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How mindfulness and acquisition experience affect acquisition performance

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Abstract

Purpose – The purpose of this paper is to provide insights to the impact of acquisition experience from prior acquisitions on the performance of subsequent ones. The authors base the analysis on the concept of mindfulness which has recently gained increasing attention in organizational learning theory. The aim is to extend prior research on mindfulness in organizational learning by empirically addressing how mindfulness in knowledge transfer affects task performance in the context of a rare organizational event, i.e. an acquisition, and how it is moderated by the conditions surrounding that event.

Design/methodology/approach – Employing a path-related approach, the authors analyzed large acquisitions of multiple US acquirers in a sequence to be able to clearly identify feedback from preceding acquisitions on subsequent ones. The authors adopt individual acquisition events as the unit of analysis to demonstrate the effect of mindfulness on task performance, and follow the widely used approach of measuring acquisition performance by abnormal stock market returns around the time of an acquisition announcement.

Findings – The analysis reveals an alternating relationship between an acquirer's acquisition experience and its acquisition performance. This relationship is positively moderated by an acquirer's cash reserves and by the temporal spacing of its acquisitions, but negatively moderated by an acquirer's market-to-book value.

Originality/value – Path-related approaches are rarely used in the mergers & acquisitions literature. The paper is based on the concept of mindfulness and identifies an up to now unrecognized pattern in the performance of multiple acquisitions.

Keywords Mindfulness, Mergers & acquisitions, Empirical analysis, Acquisition experience, Moderations, Path, Acquisition performance, Alternating relationship

Paper type Research paper

Over the past three decades, research on organizational learning, briefly defined as change in a firm's behavior or cognition that occurs as the firm gains experience (Levitt and March, 1988; Argote and Miron-Spektor, 2011), has flourished. At the outset the vast majority of research on organizational learning has adopted a learning-curve perspective implying positive returns from experience (Yelle, 1979; Dutton and Thomas, 1984). However, more recent research has increasingly questioned the validity of the learning-curve perspective outside manufacturing settings. The reason is that in such contexts the firm is likely to be confronted with high levels of causal ambiguity, making it difficult for the firm to disentangle cause and effect relationships (Haleblian and Finkelstein, 1999; Barkema and Schijven, 2008).

This may particularly be true for rare organizational events such as corporate acquisitions, which we characterize as a buyer – the acquirer – gaining control over a



target company (Manne, 1965; Halpern, 1983; Fishman, 1988). First, acquisitions are events that are made up of a variety of different and complex activities, including amongst others, due diligence, negotiation, and financing (Hitt *et al.*, 2001), each of which has typically to be tailored to the focal acquisition (Haspeslagh and Jemison, 1991; Barkema and Schijven, 2008). Second, for most firms acquisitions are rare events and, by definition, rare events occur infrequently. As such, they pose specific challenges to the knowledge transfer process, that is, the process of applying knowledge gained in one situation to another situation (Lampel *et al.*, 2009). All this may explain why contrary to the prediction made by the learning curve, there is not necessarily a positive relationship between acquisition experience and acquisition performance. In fact, in their review Barkema and Schijven (2008) show that to date research on the relationship between acquisition experience and acquisition performance has yielded decidedly mixed findings.

The inconclusiveness of findings has given rise to the idea that the quality of learning in the context of rare organizational events such as acquisitions may be more important than the quantity of experience. Drawing on transfer theory from cognitive psychology (Ellis, 1978), Haleblan and Finkelstein (1999) argue that the transfer of acquisition routines from one acquisition to another may yield inferior results, in particular, when the acquisitions differ in terms of industry. This negative transfer effect, however, tends to diminish the more acquisitions are similar in terms of industry and the more overall acquisition experience the firm accumulates, as it may be able to develop the experience to identify underlying dissimilarities (Finkelstein and Haleblan, 2002). Similarly, Hayward (2002) argues and finds an inverted U-shaped relationship between the similarity in terms of industry of prior acquisitions and the focal acquisition, reasoning that too heterogeneous experience raises bureaucratic costs while too homogeneous experience inhibits exploration. Moreover, he argues and finds that both small losses in prior acquisitions and an adequate time lag between acquisitions will increase the quality of inferences derived from past acquisitions and, as such, positively contribute to the performance of the focal acquisition. Though different in detail, the common core argument of the aforementioned studies is that the nature of prior acquisitions, referring to similarity in terms of industry, affects the quality of inferences that are deployed to subsequent acquisitions and, ultimately acquisition performance.

With the present study, we aim at contributing to research on organizational learning in the context of rare events, in particular the relationship between the quality of learning and acquisition performance. Unlike previous research, however, we do not focus on industry similarity. Rather, we acknowledge that a pivotal challenge in the knowledge transfer process, especially in the context of rare events, refers to the degree of mindfulness with which a firm makes use of its knowledge base gathered in prior acquisitions. Here, mindfulness may best be described as the quality of attention and the awareness with which a task is carried out (Langer, 1989, 2000; Dane, 2011). We focus on how the degree of mindfulness in the knowledge transfer process may affect task performance and how the degree of mindfulness may be moderated by conditions surrounding that rare event. We adopt individual acquisition events as our unit of analysis. We follow the widely used approach of measuring acquisition performance by abnormal stock market returns around the time of an acquisition announcement (Haleblan and Finkelstein, 1999; Finkelstein and Haleblan, 2002; Hayward, 2002; Gulati *et al.*, 2009), using the Fama-French three factor model (Fama and French, 1993). Building on mindfulness, we rely on an important new stream of research

that has emerged within the broader topic of organizational learning (Rerup, 2005; Levinthal and Rerup, 2006; Weick and Sutcliffe, 2006; Argote and Miron-Spektor, 2011; Gartner, 2011), which, to the best of our knowledge, has not yet been applied to rare organizational events such as corporate acquisitions.

This study has two central arguments. First, the performance of prior acquisitions affects the degree of mindfulness with which knowledge from previous acquisitions is applied to subsequent acquisitions. Successful acquisitions will result in less mindful future knowledge transfer, thus, negatively affecting subsequent acquisitions and vice versa, yielding a wave-like relationship between acquisition experience and acquisition performance. Second, conditions surrounding the focal acquisition, in particular cash reserves of the acquiring firm, temporal interval between acquisitions, and feedback from the market, affect the degree of mindfulness toward the focal acquisition and, as such, acquisition performance.

To empirically investigate our arguments, we examine the acquisition behavior of US manufacturing and mining firms between January 1, 1980 and December 31, 2003. Overall, we find support for our hypothesis. We find a wave-like relationship between acquisition experience and acquisition performance, and that the conditions surrounding the focal acquisition event moderate this relationship. These results are also confirmed when controlling for industry similarity between prior acquisitions and the focal acquisition.

In advance, it seems appropriate to point to an important issue regarding the methodology of our study. We ground our theoretical reasoning in the concept of mindfulness. However, we do not directly observe and measure the degree of mindfulness with which an acquisition is carried out. This shortcoming is mainly due to our research approach involving the use of historical data. Given that we focus on rare events of the same kind, a longitudinal approach involving historical data were inevitable. However, this approach also basically inhibits us from gathering first-hand data that would have been necessary to directly capture the concept of mindfulness, such as self-report questionnaires, structured interviews, or performance-based measures (Bishop *et al.*, 2004; Baer *et al.*, 2009; Brown and Cordon, 2009; Ray *et al.*, 2011). Accordingly, we are left with the same problem of prior research such as Halebian and Finkelstein (1999), Finkelstein and Halebian (2002), or Hayward (2002), all of which also focussed on specific aspects within the broader topic of organizational learning in the context of rare events. Hence, given that we are not able to directly assess and measure the degree of mindfulness with which an acquisition was carried out, we have to infer from firms' actual behavior.

We begin with a summary of the concept of mindfulness. We then turn to exploring the role of mindfulness in organizational learning within the context of rare organizational events. We examine how mindfulness affects acquisition performance, and how mindfulness itself is affected by conditions surrounding an acquisition event. We introduce our sample and methodology, following which we present our statistical results. Finally, we discuss our overall findings and contributions, as well as limitations of our study

Mindfulness: a definition and characteristics

Mindfulness is a concept that is rooted in the fundamental capacity of human consciousness (Brown and Cordon, 2009). It is well known in the old Buddhist tradition (Goldstein, 2003; Kabat-Zinn, 2003) and has been rediscovered in a variety of scientific fields (Brown *et al.*, 2007; Siegel *et al.*, 2009), most notably in psychology and more recently also in management.

Considered to being a human capacity, mindfulness deals with the fundamental capacities of consciousness, namely attention and awareness (Brown and Cordon, 2009). “Mindfulness pioneer” Jon Kabat-Zinn, defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment to moment” (Kabat-Zinn, 2003, p. 145). Similarly, Bishop *et al.* (2004) define mindfulness as “self-regulation of attention so that it is maintained on immediate experience [...] adopting a particular orientation toward one’s experience that is characterized by curiosity, openness, and acceptance” (Bishop *et al.*, 2004, p. 232). Finally, social psychologist Langer (1989) sees mindfulness as a state of consciousness characterized by receptive attention and enriched awareness during the cognitive processing of sensory input. Her conception of mindfulness emphasizes that a mindful approach to any activity has certain characteristics: first, sensitivity to the environment; second, openness to novel information; third, continuous creation and refinement of categories structuring perception; and fourth, willingness to take multiple perspectives in problem solving (Langer, 1997; Langer and Moldoveanu, 2000).

Notwithstanding differences in detail, definitions agree on the experiential nature of mindfulness, focussing on how these experiences should consciously be processed – an issue that has also attracted the interest of philosophers. Husserl, for example, distinguishes two main forms of attitudes according to which experiences can be processed: the natural and the phenomenological (Welton, 1999). In the natural mode, everything that comes to awareness is processed through cognitive habitual filters. As a result, every novel experience automatically gets conceptualized without a diligent assessment of what it should be (Brown and Cordon, 2009). Langer refers to such kind of information processing as mindlessness, describing the rigid reliance on categories and distinctions created in the past, acting on automatic pilot, precluding attention to novel information and fixating on a single perspective (Langer, 1989, 1997). Thus, individuals deal with information as though it could have but a single meaning and be used in but a single way as they are blind to its novel aspects (Langer and Piper, 1987). The result is rigid, invariant behavior with little or even no conscious awareness behind it. As Husserl’s notation of “natural” implies, this attitude is the default mode of processing experience in human consciousness (Brown and Cordon, 2009).

Conversely, the phenomenological attitude describes a process in which the current experience is received as it is, that is, without habitual interpretation. When giving full and bare attention the current experience an individual is present in reality; a state stressed in the definitions of mindfulness. Hence, a mindful approach to process experience is characterized by the “sustained focussing of the mind upon an object or experience” (Brown and Cordon, 2009, p. 64). As this quote highlights, mindfulness is not something foregoing, rather it is sustainable when the effort of remembering oneself to be aware and pay attention is taken (Siegel *et al.*, 2009).

Mindfulness is not a feature that some individuals possess and others lack. Rather, all humans have the capacity for mindfulness, although as scholars have recognized there are both intra-individual variations over time as well as inter-individual variations (Sternberg, 2000; Rerup, 2004, 2005; Dane, 2011). Though mindfulness is rooted in human nature, considerable efforts need to be taken to achieve a high degree of mindfulness (Brown and Cordon, 2009). In sum then, we can conclude that mindfulness is a well-known and ever present phenomenon. As Sternberg (2000, p. 12) reasons, “Is there really anyone in the whole world who cannot relate to Ellen Langer’s [...] construct of *mindlessness* and its complement, *mindfulness*? I doubt it. [...] we all act at

times in ways that are so mindless that we find ourselves astounded. The construct of mindlessness and mindfulness are intriguing because they seem so much a part of our lives.”

Notwithstanding that mindfulness has traditionally been discussed on the individual level, researchers such as Weick *et al.* (1999), Rerup (2004), Weick and Sutcliffe (2006), or Levinthal and Rerup (2006) have applied it on an organizational level, typically in the context of organizational learning. Organizational learning is defined as change in a firm’s behavior or cognition that occurs as the firm acquires experience (Cyert and March, 1963; Levitt and March, 1988; Steen and Liesch, 2007; Argote and Miron-Spektor, 2011). The acquisition of experience, in turn, is associated with changes in the firm’s knowledge base, which regularly includes both explicit and tacit components (Argote and Miron-Spektor, 2011). Scholars have argued that knowledge is stored in what has been called routines, which may be defined as the “forms, rules, procedures, conventions, strategies, and technologies around which organizations are constructed and through which they operate” (Levitt and March, 1988, p. 380). Routines guide behavior and cognition and make the knowledge accessible to the members of the firm even if these have not themselves made the respective experience (Levitt and March, 1988). However, before a firm can store knowledge in its routines and as such adapt those, it must first acquire experience (Huber, 1991; Schwab, 2007; Bingham and Davis, 2012).

The process of adapting organizational routines is dependent upon level of experience accumulation, knowledge articulation, and knowledge codification (Zollo and Winter, 2002). Experience is accumulated by reflecting on the use of organizational routines to specific issues. However, this knowledge is – in a first step – typically stored within the individual. Knowledge articulation, in turn, refers to the effort of sharing such knowledge with other members of the firm, for example, through project reviews or mentoring efforts. In doing so, knowledge may be codified as artifacts such as manuals or reports that may be accessed throughout the firm (Zollo and Winter, 2002) and the accumulated experience is available on an organizational level. Though both knowledge articulation and codification are costly in that they require deliberate efforts and managerial attention, they are likely to pay off as higher levels of knowledge may give insights to the causes and contingencies of specific outcomes, thereby increasing the value of using routines for future events (Zollo and Winter, 2002).

However, not all scholars agree with the widespread assumption that systematic, analytical decision making yields superior results. Rather, scholars most notably Gigerenzer and co-authors (Gigerenzer, 2008; Gigerenzer and Brighton, 2009; Gigerenzer and Gaissmaier, 2011) have argued that heuristics may yield results as good as or even better than knowledge- and cost-intensive procedures of decision making – including mindfulness in decision making. While the aforementioned work focussed on the individual, several authors have recently argued that heuristics are also to be found on an organizational level in the context of strategic decisions (Bingham *et al.*, 2007; Bingham and Eisenhardt, 2011; Bingham and Haleblan, 2012)[1].

Despite the doubts raised by the previously mentioned literature stream, researchers have started to acknowledge the value of organizational mindfulness for such processes aimed at adopting routines. In this context, organizational mindfulness has been defined as “the extent to which an organization captures discriminatory detail about emerging threats and creates a capability to swiftly act in response to these details” (Vogus and Sutcliffe, 2012, p. 723). Similarly, Weick *et al.* (1999) have reasoned that mindfulness in an organizational context refers to enhanced awareness of discriminatory detail of

organizational processes. In particular, they argue that “mindful organizing” – specifically in high-reliability contexts – consists of preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and underspecification of structures. As Jordan *et al.* (2009, p. 468) have reasoned “it is important to understand that mindfulness does not exclude or oppose the idea of routines, but may in fact build upon routinized action [...]. In this respect, it can be regarded as an organizational phenomenon that, while grounded in individual mindful behavior [...] also builds upon organizational mechanisms.”

Though much of the research about organizational mindfulness has been informed from research on high-reliability organizations (Weick *et al.*, 1999; Vogus and Welbourne, 2003; Vogus and Sutcliffe, 2007), the importance of mindfulness to any type of organization is increasingly being acknowledged. In their simulation, Romme *et al.* (2010), for example, were able to show that mindful processing of experiences has a distinct effect on a firm’s ability to adapt its routines. They identify this effect to be a sigmoid one, similar to what we will propose. Further, they conclude that a mindful approach to learning leads to higher levels of knowledge, which in turn exhibits a positive effect on the firm’s dynamic capabilities. Similarly, Lavie and Miller (2008) found a sigmoid effect of alliance partnership internationalization on firm performance. They point to the possibility that the effects may be rooted in learning from experiences. Finally, Fiol and O’Connor (2003) in developing an initial framework for understanding the relationship between mindfulness and decision-making processes within organizations have reasoned that mindfully approaching a task is likely to yield better results.

Mindfulness and corporate acquisitions

Research in cognitive psychology indicates that when confronted with a novel task, individuals will approach it with a certain receptiveness to new information, openness to multiple perspectives, attentiveness to detail, and willingness to create and refine aspects of the task (Schneider and Shiffrin, 1977; Shiffrin and Schneider, 1977). In other words, in contrast to familiar tasks, novel tasks are approached mindfully (Langer, 1989). This mindful approach to novel tasks, however, is also likely to hold on an organizational level (Levinthal and Rerup, 2006).

Any novel task, but especially ones as complicated as an acquisition, requires considerable information processing (Zollo, 2009), but as theories of organizational attention have argued information-processing capacity is never in unlimited supply (Ocasio, 1997; Weick and Sutcliffe, 2006). To mitigate these limits, firms therefore undertake an effort to mindfully process whatever information is seen as most salient to the task (Taylor and Fiske, 1978; Lampel *et al.*, 2009). However, focussing on some information means neglecting other information (Ocasio, 1997). The focus on the most salient features of a task may well lead to premature cognitive commitments, whereby the firm encodes information in a single, rigid way (Langer and Piper, 1987). The consequences can be severe as what is relevant or irrelevant at one time may not be what is relevant or irrelevant at another (Langer, 1989; Levinthal and March, 1993; Gavetti and Levinthal, 2000).

When one acquisition is followed by another, the firm will be confronted again with an increase in the demand for information processing. Having derived inferences from the preceding acquisition, it is likely that managers will draw on these insights to deal with the focal acquisition (Haleblian and Finkelstein, 1999; Hayward, 2002). Cognitive commitments made previously will channel subsequent experiential search

(Levinthal and March, 1993; Gavetti and Levinthal, 2000), at the cost of critical re-examination of information (Chanowitz and Langer, 1981; Crossan *et al.*, 1999). In short, because they do not have unlimited information-processing capacity, firms are likely to rely on past distinctions giving insufficient consideration to changes in context (Langer, 2000) and to fundamental dissimilarities between targets (Langer, 1989; Finkelstein and Halebian, 2002). The result is an overall decrease in the level of mindfulness, reflecting a shift from perception to conception, which threatens, may even prevent, awareness of discriminatory detail (Weick and Sutcliffe, 2006). In this sense, less mindful information processing during a subsequent acquisition can be seen as a consequence of mindfulness during the previous one (Langer and Piper, 1987). This may add to the explanation why, contrary to what might be expected, the performance of subsequent acquisitions is so often lower than previous ones (Ellis, 1978; Halebian and Finkelstein, 1999; Finkelstein and Halebian, 2002).

The success or failure of an acquisition tends to be seen in relative rather than absolute terms. Thus, success or failure does not necessarily imply that acquisition performance has a positive or a negative value effect. In case an acquisition does not perform as well as the one previous to it, managers may come to doubt their own abilities (Lewin *et al.*, 1944; Hayward, 2002), engendering a degree of uncertainty about how future acquisitions should be managed and thereby increasing cautiousness (Milliken and Lant, 1991). In this context, Langer (1989) has reasoned that mindfulness is more likely whenever negative consequences are experienced that deviate from the outcomes of previous similar behavior. Similarly, Weick *et al.* (1999) propose that failure encourages mindfulness. All this suggests that failure leads to an increase in the degree of mindfulness. In the course of such a heightened degree of mindfulness, information is more closely scrutinized and assumptions about cause-effect relationships questioned. In short, more cognitive processes are activated and managers engage in more mindful analysis, the result of which can be the uncovering of differences between acquisitions, and the reasons behind less good performance. To bring such insights to the organization's knowledge base, measures like project debriefs or mentoring relationships are established (Romme *et al.*, 2010). Thus, rare events, such as acquisitions, and especially acquisitions that do not perform as expected, can usher in a reevaluation of experience and an increased appreciation for distinctions between different acquisitions followed by adjustments in routines (Starbuck and Milliken, 1988; Weick *et al.*, 1999; Starbuck, 2009).

Among the primary attributes of mindfulness are an awareness of the environment coupled with openness to new information and a willingness to adjust one's perceptions (Langer, 1989). Thus, the process we describe above might be seen as a return to mindfulness. Such mindfulness is likely to lead to an increase in acquisition performance. However, in case an acquisition is considered successful, this success may in fact turn out to be a liability. As Starbuck and Milliken (1988, pp. 329-330) have reasoned, "Success breeds confidence and fantasy. When an organization succeeds, its managers usually attribute this success to themselves, or at least to their organization, rather than to luck. The organization's members grow more confident, of their own abilities, of their managers' skills, and of their organization's existing programs and procedures. They trust the procedures to keep them apprised of developing problems, in the belief that these procedures focus on the most important events and ignore the least significant ones."

Research has shown, that managers typically attribute the reasons for success to themselves (Billett and Qian, 2008), seldom considering the possibility that circumstances

or external factors may have played a contributing role (Levinthal and March, 1993). Indeed, the feeling of success can be problematic as, just like failure, it can have a distinctive effect on whether future acquisitions are performed mindfully. When an acquisition is successful, managers are likely to become mindless thereafter, pay less attention to a specific task and rely on habituated routines, reasoning that in doing so they eliminate unnecessary effort and redundancy (Weick *et al.*, 1999). On the organizational level, to save efforts which are perceived as unnecessary, meetings to coordinate upcoming acquisitions between all involved departments are kept to a minimum, critical voices raised are ignored to keep the pace, and middle management is hardly involved. Stated differently, an attempt is made to preserve the winning approach for the next acquisition. Accordingly, the subsequent acquisition will be made relying on previous information, assuming similarities that may or may not exist between the acquisitions. In doing so, established routines are evoked. Thus, in light of success, prior mindfulness will be followed by less mindful behavior (Langer and Piper, 1987) and as long as the performance of subsequent acquisitions is acceptable, organizations will adhere to its acquisition approach, making marginal changes at best (Starbuck and Milliken, 1988). Hence, one might say that the firm becomes a victim of its own success (Starbuck and Milliken, 1988; Miller, 1994). In light of these arguments, we propose:

- H1.* Over time, periods of mindfulness will alternate with periods of less mindfulness, resulting in an alternating relationship between acquisition experience and acquisition performance.

As we have reasoned, it is likely that acquisition performance depends upon the degree of mindfulness with which knowledge from prior acquisition experience is transferred to the focal acquisition. In the following sections, we consider three factors that are likely to moderate the wave-like relationship. The importance of considering moderators in mergers & acquisitions (M&A) studies has, for example, been argued by King *et al.* (2004). In their meta-analysis the authors explored, among other things, the relationship between acquisition experience and performance on some frequently suspected moderators such as hostile attitude or method of payment. Interestingly, they found unexplained variation, but were not able to explain this variation by the moderators they reviewed. Therefore, they suspected yet unidentified moderators and call for more research employing novel moderators in M&A studies. We seize their call and subsequently propose the following moderators to have a distinct effect on mindfulness and, as such, affect the relationship between acquisition experience and acquisition performance: first, the cash reserves of the acquiring firm; second, the temporal interval between acquisitions; and third, the feedback from the market.

The cash reserves of the acquiring firm

It has long been recognized that the cash reserves of an acquiring firm have an impact on its acquisition behavior (Smith and Kim, 1994; Harford, 1999). Taking an agency theory perspective Jensen (1986) contends that when cash reserves are greater than what is needed to meet payments to stakeholders and to fund value-increasing projects, managers engage in wasteful expenditures, and similar to Rhoades (1983), he also maintains that managers spend cash reserves on acquisitions in order to reduce their own personal undiversified risk and to increase their social status and power through empire building. Obviously, such motivations negatively affect the mindfulness with which firms make acquisitions.

In a similar vein, large cash reserves allow a firm to avoid the costs associated with external financing and so afford it considerable discretion in making investments. This, combined with overconfidence, even hubris, following the good past performance that has led to large cash reserves in the first place, can lead to decreasing mindfulness when making another acquisition (Malmendier and Tate, 2008; Roll, 1986). As Harford (1999, p. 1971) has argued, having significant cash reserves “provides freedom from external due diligence that could simply allow managers to make more mistakes than other better monitored firms.” Thus, managers may not mindfully engage in acquisition making, relying instead on distinctions created in the past. For example, the CEO of Deutsche Börse AG Werner Seifert announced in 2004 that he intended to attempt for the third time to acquire the London Stock Exchange. Equipped with cash reserves of 1.6 billion Seifert pursued that objective despite all obstacles with what some might describe as a cognitively and emotionally rigid vision that led him to make a false reading of the situation at that time. Powerful shareholders eventually stepped in to put an end to Seifert’s determination to use Deutsche Börse AG reserves to drive home an acquisition that had eluded him.

While it is true that when firms are able to raise new capital and finance projects internally they can avoid capital market monitoring, examples such as the Deutsche Börse case and others documented in the literature and business press provide evidence of shareholder monitoring (Jensen, 1986; Dittmar and Mahrt-Smith, 2007). Indeed, equity holders prefer that cash reserves above a given buffer be paid out seeing that as a kind of check on less than mindful investing (Harford, 1999; Faleye, 2004; Harford *et al.*, 2008). When firms are slow to distribute surplus funds, which cannot be invested into value-enhancing projects, they may become takeover targets themselves, according to the market for corporate control hypothesis (Opler *et al.*, 1999). When participants on the market for corporate control intensify their monitoring, managers may intensify their own efforts to perform well as indeed, their jobs may depend on it (Manne, 1965; Jensen and Ruback, 1983; Jarell *et al.*, 1988). This may have a positive effect on mindfulness. For instance, the environment will be mindfully scanned for new sources of information and potential value-creating targets (Fiol and O’Connor, 2003). This may yield information that belies existing categories and beliefs, forcing the firm to consider alternative perspectives and to update and adapt its routines. For example, in the late 1990s and into the new millennium in an environment characterized by high M&A activity, Swisscom enjoyed increasing liquidity which rose from CHF 1.3 billion in 1999 to CHF 7.1 billion in 2001. While it was common at that time for incumbents in the ICT industry to engage in acquisitions, despite mindful screening of several acquisition opportunities, Swisscom made none. Recognizing that shareholders were closely monitoring the situation, top managers at Swisscom repeatedly justified their decision not to engage in major transactions by pointing to strict investment criteria, thereby revealing their mindfulness. As Markus Rauh and Jens Alder, then chairman of the supervisory board and CEO of Swisscom, respectively, elaborated in their letter to shareholders, “If we can’t explain to our shareholders why we should do it instead of them investing directly, there is no reason why Swisscom should acquire” (Swisscom, 2001, p. 3).

The cases we have outlined show that the effect of cash reserves on organizational behavior is ambiguous (Harford, 1999; Faleye, 2004). Therefore, we suggest two competing hypotheses:

H2a. The extent of cash reserves negatively moderates the relationship between acquisition experience and acquisition performance.

H2b. The extent of cash reserves positively moderates the relationship between acquisition experience and acquisition performance.

The temporal intervals between acquisitions

Organizational learning research has shown that time may be an important factor regarding a firm's ability to draw inferences from experiences and also to apply acquired knowledge to subsequent experiences (Dierickx and Cool, 1989; Argote and Miron-Spektor, 2011). On the one hand, firms are subject to bounded rationality and limited cognitive capacity. As a result of these limitations, it takes considerable time to draw inferences from experience and to identify and subsequently store newly acquired knowledge in the firm's collective memory (Cohen and Levinthal, 1990). Dierickx and Cool (1989), for example, found that in case firms do not allow themselves sufficient time to draw inferences they may face "time compression diseconomies," meaning that the return to learning diminishes to the degree that input is held constant but the time allowed to learn and draw inferences is shortened.

On the other hand, it is reasonable to assume that to the degree that the time between two events increases, the likelihood that the inferences derived from the prior event are readily available, accessible, and applicable to the focal event decreases (Argote *et al.*, 1990; Hayward, 2002). In strong support of this assumption, research on organizational learning found that – contrary to what the traditional learning-curve perspective implies – recent experience may be more valuable for organizational learning than experience acquired further in the past (Argote *et al.*, 1990; Benkard, 2000). This, however, points to the fact that organizations may unlearn and forget (Hedberg, 1981; Benkard, 2000).

Inferences derived from past acquisitions may be stored in the firm's collective memory. Nonetheless, over time some will be lost with turnover in personnel and simply with the passage of time (Benkard, 2000; De Holan and Phillips, 2004; Meschi and Métais, 2013). After all, individuals are forgetful. They even forget where they have stored information and why it was considered significant in the first place (Meschi and Métais, 2013). Moreover, new information is stored on top of old information (Hedberg, 1981; Tsang and Zahra, 2008), making older information still more difficult to access.

On an organizational level, routines are one way that firms can effectively bank information, as they do not depend on individual actors the information encapsulated in them can survive (Levitt and March, 1988). However, since acquisitions are performed rather infrequently, the associated acquisition routines that may have emerged are very rarely used, and may even vanish over time (Benkard, 2000). Thus, loss of information is likely to increase with time, and the longer the time interval between two acquisitions the less distinctions created in the past can be relied upon, simply because the information needed is no longer available within the firm (Argote *et al.*, 1990; Epple *et al.*, 1991; Benkard, 2000).

However, an organization that is not able to rely on distinctions created in the past is likely to mindfully approach the task and all the particulars related to it (Langer and Imber, 1979). In other words, to the degree that an organization is unable to rely on its store of knowledge, that is, to the degree a given task is perceived as novel, its managers are likely to act mindfully.

For most firms, corporate acquisitions are rare events. This, however, implies that it may be reasonable to assume that regularly there is a considerable temporal interval between any two acquisitions a firm performs. Accordingly, we conclude that

in the context of rare events “time compression diseconomies” are of minor importance, while organizational unlearning and forgetting may dominate. Hence, we propose:

- H3. The length of the temporal interval between two subsequent acquisitions positively moderates the relationship between acquisition experience and acquisition performance.

The market-to-book value of an acquirer

The degree to which a task is approached mindfully depends upon one’s confidence in being capable of successfully performing a task (Langer, 1989). This is why novel tasks are in general approached mindfully; while – everything else equal – familiar tasks tend to be approached less mindfully. However, one’s confidence in successfully performing a task is not only derived from the previous encounters with the respective task. Rather, it is likely that other factors affect the degree of confidence, the feedback from the market in the form of the market-to-book ratio being one of them.

Previous research has shown that a relevant classification of firms in the context of acquisitions is whether they are “glamour” or “value” firms (Fama and French, 1992; Ikenberry *et al.*, 1995; Kohers *et al.*, 2007). Glamour firms are characterized by high market-to-book ratios, whereas value firms exhibit a low market-to-book ratio. Value firms show a value premium for investors (Fama and French, 1998). This premium is paid due to higher fundamental risks of value firms[2]. Higher fundamental risks manifest, for example, in higher levels of leverage or lower earnings per share (Fama and French, 1995; Chen and Zhang, 1998). If those ratios are weak, it is considerably harder for these acquirers to obtain acquisition financing. Thus, the financing banks are likely to exercise a tight monitoring if the key financial ratios of the firm are compromised. The monitoring could materialize, for example, by checking the adherence to certain debt covenants on a regular basis. Those responsible within a firm for substantial strategic decisions, such as acquisitions, consider the market-to-book ratio as the market’s feedback regarding their management capability and quality (Rau and Vermaelen, 1998). Being aware of their own risks, such firms are therefore likely to be more prudent when approaching an acquisition (Rau and Vermaelen, 1998). They do so mindfully, knowing that a major acquisition may well determine the survival of the firm, and thus resulting in a better post-acquisition performance (Rau and Vermaelen, 1998; Sudarsanam and Mahate, 2003).

In contrast, managers in glamour firms are likely to perceive the high market-to-book ratio as a confirmation for their outstanding management capability and quality, making these managers prone to overestimate their abilities to successfully acquire a target firm. Such overconfidence infects managers with hubris (Roll, 1986; Hayward and Hambrick, 1997), leading them to underestimate the complexity of the acquisition task and, as a result, approach the focal acquisition less mindfully (Langer, 1989). Further, for glamour acquirers, it is easier to finance acquisitions as they have a common acquisition currency at hand, i.e. their own stock. As the acquirer management does not need to worry about tight monitoring by the financing banks, acquirers may enter less mindfully into deals. A weaker monitoring was found to result in weaker acquisition performance (Wright *et al.*, 2002; Bharadwaj and Shivdasani, 2003; McDonald *et al.*, 2008). Considering this relationship, investors are likely to

discount transactions of acquirers with a high market-to-book value. In particular, we hypothesize:

- H4. The market-to-book ratio negatively moderates the relationship between acquisition experience and acquisition performance.

Figure 1 summarizes our four hypotheses graphically.

Method

Sample

We look at large, publicly disclosed acquisitions made by US manufacturing and mining firms between January 1, 1980 and December 31, 2003. The most important feature of our sample is that we can clearly identify the order of acquisitions of an individual acquirer, traced back to 1948. For this purpose we used Federal Trade Commission (FTC) Large Merger Series (1948-1979) data to eliminate firms that made acquisitions prior to 1980. As this database covers only the sectors manufacturing and mining we had to constrain our sample accordingly. We also checked for the possibility of changes in company name and multiple announcements of single acquisitions. We define large acquisitions as transactions with a value greater than ten million dollars. To test our hypotheses, we created a sample of acquirers who first started making acquisitions at some point during our time window. We limited our analysis to the first five acquisitions made by any given firm as complete data sets for acquirers which made more than five acquisitions were available only in a few cases. This procedure yielded a final sample of 65 large, completed acquisitions.

We followed Finkelstein and Halebian (2002) in setting two requirements for first acquisition classification:

- (1) the acquisition was made between 1980 and 2003; and
- (2) no large acquisition was made by the firm between 1948 and 1979.

We ignored small acquisitions because of their negligible impact on acquisition experience, and acquisitions made before 1948 because they took place in a dramatically different environment and hence were unlikely to provide relevant experience.

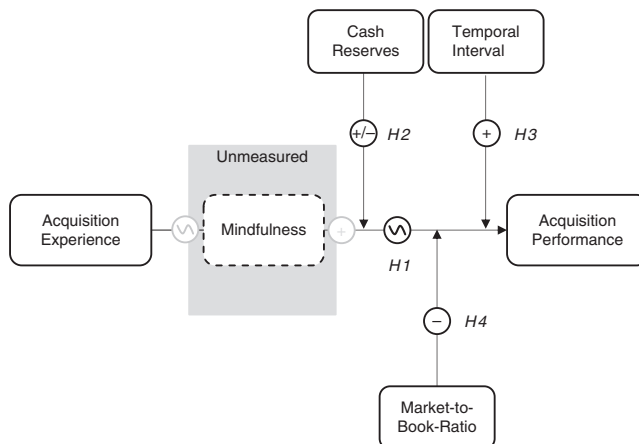


Figure 1.
A conceptual model of acquisition experience, mindfulness, acquisition performance, and moderators

We retrieved data on acquisitions made during our 1980 through 2003 window from the deals database of Thomson ONE Banker. Financial data were taken from the Worldscope database of Thomson Financial, and data on market returns were gathered from Thomson ONE Banker Analytics.

Dependent variable

Our dependent variable is acquisition performance, which we measured by the acquirer daily excess market returns during a short event window centered around the acquisition announcement date (Brown and Warner, 1980). This approach is based on the assumption of information efficient markets, meaning that the importance of a particular event, an acquisition for instance, is reflected in stock price changes in the respective period. Excess market return, also called abnormal return, is calculated as the difference between the actual stock return and the return that would be expected given the performance of the market. Based on the capital asset pricing model (CAPM), which has traditionally been used to calculate abnormal returns, the abnormal return of stock i for day t (AR_{it}) can be calculated as follows:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i \times R_{mt})$$

where R_{it} equals return on stock i for day t , R_{mt} equals return on the market portfolio for day t , α_i equals a constant return that is estimated during a period prior to the event, and β_i equals β of stock i , reflecting the nondiversifiable risk that is estimated during a period prior to the event.

The CAPM is rigid in claiming that the returns on a stock may be calculated based on market risk alone. Fama and French (1992) found that while β_i consistently fails to explain cross-sectional variation in average stock returns, two firm-specific factors, market value of equity and book-to-market ratio do offer consistent and significant explanations. Fama and French (1993) propose a three-factor-model for expected stock return, which includes the return on a stock index, excess returns on a portfolio of small stocks over a portfolio of large stocks (SMB = small minus big), and excess returns on a portfolio of high book-to-market stocks over a portfolio of low book-to-market stocks (HML = high minus low), which we use in calculating the abnormal return of a stock as follows:

$$AR_{it} = R_{it} - (\alpha_i + b_i \times R_{mt} + s_i \times SMB_t + h_i \times HML_t)$$

SMB and HML are calculated by ranking stocks according to their capitalization and their book-to-market values. We obtained historical values for SMB and HML, from Kenneth French's homepage (<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html>). We computed abnormal returns over a common observation window of five trading days before through five trading days after the announcement of the acquisition event (Finkelstein and Haleblan, 2002).

A multitude of factors may explain acquisition performance. This is, amongst others, mirrored in the various reviews summarizing the ever-increasing body of literature on acquisition performance (King *et al.*, 2004; Barkema and Schijven, 2008; Haleblan *et al.*, 2009). We consulted these sources in order to come up with our final models, in particular, in terms of control variables. In our final models, we provide control variables on three different levels, namely; acquirer level controls, target level controls, and transaction and industry level controls. In doing so, we follow previous research (see, e.g. Finkelstein and Haleblan, 2002; Hayward, 2002).

We also acknowledge the call for more research on moderating relationships within research on M&A (King *et al.*, 2004). Therefore, we in a first step consulted prior research employing moderating relationships (e.g. Stahl and Voigt, 2008; Homburg *et al.*, 2009). Considering our theoretical framework, we in a second step decided to test three moderators that are likely to affect the degree of mindfulness in decision making and if tested previously as a moderator have not yet been shown to yield consistent result in prior research.

Independent and moderating variables

Consistent with prior research we measured acquisition experience by the number of acquisitions made (e.g. Hayward, 2002). In particular, we followed Haleblan and Finkelstein (1999) and operationalized acquisition experience as the total number of acquisitions with a transaction value > \$10 million made by the firms in our sample between 1980 and 2003.

We measured Acquirer cash reserves in million US\$ as the log of the sum of its cash and short-term investments as given in its last annual report before the focal acquisition (Harford, 1999). Temporal interval was measured by the time elapsed between the announcement of the focal acquisition and the closing date of the prior acquisition. As first acquisitions have no predecessors we applied the approach of Hayward (2002) and measured the time elapsed between announcement of the initial acquisition and the starting date of our database, January 1, 1980. Market-to-book ratio was operationalized using Acquirer Tobin's Q reflecting the capital market's assessment of the acquiring company, which is found to have an impact on acquisition performance (Lang *et al.*, 1989; Rau and Vermaelen, 1998). We used the ratio of the market value of shares and the value of common equity from the most recent annual balance sheet prior to the focal acquisition.

Control variables

Acquirer level control variables. Acquiring firm size was measured in billion US\$, using acquirer's sales for the financial year preceding the focal acquisition (Tosi and Gomez-Mejia, 1989; Kroll *et al.*, 1997). Acquiring firm leverage was measured as the ratio of total liabilities to total shareholder equity (Maloney *et al.*, 1993). Data were taken from the acquirer's most current annual balance sheet preceding the focal acquisition.

Target level control variables. By the variable Target-to-target similarity we captured the similarity between targets of a certain acquirer by comparing the primary SIC codes of the focal target with those of prior targets. Based on the approach described in Haleblan and Finkelstein (1999) where target-to-target similarity is measured as a proportion, we measured target-to-target similarity by dividing the number of all targets' SIC codes which match on a four-digit level by the number of all targets' SIC codes. For calculating these numbers we considered all prior as well as the focal acquisition. To control for deal size we introduce the variable target value, which is measured in billion US\$. Following Bogan and Just (2009) target value is calculated by subtracting the value of any liabilities assumed in the transaction from the transaction value and by adding the target's net debt. Net debt is straight debt plus short-term debt plus preferred equity minus cash and marketable securities as of the date of the most current financial information prior to the announcement of the transaction (Bogan and Just, 2009). Further, we considered the relative size between acquirer and target. For that purpose we calculated the ratio of target value and the average market value of the acquirer. The average was calculated using daily market values from a period

commencing 250 and ending 30 days before the announcement. Toehold accounts for the presence of a pre-acquisition relationship and is coded 1 if there has been an equity relationship with the target before and 0 if there has been none.

Transaction and industry level control variables. We considered prior acquisition performance, which was measured as the stock market reaction on the preceding transaction. The reaction was measured identically to what has been described above concerning the variable acquisition performance. Stockswap is a dummy variable coded 1 if at least 50 percent of the consideration were settled by a swap of acquirer against target stocks and 0 if otherwise. Majority is another dummy variable indicating that the acquirer purchased a majority in the target. Industry performance controls for the industry return in the month of the focal acquisition. Average value weighted industry returns for 49 industry portfolios which were based on four-digit SIC codes were obtained from Kenneth French's homepage and matched to the month of the acquisition (<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html>). Table I provides an overview of the variables, their operationalizations, and data sources.

Analysis and results

We used ordinary least squares (OLS) regression analysis to test our hypotheses. As a White-test showed the presence of heteroskedasticity (Wooldridge, 2002), we followed Aiken and West (1991) and used heteroskedasticity robust Huber-White-Sandwich estimators (White, 1980). Table II provides some background information on the firms undertaking acquisitions in this sample. Amongst others Table II reveals average acquisition performance for this sample to be 3 percent, which is in line with findings of others (Asquith, 1983; Antoniou *et al.*, 2007). Moreover, the average firm in our sample achieved US\$ 1.48 bn in sales and undertook one acquisition every 3.8 years. On average firms within our sample acquired targets with a size of about one fourth of their own market capitalization.

Table II also displays the correlations of the variables used in this study. The magnitude of correlation among the variables is relatively small for most cases. However, in few cases correlation exceeds 0.5 and 0.6. The literature provides different threshold levels with regard to correlations. While some authors suggest a critical threshold level of 0.6 (Foo *et al.*, 2006), others suggests this level to be 0.75 (Tsui *et al.*, 1995) or even 0.8 (Kennedy, 1979). Hence, as Tsui *et al.* (1995, p. 1531) reason, "there is no definite criterion of the level of correlation that constitutes a serious multicollinearity problem." Therefore, we tested for the presence of multicollinearity by analyzing the variance inflation factors. With an average value of 1.93 and a maximum value of 2.76 the variation inflation factors are well below the critical value of 10 that is commonly referred to in the literature (see, e.g. Tan and Tan, 2005; Souitaris and Maestro, 2010). Thus, from these results we conclude that there seems to be no significant impact of multicollinearity within our study.

Table III reports the results from the OLS regression. Model 1 shows the model with control variables. In *H1* we predicted an alternating relationship between acquisition experience and acquisition performance. In Model 2 the coefficients for the linear and the cubic terms are negative (−0.726 and −0.029, respectively), while the coefficient for the squared term is positive (0.263). All coefficients are statistically significant at the 0.1 percent level ($p < 0.001$). The coefficients indicate an alternating relationship, where acquisition performance first decreases and then recovers, but again decreases as the company goes on acquiring. This result supports our basic reasoning, according

Number	Variable	Operationalization	Source
1.	Acquisition performance	Stock market excess return calculated by the actual return of the acquirer in a window of five days prior and five days after the acquisition minus the return forecasted by a Fama-French three factor model	Thomson ONE Banker Analytics; Homepage Kenneth French
2.	Acquisition experience	Number of publicly disclosed acquisitions by the acquirer between January 1, 1980 and December 31, 2003 with a transaction value greater than ten million dollars	Thomson ONE Banker Deals
3.	Acquiring firm size	Sales number of the acquirer at year end prior to the focal acquisition	Worldscope
4.	Acquiring firm leverage	Acquirer's total liabilities divided by total shareholders' equity at year end prior to the focal acquisition	Worldscope
5.	Acquirer Tobin's Q	Market capitalization divided by book value of shareholders' equity at year end prior to the focal acquisition	Worldscope
6.	Acquirer cash reserves	Sum of short-term investments and cash at hand on the balance sheet at year end prior to the focal acquisition (logged)	Worldscope
7.	Target-to-target similarity	Ratio of the number of targets' SIC codes matching on the four-digit level and the number of all targets' SIC codes	Thomson ONE Banker Deals
8.	Target value	Calculated by subtracting the value of any liabilities assumed in the transaction from the transaction value and by adding the target's net debt. Net debt is straight debt plus short-term debt plus preferred equity minus cash and marketable securities as of the date of the most current financial information prior to the announcement of the transaction	Thomson ONE Banker Deals
9.	Relative size	Ratio of target value and average market value of the acquirer preceding the focal acquisition	Thomson ONE Banker Analytics

(continued)

Table I.
Overview of variables

Table I.

Number	Variable	Operationalization	Source
10.	Toehold	Dummy variable coded 1 if the acquirer holds an equity stake in the target prior to the acquisition and 0 if not	Thomson ONE Banker Deals
11.	Time	Time elapsed between the announcement of the focal acquisition and the closing date of the prior acquisition	Thomson ONE Banker Deals
12.	Prior acquisition performance	Stock market excess return on the preceding acquisition	Thomson ONE Banker Analytics; Homepage Kenneth French
13.	Stock swap	Dummy variable coded 1 if at least 50% of the consideration were settled by a swap of acquirer against target stocks and 0 if otherwise	Thomson ONE Banker Deals
14.	Majority	Dummy variable coded 1 if the acquirer acquired a majority in the target and 0 if not	Thomson ONE Banker Deals
15.	Industry performance	Industry return in the month of the focal acquisition based on 49 industry portfolios on the bases of SIC codes	Homepage Kenneth French

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Acquisition performance	0.03	0.11	1.00													
2. Acquisition experience	3.00	1.43	-0.19	1.00												
3. Acquiring firm size	1.48	4.38	-0.07	0.11	1.00											
4. Acquiring firm leverage	1.07	1.37	0.28*	0.04	-0.09	1.00										
5. Acquirer Tobin's Q	6.95	17.23	-0.11	0.21***	-0.09	-0.09	1.00									
6. Acquirer cash reserves	9.68	2.68	-0.26*	0.11	0.56***	-0.19	0.22***	1.00								
7. Target-to-target similarity	0.38	0.34	-0.04	0.63***	0.35**	-0.04	0.29*	0.33**	1.00							
8. Target value	0.37	2.07	-0.22***	0.19	0.09	-0.08	0.07	0.26*	0.24***	1.00						
9. Relative size	0.27	0.44	0.09	-0.19	-0.10	0.16	-0.12	-0.21***	-0.22***	0.02	1.00					
10. Toehold	0.17	0.38	-0.06	0.29*	0.07	-0.01	0.25*	0.15	0.21***	-0.06	-0.16	1.00				
11. Time	3.80	5.76	0.19	-0.67***	-0.11	-0.13	-0.13	-0.10	-0.53***	-0.08	0.24***	-0.28*	1.00			
12. Prior acquisition performance	0.04	0.10	-0.04	0.19	-0.17	0.07	0.16	-0.20	0.04	0.09	0.15	-0.15	-0.15	1.00		
13. Stock swap	0.14	0.35	-0.27*	0.09	-0.05	-0.08	0.45***	0.26*	0.15	0.35*	0.13	0.06	-0.07	0.08	1.00	
14. Majority	0.88	0.33	0.08	-0.03	-0.12	0.01	0.08	-0.06	0.01	0.06	0.16	-0.58***	0.08	0.11	0.15	1.00
15. Industry performance	1.27	7.56	0.12	0.04	-0.07	0.19	0.28*	-0.18	0.09	0.10	0.01	0.17	-0.01	0.04	0.28* 0.00	

Notes: SD, Standard deviation. **** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$

Table II. Descriptive statistics and correlation coefficients

	Model 1		Model 2		Model 3	
	Coef	SE	Coef	SE	Coef	SE
Acquirer level variables						
Acquiring firm size	0.001	0.004	0.002	0.004	0.004	0.004
Acquiring firm leverage	0.021**	0.007	0.016**	0.005	0.018**	0.005
Acquirer Tobin's Q	-0.000	0.001	0.000	0.001	0.013*	0.006
Acquirer cash reserves	-0.009	0.008	-0.008	0.008	-0.035*	0.013
Target level variables						
Target-to-target similarity	0.102	0.061	0.101	0.064	0.064	0.063
Target value	-0.007****	0.004	-0.004	0.004	-0.006	0.004
Relative size	0.003	0.026	0.002	0.022	0.017	0.020
Toehold	0.023	0.052	0.047	0.043	0.083*	0.041
Transaction and industry level variables						
Time	0.007****	0.004	0.000	0.005	-0.016****	0.008
Prior acquisition performance	-0.038	0.166	0.181	0.167	0.222	0.153
Stock swap	-0.063	0.052	-0.058	0.048	-0.109**	0.038
Majority	0.043	0.041	0.066	0.040	0.085*	0.037
Industry performance	0.001	0.003	0.002	0.002	0.003	0.002
Independent variables						
Acquisition experience			-0.726***	0.190	-1.012***	0.221
Acquisition experience squared			0.263***	0.069	0.320***	0.076
Acquisition experience cubic			-0.029***	0.008	-0.034***	0.008
Interaction effects						
Experience × cash reserves					0.008*	0.003
Experience × time					0.011*	0.005
Experience × Tobin's Q					-0.003*	0.001
F-value	15.74		14.89		21.44	
R ²	28.50		43.87		56.18	
Increase in R ²			15.37**		12.31**	
Increase in R ² F-value			5.51		6.09	

Table III.
Results of the
OLS-regression

Notes: Coef, coefficient; SE, standard error. Time dummies and constant not shown. **** $p < 0.1$; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

to which the quality of learning in the context of rare organizational events such as acquisitions may be more important than the quantity of experience, but that the quality of learning may directly be dependent upon the degree of mindfulness with which a task is approached. Acquirers seem to initially suffer from less mindfully applying lessons from first-acquisition experience – resulting in a limited quality of learning – but that less successful performance prompts more mindful application of lessons in the subsequent acquisition. In other words, poor acquisition performance seems to bring about a higher quality of learning and vice versa.

Thus, *H1* is supported. Model 3 includes three factors that we hypothesize moderate the alternating relationship between acquisition experience and performance. We proposed two alternative hypotheses as to the moderating impact of cash reserves. *H2a* states that cash reserves have a negative effect, and *H2b* that they have a positive one. Our results support the latter hypothesis, since the coefficient of the interaction of cash reserves and acquisition experience (0.008) is positive and significant at the 5 percent level. This suggests that shareholder scrutiny forces firms with large cash reserves to make mindful decisions. In *H3* we predict that longer time intervals between subsequent acquisitions have a positive moderating effect on the relationship

between acquisition experience and acquisition performance. The coefficient of the interaction variable between temporal interval and acquisition experience is positive (0.011) and statistically significant ($p < 0.05$), thus providing support for our third hypothesis. In our fourth hypothesis we suggest a negative moderation effect of market-to-book ratio on the basic alternating relationship between acquisition experience and acquisition performance. Indeed, we find that the coefficient is negative (-0.003) and statistically significant at the 5 percent level. All this suggests that the relationship between the quality of learning – driven by the mindfully approaching a task – and acquisition performance is contingent upon different moderating effects. Models 2 and 3 show high F -values (14.89 and 21.44), indicating good overall model fit. The explanatory power of the models (R^2) is at a very good level, as Model 2 can explain nearly 44 percent of the variation, and Model 3 56 percent, respectively. Further, compared to the control model the explanatory power increases significantly when adding the independent variables (adding 15.37 percentage points) and the moderating factors (adding another 12.31 percentage points). We performed nested regressions to analyze whether the increases in explanatory power are significant. Our results show that adding the three terms of acquisition experience needed to describe the alternating relationship do indeed add significantly to the explanatory power of the model ($p < 0.05$). Moreover, the inclusion of moderating factors further adds significantly to the model's explanatory power ($p < 0.05$). Similarly, the F -values of the increases from the partial models are high (5.51 and 6.09, respectively). Further, we tested whether our results hold when using another measure for the dependent variable. Instead of the performance measure based on the Fama-French three factor model, we calculated an alternative one using the market model and yielded largely similar results. Also, testing for omitted variables using Ramsey's RESET test indicates no systematic bias.

Discussion

Our intention in undertaking this study was to further our understanding of organizational learning in the context of rare organizational events such as corporate acquisitions. In particular, this study set out to explore the effect of acquisition experience on acquisition performance and the role that mindfulness may play in this relationship. As pointed out above, several reasons inhibited us to directly measure mindfulness. Accordingly, any results obtained in this study have to be considered against the background of this shortcoming. Nonetheless, if one accepts our theoretical reasoning, then several interesting implications emerge.

Contrary to traditional learning-curve theory which holds that all lessons are good and applicable lessons, rooted deep in the concept of mindfulness is the possibility that experience may in some circumstances be harmful. Depending on the nature of the task, successful performance of it may vary with the degree of mindfulness applied in transferring knowledge from previous events to subsequent ones. We have argued that antecedent conditions, such as prior task performance, and the extent of novelty may affect the degree of mindfulness in knowledge transfer, and have extended this idea to propose that a period of mindful behavior will be followed by a period of less mindfulness only to be followed by yet another period of mindful behavior, ultimately leading to a wave-like pattern, which would also be observed between acquisition experience and acquisition performance. Indeed, the results we obtained lend support for our theoretical reasoning.

At the most basic level, our findings add to a more fine-grained understanding of how experience with rare organizational events of the same kind affects task

performance. In doing so, our study provides some additional insights helping to clarify when experience has a positive effect on task performance and when it does not (Argote and Miron-Spektor, 2011). Our results lend support for the assumption that the degree of mindfulness with which firms engage in knowledge transfer is a significant factor in task performance. In this sense, our study seems to corroborate Dane's (2011) recent theoretical reasoning according to which mindfulness is expected to contribute favorable to task performance in a dynamic task environment – such as corporate acquisitions. Thus, we contribute to a branch of the literature that holds that experience may not only be difficult to interpret, but that misinterpretations may have negative effects on learning outcomes, the consequence of which can be poor performance (Levinthal and March, 1993; March, 2010; Zollo and Reuer, 2010).

On a broader level, this study is related to, and indeed somewhat bridges, two research streams that have emphasized aspects of mindfulness or the lack thereof: that of organizational routines and of high reliability organizations (HRO). Organizational routines have been shown to be a central feature of firms, as they are one of the primary means by which they accomplish much of what they do (March and Simon, 1958; Nelson and Winter, 1982). Routines store organizational experience. Hence, they facilitate the rapid transfer of knowledge to new situations and, as such, are a major source of organizational competence (Cohen and Bacdayan, 1994). At the same time, organizational routines have often been seen as a source of inertia and inflexibility (Hannan and Freeman, 1984). Notwithstanding more recent research which sees organizational routines as more dynamic (Feldman, 2000; Romme *et al.*, 2010; Rerup and Feldman, 2011), their temporal orientation remains the past. Hence, as they draw on distinctions created in the past, organizational routines cannot be completely mindful, rather they reflect – to a large degree – Husserl's natural attitude toward experience.

Research on HRO has focussed on the mindfulness of organizations (Weick *et al.*, 1999). Because of the complex technologies on which they rely and the unforeseen ways, in which errors may be compounded, HROs such as nuclear power plants, nuclear aircraft carriers, and air traffic control systems are constantly at risk of failure which can be catastrophic. The managers of HROs must maintain a high degree of mindfulness, based on a phenomenological attitude to experience. They might want to do so by establishing a whole mindful culture in the organization as culture is deemed to have an important influence on individuals' mindful behavior (Weick and Sutcliffe, 2007; Veil, 2011). However, as Vogus and Welbourne (2003) have argued, HROs are often considered to be too far-removed from other kinds of organizations to be used fruitfully in mainstream organization theory. Nonetheless, we agree with Vogus and Welbourne (2003) in that we believe that findings in high-reliability contexts may also be relevant for other organizational settings. Accordingly, in this study, we acknowledge that the levels of mindfulness in “everyday organizations” are also subject to considerable variation. Thus, we are in line with scholars such as Rerup (2005) and Dane (2011), who claim that mindfulness varies over time. In fact, our results take us a step further in that they provide some indication of an alternating pattern of periods of mindfulness and periods of less mindful behavior, and indeed, that mindfulness in one period brings about less mindful behavior in another and vice versa. In other words, our results may be interpreted that the extent of mindfulness in performing a focal task will influence the extent of mindfulness in performing the subsequent task.

Finally, in order to obtain a deeper understanding of an organizational phenomenon, this study has taken an approach used in prior studies and applied individual level psychological theory to the organizational level (Fiegenbaum, 1990; Halebian and

Finkelstein 1999; Hodgkinson and Healey, 2008; Meschi and Métais 2013). In doing so, we also contribute to the evolving research stream on behavioral strategy. In their review, Powell *et al.* (2011) have identified three schools of thought upon which the behavioral strategy literature rests, which they label reductionist, pluralist, and contextualist. The contextualist school is grounded in phenomenological, constructivist, and critical philosophies of science as represented, for example, by Husserl (Powell *et al.* 2011, p. 1373). It highlights the pivotal role of sensemaking, misperception, enactment, and mindfulness pointing to the fact that subjective beliefs and cognitive frames matter more than objective facts. The results of our study may be interpreted in support of the contextualist school of thought, in particular Husserl's claim that the natural mode – in which everything that comes to one's awareness is processed through cognitive habitual filters – is the default mode of processing experience.

Implications for M&A research

Our study also has some implications for the M&A literature. In particular, our study contributes to the important stream of research arguing that the quality of learning may be more important than the quantity of experience and, as such, may hold great explanatory power for acquisition performance (Hayward, 2002). Our finding of a wave-like relationship between acquisition experience and acquisition performance differs from previous research, for example, Haleblian and Finkelstein (1999) or their follow-up study Finkelstein and Haleblian (2002), both of which point to a U-shaped relationship between acquisition experience and acquisition performance. They argue that at some point in time firms will have learned how to derive relevant inferences from prior experience and also how to identify differences across acquisitions. However, this would imply that from this specific point onwards, the traditional learning curve argument would hold.

Our findings contradict this implication. Rather, our finding – which also holds after controlling for industry similarity – lends support to the assumption that due to the “rareness” with which corporate acquisitions typically occur for firms, sustained learning is hardly achieved. Hence, it seems that firm behavior regarding the knowledge transfer in the context of corporate acquisitions is to a lesser degree driven by continuous and sustained learning, but to a larger degree by antecedent conditions, that is, prior task performance and their effect on mindfulness. This could also explain why research on serial acquirers such as Cisco, General Electric, or Microsoft has revealed that acquisition experience is beneficial for acquisition performance (Laamanen and Keil, 2008). In contrast to firms that acquire rather seldom, frequent acquisitions may enable serial acquirers to develop specific acquisition routines and acquisition capabilities, ensuring sustained learning. These routines and capabilities may refer in particular to acquisition integration skills. Within the integration phase the question of integrating cultures is of major importance (Schweiger and Very, 2003; Kavanagh and Ashkanasy, 2006; Stahl and Voigt, 2008). Thus, learning from serial acquirers how to integrate successfully may be an opportunity for infrequent acquirers (Ashkenas *et al.*, 1998).

Finally, our study contributes to the M&A literature by employing novel moderators on the relationship between acquisition experience and acquisition performance. In doing so, we have seized the call for more M&A research employing moderators beyond the “usual suspects” made, for example, by King *et al.* (2004) in their meta-analyses of post-acquisition performance.

Implications for practice

With more than 29,500 deals worth almost US\$ 1.5 trillion announced in the first half-year 2013 (Bureau van Dijk, 2013), M&A remain remarkably popular. Notwithstanding the popularity, much of the literature points out that all too often acquisitions fail (Datta *et al.*, 1992; King *et al.*, 2004). Admittedly, the reasons why acquisitions fail are manifold. However, the results obtained in this study lend support to the assumption that one such reason is the lack of mindfulness, with which a focal acquisition is approached. As such, our results may also be of interest for business practice. Firms must recognize that in the context of rare events quality of learning may be more important than the quantity of experience. In other words, having performed a (seemingly) similar task before is no guarantee that performing the task again will lead to higher task performance. Rather, appropriate measures have to be taken to increase organizational mindfulness to be able to manage the unexpected (Weick and Sutcliffe, 2007). One promising approach might be to implement specific HR practices as proposed by Vogus and Welbourne (2003). The authors propose that measures such as use of skilled temporary employees, positive employee relations, and an emphasis on training increase organizational mindfulness through three underlying mechanisms: reluctance to simplify interpretations, sensitivity to operations, and commitment to resilience. Thus, any firm in need of a high degree of mindfulness, for example because it infrequently performs acquisitions, may try to build a mindful culture and turn to such HR practices in order to enhance organizational mindfulness and, ultimately, task performance. Appropriate HR practices may not be enough to ensure a high level of organizational mindfulness. Therefore, firms may also systematically rely on available frameworks such as the Capability Maturity Model Integration (CMMI). As a tool that builds on systematic decision and analysis resolution processes, the CMMI offers the means to improve a firm's "ability to manage the development, acquisition and maintenance of products and services" (Dayan and Evans, 2006, p. 71). Though to date CMMI models are developed for disciplines such as systems engineering, software engineering, or supplier sourcing, it may be worthwhile to pursue the idea to adapt the basic reasoning of frameworks such as CMMI to rare organizational events. In doing so, firms may be enabled to distill exactly the pivotal knowledge and context factors that may drive or inhibit success when performing a rare event. Thus, it may help firms to foster mindfulness.

Limitations and suggestions for future research

No single study can embrace every aspect of an issue. We acknowledge here some limitations of ours. First, our reasoning is based on a premise shared by other researchers (Rerup, 2005; Dane, 2011), namely that mindfulness is an inherent human capacity that varies over time and between individuals. However, similar to other studies applying the concept of mindfulness to the organizational level, for example, Vogus and Welbourne (2003) we have to deal with the limitation that we do not directly measure or observe the degree of mindfulness – in our case, the degree of mindfulness with which a firm approached an acquisition. Though recent work on mindfulness has started to develop approaches to measure mindfulness, they typically rely on self-report questionnaires, structured interviews, or performance-based measures – an approach that considering our research design was not feasible. Second, the generalizability of our findings may be limited as our sample is made up of publicly owned large US manufacturing and mining firms. One might argue that our findings may not be unconditionally applicable to privately owned smaller firms, or to firms active in

other industries. In order to measure acquisition performance using an event-study approach, we had to rely on publicly owned firms. We also had to be sure that we could confidently rule out that the firms in our sample had prior acquisition experience, and hence had to rely on large firms which are covered in the FTC Large Merger Series. Third, though we recognize that our sample size is limited, the availability and quality of data were overriding considerations. Given that we theorized a wave-like relationship between acquisition experience and acquisition performance, we needed to have in our sample firms with multiple acquisitions within our time window. In the end our sample included 13 firms, and for each of them we derived a complete history of five consecutive large acquisitions.

Our line of inquiry suggests a number of other research directions. Future research might test our hypotheses using a sample of firms that have had experience with other kinds of rare organizational events, such as alliances or joint ventures, or with a greater number of experiences, which would allow for an empirical exploration of a wave-like relationship beyond the alternating relationship found in this study.

Also, future might engage in a longitudinal in-depth case study, comparable to the one done by Burgelman on Intel (see, e.g. Burgelman, 1983, 1991, 1994). In doing so, scholars may be able to accompany a firm over a longer time period, being present whenever the respective firm approaches a rare event and directly assess the degree of mindfulness, with which the rare event is approached.

Finally, an assessment of the costs of mindfulness would undoubtedly prove interesting. As Rerup (2005) and Dane (2011) have both pointed out, mindfulness requires an ongoing effort if it is to be sustained, and this entails costs. The in-the-moment orientation of mindfulness explicitly denies the reliance on past categories and distinctions, which are ways to save on information. However, it is likely that at some point there is equilibrium between the costs of mindfulness and the savings it can engender. Future research might find such a balance in the context of task performance.

Notes

1. We thank an anonymous reviewer for pointing to this important issue.
2. The reason for value premiums and low market-to-book values is debated. Some authors mention factors like diversification discounts or market inefficiencies as potential reasons (Shleifer and Vishny, 1997; Graham *et al.*, 2002; Dos Santos *et al.*, 2008). In this paper we follow the market efficiency hypothesis.

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