organizational memory.

Seventh, inclusion of CEO change and the number of greenfields a firm has pursued since its last restructuring in our performance models had little effect on the significance levels of the hypothesized effects, apart from having insignificant effects in their own right. Finally, inclusion of an interaction between the number of related acquisitions and a firm's debt-to-equity ratio (as a proxy for free cash flow; e.g., Gibbs [1993]), which should capture the effects of free cash flow driving low-quality acquisitions (Harford, 1999), did not change our results either.[21]

DISCUSSION

In extant work, researchers have almost invariably treated acquisitions as isolated events, implicitly assuming that an acquirer can start with a clean slate every time it acquires. In reality, however, an acquisition usually represents merely one element

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[21] We would like to thank our anonymous reviewers for suggesting several of these additional analyses.

in a broader sequence of acquisitions collectively intended to implement some corporate strategy (Kusewitt, 1985; Salter & Weinhold, 1979). Building on behavioral theory of search and organizational learning, we have developed a theoretical framework that adopts the acquirer, rather than the acquisition, as the unit of analysis and through which we seek to explain when and how acquirers unlock synergy over time.

Based on a sample of firms that engaged in almost 1,600 acquisitions over four decades, our results reveal that acquirers tend to go through long-term cycles of acquisitive growth and organizational restructuring. Specifically, we found that the contribution of a given acquisition to an acquirer's performance depends on the acquisition's position within the sequence, that such a sequence of acquisitions gradually increases the need for major organizational restructuring (independently of performance feedback), and that such restructuring plays an important role in more fully realizing the potential of the firm's acquisitions. Moreover, we find that the balance that the firm needs to strike between acquisitive growth and organizational restructuring depends on its acquisition intensity as well as on its acquisition and restructuring experience.

Contributions to the Literature

First of all, our theory and results shed light on gains from acquisitions that so far seem to have remained largely overlooked. Whereas nearly all prior research has examined performance effects of acquisitions in the short to medium term (at most two or three years following an acquisition), we argue that major organizational restructuring, through the recombination of subunits that it entails, can reduce the organizational inefficiencies that inevitably accumulate over a string of acquisitions and, thus, can enable a firm to more fully unlock their synergistic potential many years after they were undertaken. A key implication, therefore, is that postacquisition integration, representing the single most important determinant of synergy realization (Larsson & Finkelstein, 1999), is often not a one-shot game, but a process that extends far beyond the integration efforts exerted for each acquisition individually.

Our study also helps to better explain the findings of prior work. By disregarding the role of organizational restructuring in establishing organizational fit, prior research has ignored important long-term benefits gained from acquisitions. Indeed, early acquisition research showed that it could take up to 12 years before the full perfor-

mance impact of a single acquisition could be reliably assessed (Biggadike, 1979)—an estimate that is surprisingly close to our sample average of the time lapse between organizational restructuring events. Although our study focused squarely on acquisition performance over the long term, it may also have interesting implications for research on acquisition announcements using event studies. Under the assumption of (semi)efficient capital markets, share prices are argued to capture the net present value of all the cash flows that a given acquisition gives rise to. However, if the focal acquisition is not the first in a sequence of related moves designed to implement a given strategy, then to what extent will shareholders have, in fact, anticipated the synergistic gains of this specific acquisition well ahead of its announcement (see Balakrishnan, 1988)? Even more intriguingly, are shareholders really able to foresee the gains unlocked through organizational restructuring many years into the future, especially since, as our theory suggests, these gains are contingent on acquisitions that are undertaken *subsequent to* the focal one?

Third, we believe that our study adds richness to the well-established, consistent finding that the average acquisition fails to realize anticipated synergies in the short to medium term (see King et al., 2004). The inverted U-shaped curve regarding Hypothesis 1 shows that the optimum is typically reached relatively early on in an acquisition sequence and thus, that the downward-sloping part of the curve is more protracted than the upward-sloping part (see Figures 2a and 2b). Although this result confirms that, on average, acquisitions decrease firm performance, it offers the additional insight that the *position* of an acquisition in a sequence is important for determining whether that specific acquisition will strengthen or weaken performance (prior to organizational restructuring).

Fourth, our study may shed light on the inconsistent findings on capability development in the context of acquisitions: whereas some authors have found a positive relationship (e.g., Bruton et al., 1994; Fowler & Schmidt, 1989), others have uncovered an insignificant one (e.g., Hayward, 2002; Lubatkin, 1987; Zollo & Singh, 2004), and still others have found a U-shaped relationship (Haleblian & Finkelstein, 1999; Zollo & Reuer, 2003). In light of our finding that the performance of an acquisition (prior to restructuring) tends to be weaker if it occurs later on in a sequence of acquisitions, it may be the case that performance improvements attributable to learning cannot be accurately assessed by models that examine a firm's entire acquisition history at once without taking into account the counteracting force that we find between organizational

restructurings. That is, although acquisitive growth enables firms to learn to become more successful acquirers, it also gives rise to other dynamics that need to be controlled for in order for the learning effects to be estimated correctly. Moreover, our study suggests that the benefits of acquisition experience are, in fact, greater than has been recognized so far, since, apart from enabling an acquirer to *increase* its acquisition performance, it also allows it to *decrease* the frequency with which it needs to engage in costly and disruptive bursts of organizational restructuring.

Fifth, our theory and results suggest that firms can develop a restructuring capability, although extant theory predicts that it is difficult for them to do so, since restructurings occur infrequently and are highly heterogeneous and causally ambiguous (Zollo & Winter, 2002). Perhaps developing a restructuring capability is possible because organizational restructuring activity, like acquisition activity, is partitioned into subactivities that are similar across restructuring events and, thus, may still offer considerable scope for learning (Grant, 1996). Hence, whereas acquisition experience allows a firm to learn to search locally for effective approaches to integrating each acquisition individually, restructuring experience may enable it to learn to engage in distant search for effective ways of integrating an acquiring firm as a whole. Although organizational restructuring tends to be a traumatic event that leads to a substantial dip in firm performance in the short term (Amburgey et al., 1993; Greve, 1999), in the long term it enables a firm to more fully unlock the synergistic potential of its acquisitions and thus, to increase its performance to higher levels than before, especially if, as our simulation shows, it has restructuring experience.

More generally, we suggest that there may be benefits to placing acquisitions, as well as other types of strategic moves, within a larger framework of organizational change. In our case, by studying acquisitions at the level of an acquiring firm as a whole and demonstrating that the acquirer goes through long-term acquisition-restructuring cycles, our work establishes interesting links between the acquisition literature and the theory of punctuated equilibrium (Gersick, 1991; Tushman & Romanelli, 1985). As such, our theoretical framework draws together two forms of corporate development—acquisition and organizational restructuring—that operate at different levels of aggregation and have rarely been studied in conjunction.

Finally, apart from these theoretical contributions, our study may also offer an empirical contribution by formally checking the causality assumption underlying our performance models. The lagged dependent variable model that we used, in combination with the highly efficient Arellano-Bond estimator, allowed us to establish Granger causality. Although this is common practice among econometricians, it is considerably more reliable than the techniques that prevail in our field today, such as fixed effects and lagged independent variables used alone (Greene, 2003).

Managerial Implications

We believe that our theoretical framework and empirical results have important practical implications as well. Most notably, managers should not regard acquisition integration as a one-time, ad hoc event, but rather as a more iterative process that is unable to yield optimal performance in the short to medium term. Integration requires additional, post hoc efforts at the level of an acquiring firm as a whole if the firm is to unlock a greater portion of the synergistic potential of a past string of acquisitions than is possible through integration efforts at the level of each acquisition individually, because the synergistic potential of a given acquisition may become clearer in hindsight, especially since it often depends on those that are engaged in later on. Moreover, managers should be aware of the critical role that they play in striking a balance between acquiring and restructuring. Undertaking too many acquisitions without major restructuring will likely lead to increasingly suboptimal integration. Restructuring too often, however, will also weaken performance, because of the disruption and costs that it entails.

Limitations and Suggestions for Further Research

Our study suggests that it is important for future research to move beyond the notion of acquisitions as isolated events toward recognizing their embeddedness in sequences intended to implement a corporate strategy, which allows for a long-term and dynamic approach to studying their performance effects. One suggestion would be to refine our theory by studying acquisition sequences in greater detail (e.g., using year-by-year trajectories rather than mere counts). Another approach would be to complement the strengths of archival data with those of survey data. Although extensive time series of archival data were necessary to test our theory, since acquisition-restructuring cycles span long periods of time, we inevitably missed out on the distinctive advantages that survey data offer. For instance, survey data, unlike our archival data,

would allow one to study acquisition integration more directly, create finer-grained operationalizations of organizational restructuring, and measure acquisition size more accurately.

It also seems interesting to examine the boundary conditions of our theory. On the one hand, firms that acquire only occasionally might not have to undertake major restructuring at all, as they can largely avoid the accumulation of organizational inefficiencies. On the other hand, however, there are the highly acquisitive Ciscos and General Electrics that, somehow, also seem to be able to avoid the discrete bursts of restructuring that we found to be necessary for our sample firms to thrive. An intriguing possibility is that, drawing on their vast experience, these firms have learned to effectively absorb each of their acquisitions from the start, making restructuring largely superfluous. Another interesting possibility that future research might examine is that such firms have adopted modular organizational designs (Karim, 2006; Schilling & Steensma, 2001) that enable them to recombine their subunits more or less continuously without having to concentrate such activity in occasional bursts of radical organizational change.

Furthermore, although weak performance is well established as a key driver of organizational change (Greve, 2003; Romanelli & Tushman, 1994), we found that acquisitive growth in and of itself tends to trigger such change as well. This finding seems to contest the somewhat simplistic notion in the organizational change literature that top managers are so removed from the inner workings of their firms that they rely exclusively on performance feedback to get a sense of how the firms are doing. Instead, there may often be more real-time signals, such as the organizational inefficiencies that accumulate over an acquisition sequence and that gradually render a firm more difficult to coordinate. Future research could make important contributions by providing a better understanding of what it is exactly that drives major organizational change.

Finally, as already touched upon, future research may offer valuable insights into the efficiency of capital markets by exploring the extent to which investors can really foresee gains from acquisitions that are realized far into the future, such as the ones we found, especially since some of these may be contingent upon acquisitions undertaken subsequent to a focal one.

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