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ALL ASPIRATIONS ARE NOT CREATED EQUAL: THE DIFFERENTIAL EFFECTS OF HISTORICAL AND SOCIAL ASPIRATIONS ON ACQUISITION BEHAVIOR

ABSTRACT

Research on performance aspirations has tended to assume that historical and social aspirations work in parallel and influence strategic behavior in a similar manner. We posit that these two distinct modes of performance comparison in fact lead to *dissimilar* firm behavior. We also explore how *variability* in prior acquisition performance influences the relationship between aspiration levels and subsequent strategic behavior. We examine our questions in the context of mergers and acquisitions within the US commercial banking industry from 1988-2005. Consistent with our prediction, we find that firms' acquisition behavior varies significantly depending on whether historical or social comparisons are used. We also find that high variability in the previous acquisition performance of the firm intensifies the relationship between acquisition performance relative to aspirations and the probability of the firm making acquisitions *below* historical and social aspirations, but attenuates the relationship *above* such aspirations.

Keywords: aspiration levels; performance variability; mergers and acquisitions.

Research on performance feedback has grown substantially in recent years (e.g., Audia & Greve, 2006; Baum et al., 2005; Mishina et al., 2010). A cornerstone of the theory is a model in which firms set their aspiration levels to reflect organizational goals, which then serve as a benchmark for assessing observed performance (Cyert & March, 1963; Gavetti et al., 2012). These aspiration levels facilitate the interpretation of prior performance, which in turn influences the probability of organizational change by modifying managerial risk preferences and search behavior. Scholars have focused on two aspiration levels that emerge from different sources of performance feedback: *historical* (based on the firm's own performance history) and *social* (based on the performance of a reference group of firms), and generally posit that they trigger similar behavioral responses (e.g., Baum et al., 2005; Greve, 1998; Harris & Bromiley, 2007). Specifically, firms that fail to achieve aspiration levels—whether historical or social—engage in problemistic search which often leads to risky organizational change; those that exceed aspiration levels manifest reduced search activity and reinforced strategic persistence (Cyert & March, 1963; March & Shapira, 1987).

We take a novel perspective, positing that historical and social aspiration levels give rise to different managerial behaviors because the respective underlying benchmarks and processes are distinct and are interpreted differently by managers. Historical aspiration levels enable performance evaluation by comparing a firm's current and past performance, while social aspiration levels enable current performance to be

compared with that of other firms. Historical aspirations are accessible and pertinent because they are history-dependent and reflect a firm's capabilities and resources (Greve, 2003a: 42). Social aspiration levels allow for benchmarking (Fiegenbaum & Thomas, 1995) but are often ambiguous because, although it is relatively easy to observe performance outcomes, discursive information on other firms required to identify the underlying factors contributing to the observed outcomes is rarely available and often incomplete (Baum & Ingram, 2002). Despite these fundamental differences in their origins and encoded information, no previous research on aspiration levels has theorized and hypothesized differential effects of historical and social aspiration levels on firm behavior, a surprising omission given that many prior studies on aspiration have tested them separately and they have often yielded inconsistent empirical findings (Audia & Greve, 2006; Greve, 2003b; Shipilov, Li, & Greve, 2011). In seeking to fill the gap and to advance performance feedback theory, we posit that historical and social aspiration levels induce different interpretations as they arise from distinct sources of performance information and are filtered through dissimilar cognitive and organizational processes, and that they influence firm behavior and choices accordingly. To the best of our knowledge, ours is the first study to develop and test theories of why managers respond differently to historical and social aspiration levels.

Another dimension that has been overlooked in the organizational learning literature concerns the role of past performance variability in

performance interpretation (Denrell, 2005), which influences managers'
interpretations of current performance by modifying their perceptions of the
reliability of performance signals. Low variability—i.e., performance that
does not fluctuate wildly—makes it easier to interpret prior performance and
allows for more reliable predictions of future performance, whereas high
variability makes interpretation more challenging since managers are
uncertain whether to attribute the observed performance to firm capabilities
or external (and even random) factors. Thus performance variability is likely
to play a significant role in how managers understand their performance.
Although, performance variability has been frequently employed as a
measure of firm risk in prior studies (e.g., Bowman, 1980; Bromiley, 1991;
Fiegenbaum & Thomas, 1988), little work has examined its role on
managerial interpretations of performance feedback, a key focus of this
study.

We examine managerial performance interpretations in the context of
corporate acquisitions. Despite a poor track record in this domain, firms
nonetheless continue to pursue acquisitions as a strategic option (Kim,
Haleblian, & Finkelstein, 2011). Although prior acquisition performance is a
key modifier of acquisition behavior, the role of prior acquisition performance
in determining future acquisition behavior remains poorly understood. To
draw valid inferences from previous acquisition performance requires
meaningful evaluation of the related performance outcomes, but this can be
complicated as acquisitions are complex events that involve many

organizational and strategic considerations (Zollo & Singh, 2004). Indeed, managerial understanding of acquisition performance will be subject to multi-faceted interpretations according to the history of the firm and the context in which it operates. To guide future acquisitions, managers attend closely to the factors that contribute to acquisition success and failure (Haleblian, Kim, & Rajagopalan, 2006). Since acquisitions are discrete events that may be unambiguously observed and are considered important by stakeholders, they provide a fertile context in which to study performance feedback-based learning.

Our study makes three contributions to the existing literature. First, whereas empirical work on aspiration levels has overlooked the respective behavioral consequences of historical and social aspirations (e.g., Baum et al., 2005; Greve, 1998; Iyer & Miller, 2008), we identify differences in how managers interpret these measures of performance feedback, with major consequences for their subsequent strategic behavior. Second, despite the importance of performance variability in performance appraisal and organizational learning, its role in performance feedback-based learning has received little scholarly attention. We seek to expand understanding of performance feedback-based learning by investigating how the variability of a firm's past acquisition performance moderates the effects of performance feedback on acquisition behavior. Third, we advance research in corporate acquisitions by examining how different interpretations of prior acquisition

performance influence future acquisition behavior, thereby shedding light on the relationship between the two.

THEORY AND HYPOTHESES

Acquisition Performance Feedback and Subsequent Acquisition Behavior

Problemistic search, a key concept in the behavioral theory of the firm, has influenced many streams of management research, including organizational learning (e.g., Levitt & March, 1988), risk-taking (e.g, Bromiley, 1991), strategic change (e.g., Park, 2007), and innovation (Greve, 2003c). At the core of the theory is the aspiration level. For complex organizational actions—such as acquisitions—there are no universally-accepted evaluation criteria. Constrained by bounded rationality, managers cannot use all available information in performance evaluation; hence they simplify the process by setting aspiration levels that reflect organizational goals and serve as a benchmark: performance that exceeds aspiration levels is viewed as a success, that which falls below is less favorably regarded (Cyert & March, 1963).

When performance falls short of aspiration levels, firms engage in problemistic search and are more willing to make organizational changes that are deemed risky (March & Shapira, 1987; Wiseman & Bromiley, 1996). Hence, performance below aspiration levels acts as a spur to organizational change as it encourages the exploration of alternative actions; when it

exceeds aspirations there is no need to change what appears to be the "right" strategy. Persisting with prior strategies is considered more efficient than trying new, unproven alternatives since it allows firms to capitalize on earlier investments in the requisite skills and techniques (Audia, Locke, & Smith, 2000; March, 1991). Thus the probability of (risky) organizational change declines when performance is above aspiration levels. A sizable body of work has shown the link between strong performance and persistence with current strategy (Miller & Chen, 1994), just as poor performance has been found to prompt strategic changes, such as diversification (McDonald & Westphal, 2003), changes to product format (Greve, 1998), and market positioning (Park, 2007).

In the acquisition context, when current acquisition performance falls below the level aspired to, the firm's performance goals are not fulfilled; as the gap between the two widens so the tendency to regard acquisition strategy as suboptimal and poorly aligned with firm capabilities increases, prompting managers to engage in problemistic search for an alternative strategy. By contrast, when acquisition performance goes beyond aspirations, the belief that management got it "right" will be reinforced, encouraging them to favor the acquisition option in the future. In line with this logic, two prior studies have shown that firms modify their acquisition behavior in response to performance feedback. Iyer and Miller (2008) found that firms experiencing performance below aspirations are more likely to make acquisitions. Haleblian et al. (2006) found strong current acquisition

performance increases the likelihood of making a future acquisition, although their study did not use an aspiration level framework. Although the findings of these two studies may appear inconsistent—as the former found a negative relationship between performance and acquisition likelihood, while the latter found a positive one, they are not, in fact, inconsistent. Iyer and Miller (2008) study the effect of *overall* firm performance (return on assets) on acquisition likelihood, and they argue low firm performance will trigger a search for better business opportunities, which in turn results in changes in the corporate portfolio through increased acquisition activities. By contrast, Haleblian et al. (2006) examine *acquisition-specific* performance and posit that the low performance of a current acquisition will lead managers to search for a better strategic alternative, consequently decreasing acquisition activities. Thus, the findings of these two studies are theoretically-consistent. We adopt the approach used by Haleblian et al. (2006) and examine acquisition-specific performance rather than overall firm performance.

The focus on acquisition-specific performance offers an opportunity to contribute to theory on aspiration levels. Researchers tend to focus on the relationship between *overall firm performance* and firm behavior (e.g., Iyer & Miller, 2008; Miller & Chen, 2004; Mishina et al., 2010), notably how overall firm performance below aspirations triggers problemistic search and increases organizational change and risk-taking, which forms the foundation of much empirical work. However, overall firm performance measures may be too general and far-removed from the vicinity of the problem in which

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problemistic search occurs (Gavetti et al., 2012), hence our focus on the relationship between the performance of a *specific* action, i.e., acquisition, and the probability that it will be subsequently deployed (as opposed to the probability of broader organizational change), a linkage subject to considerably fewer confounding influences. This brings us closer to the actual causal mechanisms and organizational learning processes by which performance interpretation and managerial decisions are made. Building on these ideas, we propose the following baseline relationship between acquisition performance relative to aspiration levels and the probability of making a future acquisition:

Baseline proposition: There is a positive relationship between acquisition performance relative to aspiration levels and the probability of the firm making a subsequent acquisition.

We posit that the magnitude of this relationship will change according to whether performance is above or below the aspiration level, and that the pattern of results will differ depending on which aspiration level—historical or social—is used to evaluate acquisition performance. While there is significant evidence that the rate of organizational change increases when performance falls below this level and slows when it rises above it (Audia et al., 2000; Greve, 1998; Lant, Milliken, & Batra, 1992), whether and how historical versus social aspirational levels generate different influences on firm behavior remains unclear. The varying parameters model posits that decision makers shift their attention between these two forms of aspiration levels (Bromiley & Harris, 2014; Washburn & Bromiley, 2012), which suggests

these aspiration levels are associated with different underlying cognitive and organizational processes. Since the two are derived from distinct sources of performance feedback and are filtered through different cognitive and organizational processes, they may engender different interpretations, which in turn may induce different organizational responses. Moreover, empirical findings on their respective influences are not always aligned. Several studies have found more significant effects for historical aspiration levels than for social aspirations (e.g., Audia & Greve, 2006; Greve, 2003b; Shipilov et al., 2011) and vice versa (e.g., Harris & Bromiley, 2007). Supporting this view, Harris and Bromiley (2007: 362) suggested that firm responses to performance feedback may vary depending on the kind of reference point.

The Effects of Historical Aspirations on Acquisition Behavior

In the context of firm acquisitions, historical aspirations serve as a benchmark against which the performance of a new acquisition can be measured. The comparison of current performance with historical aspirations is a useful learning mechanism that allows managers to incorporate evolving realities into their evaluation, as well as to update existing assumptions with regard to their own effectiveness (Levinthal & March, 1981). Since historical aspiration levels are derived from past performance, they closely reflect the managerial capabilities and resources a firm brings to an acquisition—for example, target selection, price negotiation and due diligence—that may determine subsequent acquisition performance. All things being equal, it is reasonable to assume that acquirers with a strong performance track record

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are more capable, and that the historical aspiration level of an acquirer is a reasonable proxy for the capabilities and resources it can deploy in future acquisitions. Furthermore, historical performance is subject to greater scrutiny because managers have access to private knowledge that resides within the firm and they may use such knowledge to interpret historical performance and identify factors contributing to the performance outcomes experienced (Menon & Pfeffer, 2003). These factors make the historical aspiration level a relatively credible predictor of how well they *could* perform given their resources and capabilities (Greve, 2003a: 42).

These features of historical performance information affect the way managers evaluate performance above and below historical aspiration levels. When a recent acquisition performs above the historical level, they may attribute this to their acquisition capabilities and assume they are on track to becoming more capable acquirers. However, it also creates an interesting paradox: while an acquisition may present a major strategic opportunity for the acquiring firms, it also carries significant risk (Pablo, Sitkin, & Jemison, 1996). Indeed research suggests that acquisitions are more likely to destroy value rather than creating value for the acquirer (King et al., 2004). Since acquisition is a risky strategy, managers contemplating a future acquisition decision in light of strong acquisition performance must reconcile countervailing forces—namely *momentum* versus *caution*. On the one hand, performance that exceeds historical aspirations will encourage more frequent acquisitions by convincing them that they are on the right

track, thereby fostering a desire to keep the performance *momentum* going by pursuing further acquisition opportunities. On the other hand, if the prior acquisition has done well, performance expectations for future acquisitions will be raised, making them increasingly difficult to meet (or exceed), thereby underlining the need for *caution* as the risk of being unable to meet the level of expectation of stakeholders increase.

Given that the historical aspiration level is perceived as an indicator of acquisition capability, performance that far exceeds historical aspiration levels may be seen as an outcome that will be difficult to replicate in the future. Thus there is a heightened risk of being unable to maintain the desired level of performance as well as greater pressure to make subsequent acquisitions work. While managers are likely to persist in making acquisitions in light of strong performance, in response to heightened aspirations they will be more cautious, only pursuing selective targets that are likely to perform above the established benchmark. Managers will also conduct due diligence to ensure the transaction's efficiency and commit more time and resources to the post-acquisition integration of recently completed acquisitions before making their next move. These factors will lengthen the intervals between deals. In sum, when acquisition performance exceeds historical aspirations, the balance between momentum and caution will tilt in favor of the latter, creating a deterrent to subsequent deals and slowing future acquisition activity. This will dampen the positive relationship posited in our baseline proposition.

By contrast, an acquisition performance below historical aspiration levels suggests managers are unable to achieve what they could have been normally able to. A recent acquisition that performed below that level will result in a downward adjustment of the estimation of the firm's acquisition capability. However, the updated capability estimation will still be higher than the recent acquisition performance level alone indicates. This upward capability estimation may prompt managers to believe that the performance of their next acquisition will improve to the level that they perceive to be normal. Moreover, because poor acquisition performance will lower the acquirer's historical aspiration level, it will reduce the risk of failing to meet the adjusted aspiration level for subsequent acquisitions. Thus compared to when acquisition performance is above historical aspirations, managers will feel less compelled to exercise caution in making the next acquisition, and the balance between momentum and caution will tilt to momentum, thereby strengthening the positive relationship between acquisition performance relative to historical aspirations and the probability of making further acquisitions.

Taken together, we propose that the positive relationship between acquisition performance relative to historical aspiration levels and the probability of a subsequent acquisition will be weaker when acquisition performance exceeds historical aspiration levels than when it falls below. This logic leads to our first hypothesis:

Hypothesis 1: The positive relationship between acquisition performance relative to the historical aspiration level and the probability of making a subsequent acquisition is *weaker* when a firm's acquisition performance is *above* its historical aspiration level than when it is *below* its historical aspiration level.

Effects of Social Aspirations on Acquisition Behavior

Driven by the necessity of benchmarking, firms frequently set their own performance goals by observing the performance of a reference group (Fiegenbaum & Thomas, 1995). Other comparable firms taking on similar strategic actions become particularly useful reference points for managers to evaluate the effectiveness of their own strategies (Fiegenbaum, Hart, & Schendel, 1996), and hence their social aspiration levels. A performance above the level exhibited by members of the reference group is viewed as a success, whereas one which fails to attain the norm is regarded less favorably. Thus social aspiration levels help decision makers assess how well they *should* perform since stakeholders will expect the firm to perform at least on a par with other firms in the reference group. In line with this logic, recent work on aspirations implies that managers first focus on social aspirations as this constitutes the baseline performance level ("how well they should perform") before they attend to other performance benchmarks (Audia & Brion, 2007; Washburn & Bromiley, 2012).

While the social aspiration level is a useful performance benchmark, it is not always easy to interpret performance using social aspirations because learning from the experience of others—including the performance experienced by others—is inherently more difficult than learning from one's

own (Baum & Ingram, 2002). To interpret the performance of acquisitions made by other firms, managers not only need to know how well other firms performed, but also how other firms achieved the observed performance. Unfortunately, managers normally do not have access to the information required to accurately interpret other firms' performance as such information is often private knowledge available only to the insiders of the firms (Kim & Miner, 2007; Menon & Pfeffer, 2003). Reflecting these difficulties of learning from others, Baum and Ingram (2002) noted: "It is not surprising that knowledge does not transfer easily between organizations in the 'open market' as the difficulties in measuring and valuing knowledge are obvious." Hence interpreting performance data from acquisitions made by others is more difficult than understanding the performance pattern of one's own acquisitions.

When acquisition performance is above the social aspiration level, managers should first seek to understand why their firm performed better than others to inform their future acquisition behavior. If they conclude that they are a more capable acquirer, they are likely to pursue more acquisitions to take advantage of their superior acquisition capability. If they believe their success was an artifact of exogenous factors or a random luck, acquisitions will be no more attractive than other strategic options. However, the ambiguity and paucity of information on other firms present several challenges to managers trying to make sense of their success using social comparison. To credit high performance to their superior capabilities, they

must compare them with those of other acquirers. However, heterogeneity among firms in the reference group is often unobserved or inaccurately assessed, and a meaningful reference group may not necessarily exist (Beckman & Haunschild, 2002; Denrell, Arvidsson, & Zander, 2004; McEvily & Zaheer, 1999), making such comparisons extremely challenging. In the absence of comprehensive information on the firm's capabilities vis à vis its peers, relative capabilities need to be construed since they cannot be accurately assessed and compared. Moreover, managers may not be aware of the potential sources of biases and error in the performance they observe (Bazerman & Moore, 2008). For example, they may fail to take into account the effects of hard-to-observe factors such as tacit knowledge or intangible assets in interpreting the performance of others. Also, managers tend to focus only on assessments of other firms' recent performance due to the difficulty of observing the longitudinal pattern of others' performance, which may not only be a more accurate gauge but also better reflect underlying contributory factors. Hence the social aspiration level is an *ambiguous* performance benchmark.

Due to the high ambiguity, social comparisons offer little information about how current acquisition performance matches their capabilities, or how their capabilities compare to those of other firms being benchmarked. In the absence of a clear causal linkage between capabilities and performance, managers are more likely to focus on the outcomes themselves in making sense of the performance rather than the processes or antecedents that led

to those outcomes (Conell & Cohn, 1995; Porac, Wade, & Pollock, 1999). External information tends to be taken *at face value* because it is scarce and hard to interpret (Menon & Pfeffer, 2003). As a result, when managers vicariously learn from outcomes, they rarely consider whether they have the ability to replicate the observed outcomes, and they have a natural tendency to underestimate how difficult it is to achieve the observed outcomes. Further, in assessing relative competencies, individuals tend to ignore competitors' competencies (Eiser, Pahl, & Prins, 2001; Epley & Dunning, 2000; Klar & Giladi, 1999). Research on information processing has similarly proposed that individuals are less attentive to external information cues, including the efforts and abilities of relevant others, which leads to the overestimation of their own relative efforts and abilities (Kahneman & Lovallo, 1993; Powell, Lovallo, & Caringal, 2006). There is also significant evidence that ambiguous performance assessment situations amplify the tendency to overestimate one's own capabilities (e.g., Dunning, Meyerowitz, & Holzberg, 1989; Van Yperen, 1992).

Acquisition performance above social aspirations sends a signal to managers that they are performing better than what they *should*. Given the ambiguity associated with social comparisons, managers are more likely to credit the strong performance to their own capabilities and less likely to doubt their ability to perform at the same level on future acquisitions. Performance that significantly exceeds their social aspiration level will further validate their belief in their superiority unlike performance that far

exceeds their historical aspiration level. Consequently, when acquisition performance is above the social aspiration level, the balance between the two countervailing forces—momentum and caution—will tilt towards momentum, amplifying the positive relationship between acquisition performance relative to social aspirations and the probability of making a subsequent acquisition.

By contrast, failing to meet the social aspiration level will substantially increase pressure from stakeholders because they are not performing as well as they *should*. Managers are expected to maintain a performance level on a par with competitors. Thus a performance below social aspirations will increase the pressure for managers to perform better than the competition in subsequent acquisitions as stakeholders may not tolerate another incident of below-average performance. Additionally, unlike a performance above social aspirations, it is unlikely to instill overconfidence or overestimation of abilities in managers.

Further, the ambiguity associated with performance assessment using social aspirations often masks the causes of the poor performance of the current acquisition, making it difficult for managers to identify ways to improve performance in the future. Strong pressure to improve performance, in combination with the ambiguous nature of social comparison, will increase uncertainty about the prospect of improving performance in the subsequent acquisition, which in turn will prompt managers to exercise caution in undertaking a risky strategic move such as acquisition. Indeed, prior work on

risk-taking has shown that individuals become risk-averse in situations in which the cause-effect relationship is unclear or there is a high degree of uncertainty (March & Shapira, 1987; Tversky & Kahneman, 1974). Thus compared to when acquisition performance is above social aspirations, managers will be more cautious about making the next acquisition when acquisition performance is below social aspirations, tilting the balance between momentum and caution toward caution. These arguments lead to the following hypothesis:

Hypothesis 2: The positive relationship between acquisition performance relative to the social aspiration level and the probability of making a subsequent acquisition is *stronger* when a firm's acquisition performance is *above* its social aspiration level than when it is *below* its social aspiration level.

Moderating Effects of Acquisition Performance Variability

While interpreting the behavioral implications of aspiration levels is a core idea in performance feedback research, without taking into consideration the stability of past performance such predictions are necessarily constrained. For example, although acquisition performance that far exceeds a firm's aspiration level will be seen as a success, it may be an unreliable indicator that the firm is a capable acquirer if it has experienced high performance variability in past acquisitions. Thus, without taking into account past performance variability one cannot accurately assess whether or not a firm's current performance is an accurate reflection of its capabilities or whether it is sustainable in the future (Denrell, 2005). To

understand how managers interpret performance relative to aspiration levels the role of prior performance variability must be considered.

As performance variability increases, the *less reliable* the performance signal becomes. Given high variability, managers will have difficulty assessing whether a strong acquisition performance can be reliably replicated in future acquisitions (or, conversely, whether a poor acquisition performance will recur in future acquisitions). Thus high performance variability makes a firm's prior performance history an unreliable indicator at best, reducing its informational value for predicting how well it will perform in the future. The unreliability associated with high performance variability makes decision makers less confident in their performance interpretation. We posit that the way in which managers interpret current performance relative to aspirations depends on the variability in their prior acquisition performance.

Consider what acquisition performance above aspiration levels actually means when performance variability is high. Managers in such a situation may be less certain about the sustainability of superior acquisition performance: Was it due to compelling strategic capabilities and therefore sustainable? Or was it a "false positive" and therefore unsustainable? Confronted with high performance variability, they may have difficulty believing they have suddenly mastered the complex set of skills necessary for *consistently* strong acquisition performance, and may well wonder whether positive performance is sustainable in future acquisitions (Denrell et

al., 2004). Thus high performance variability lowers their confidence that they can reliably replicate the same level of performance in future acquisitions. Held in check by the realization that performance may not be sustainable given their track record, they will be more cautious about making future acquisitions and may reduce the pace at which future acquisitions are made.

By contrast, low acquisition performance variability suggests that a subsequent acquisition will not deviate from the strong performance of the current acquisition, and therefore managers will be less susceptible to doubting their ability to maintain strong performance in future acquisitions (since it implies higher reliability in performance assessment). It will validate their belief that they are developing the skills and capabilities to be more effective acquirers, thereby encouraging them to make further acquisitions.

While high performance variability attenuates the relationship between performance and acquisition persistence above aspirations, it will intensify the relationship below aspirations. Managers—like any other individuals—tend to see themselves in a positive light, especially in performance assessment situations (Pfeffer et al., 1998). This tendency, known as "self-enhancement motives" in social psychology, refers to the individual's need to maintain a positive self-image (Fiske, 2004). Thus, managers favor a performance indicator that allows them to view the firm in a more positive light, while disregarding more negative evaluations (Audia & Brion, 2007). In a recent theory paper, Jordan and Audia (2012) posit that self-enhancement

is more strongly manifested when individuals experience performance below aspirations because there is a much greater need for self-enhancement in poor performance situations. Hence, if recent performance falls below aspirations, managers with high performance variability will regard it less as an indicator of true ability than of random noise—or as a 'false negative' as they will favor the upper, more positive, bound of their performance variability as an indicator of their capability. As such, when firms with high acquisition performance variability achieve low performance on a current acquisition, they will be inclined to believe that they can achieve higher performance with a subsequent acquisition. Hence, compared to firms with low performance variability, they are more likely to persist in making acquisitions when performance falls below aspiration levels, as they expect future acquisition performance to improve.

However, low performance variability may convey a different signal to firms experiencing performance below aspiration levels. A performance below aspirations will lower their capability estimation; firms with low performance variability are more likely to view the adjusted (lowered) capability estimation as a credible indicator of future acquisition performance. Low variability signifies that the firm has little chance to improve its performance dramatically in its next acquisition, since low performance variability implies that acquisition capabilities are fixed. Since they perceive a greater risk that a subsequent acquisition will suffer from

poor performance, they will be less motivated to make future acquisitions than the firms with high performance variability.

In sum, high performance variability sends a mixed signal: When a firm performs above aspirations, managers are less convinced they can replicate the same level of performance in the future[1]; whereas when a firm performs below aspirations, they convince themselves that performance can improve in the future. By contrast, low performance variability is equated with a stable (or fixed) ability, increasing their confidence that a firm's performance above aspirations can be replicated in subsequent acquisitions, while casting doubt on the possibility that a firm that performs below aspirations can dramatically improve performance in future acquisitions. Thus we predict differential moderating effects of performance variability above and below aspiration levels, but we do not predict differential moderating effects for historical and social aspiration levels because there is no theoretical reason that suggests performance variability will influence the interpretation of past performance differently when different types of aspiration levels are used. These arguments lead to the following set of hypotheses:

Hypothesis 3a: When a firm's acquisition performance is *below* its aspiration level, the positive relationship between acquisition performance relative to the aspiration level and the probability of making a subsequent acquisition is *stronger* for the firms with high variability in acquisition performance than for those with low variability in acquisition performance.

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1 Acquisition performance above aspirations will be viewed as success by any firm, and managers of a firm that experienced such performance are likely to attribute their success to their superior capabilities. This attribution process will be in place for both high and low performance variability firms. We are proposing here that high performance variability will "weaken" such attribution when performance is above aspiration while low performance variability will "strengthen" it.

Hypothesis 3b: When a firm's acquisition performance is *above* its aspiration level, the positive relationship between acquisition performance relative to the aspiration level and the probability of making a subsequent acquisition is *weaker* for the firms with high variability in acquisition performance than for those with low variability in acquisition performance.

METHOD

Sample and Data

We tested our hypotheses using data drawn from the U.S. commercial banking institutions during the 18-year period between 1988 and 2005. The initial sample included all horizontal acquisitions made by all publicly traded commercial banking institutions, including banks, thrifts (i.e., savings and loan associations and savings banks), and bank holding companies. The final sample tracked 3,010 acquisitions made by 642 publicly-traded banks.[2] We transformed these acquisition data into event history data format using annual financial and organizational data, which resulted in 8,799 yearly spells. When a bank made an acquisition, it enters the sample and becomes at risk of making a subsequent acquisition. Among the 642 banks included in the sample, 220 banks either exited the sample due to closure (failure or acquisition) or were right-censored without making another acquisition until the end of the study period.

One empirical challenge in our study is to measure acquisition performance relative to the historical aspiration level and the variability in

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2 An earlier study by Haleblian et al. (2006) also used the acquisition data from U.S. commercial banking industry during the period between 1988 and 2001, which included 2,523 acquisitions made by 579 banks. The sample used in this study includes four more years of data (2002-2005), and it was not built on the sample used in the prior study; instead we built the sample from scratch by collecting and reconstructing all the data.

acquisition performance. Because calculating these variables requires two or more acquisitions, we cannot construct them unless a bank made at least two acquisitions during the study period. A simple solution is to drop the banks that made only one acquisition from the sample, but this could introduce a sampling bias. A better analytic approach is to employ Heckman's two-stage sample selection model (Heckman, 1979). Unfortunately, this technique is not suitable for our sample. The purpose of the first stage of Heckman's selection model is to generate the inverse Mills ratios that control for the likelihood that the banks in the full sample make a second acquisition. However, Heckman's selection model does not distinguish the second acquisition from all other subsequent acquisitions (the third acquisition and beyond); instead it calculates the inverse Mills ratios as if all the acquisitions in the data were the second one. Because acquisitions are repeatable events and many banks in our sample made more than two acquisitions, this procedure will generate inaccurate, or even biased, inverse Mills ratios. Thus they are inaccurate and may not effectively control for the potential sampling bias.

Hence we adopted an alternative approach. If banks have not made any acquisition in the past, their historical aspiration level will be neither positive nor negative. It is reasonable, then, to assume that these banks will have a *neutral*, or *zero*, historical aspiration level when they do not have prior performance records. Hence, we set the historical aspiration of the banks in the sample to zero when they enter the dataset. Similarly, we set

the variability in acquisition performance to zero when the banks have no

prior acquisition records. This approach not only helps us avoid the potential

sampling bias issue but also allows us to utilize all the available data. Thus

we present the results obtained from the models based on this approach. To

check the robustness of our results, we also tested our hypotheses using

Heckman's selection model and obtained consistent results.[3]

The data on acquisitions were obtained from SNL Financial

Corporation, a database company that maintains comprehensive M&A data

on U.S. financial service firms. Stock market data used to calculate

acquisition performance were collected from the Center for Research in

Securities Pricing. Firm level financial and demographic data were drawn

from the banking module of the SNL database and the regulatory databases

from the Federal Reserve Board, the Office of Comptroller of the Currency,

and the Federal Deposit Insurance Corporation.

The U.S. commercial banking industry is an ideal context in which to

investigate our research questions. The industry is populated with relatively

homogeneous firms that share similar organizational and operational

characteristics, which implicitly controls for unobserved firm-level factors

contributing to acquisition behavior that may be present in more

heterogeneous populations. More importantly, the vast majority of targets

acquired by banks during the study period were other commercial banking

institutions due to the regulation that prohibits banks from acquiring non-

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3 For the reason discussed earlier, the inverse Mills ratios obtained from the first stage of the selection model are potentially biased; hence the results should be interpreted with caution.

financial institutions. Our research questions require us to identify patterns of performance of acquisitions in the sample. Because acquisitions in different industries may result in systematically different performance levels and performance expectations, tracking the performance of prior acquisitions with targets from multiple industries makes it difficult to build empirical models that are consistent with our theories by introducing a significant level of complexity into the interpretation of prior acquisition performance. For example, investors' expectations of returns from an acquisition in a high-technology industry (e.g., biotechnology) are likely to be different from those they would expect from a more traditional industry (e.g., retail) because of the substantial differences in their respective motivations for making acquisitions, the structure of the industry, and the nature of competition. Thus in order to test our research questions, it is best to study only the horizontal acquisitions in which targets are all from the same industry. However, it is possible that a firm's aspiration may be influenced by prior acquisitions in other industries. Thus by studying only horizontal acquisitions, we run a risk of underestimating the influence of acquisitions in other industries. However, this risk is practically non-existent in the banking industry because the vast majority of the acquisitions in this industry are horizontal acquisitions (Kim & Finkelstein, 2009).

In addition, the acquisition outlook of the U.S. commercial banks changed dramatically in the late 1980s due to a series of regulatory changes implemented during the period such as the *Competitive Equality Banking Act*

of 1987, which virtually removed regulatory restrictions on interstate bank acquisitions. This discontinuity in the acquisition environment in the U.S. banking industry led to substantial changes in acquisition strategies of banks. This event is especially helpful for the design of our study because it reduces (and even eliminates) potential biases that may arise from studying only a partial acquisition history of the banks in our sample.

Dependent Variable

The dependent variable of this study is the hazard rate of a firm in the sample making a subsequent acquisition following the focal acquisition. The hazard rate of making an acquisition is defined as:

$$r(t) = \lim_{t' \to 0} \left[\frac{Pr\left(t, \frac{t'}{t}\right) ¿}{t'} \right], ¿$$

where Pr($t, t'/t$) is the probability of a bank in the sample making an acquisition in the time period, t, t'.

The dependent variable in event history analysis has two parts. The first part is the event indicator that specifies whether a bank in the sample made an acquisition. The event indicator was coded 1 if a bank made an acquisition during a given spell and 0 otherwise. Event history analysis also requires a measure of time at risk of the event (acquisitions) because it takes into account not only whether a bank in the sample made an acquisition but also the time the bank takes to make the acquisition (frequently called the duration). Our data were transformed into yearly spells to incorporate the duration information.

Independent and Moderating Variables

Acquisition performance: Acquirer market returns. We measure

acquisition performance based on the stock market response using the

cumulative abnormal return (CAR). Although the CAR is the most frequently

used analytic approach for measuring acquisition performance in prior

research in strategy (e.g., Capron & Pistre, 2002; Hayward, 2002) and

finance (e.g., Kaplan & Weisbach, 1992; Mitchell & Lehn, 1990), it is a

measure of expected rather than realized performance gains (Zollo & Meier,

2008). We subscribe to the view that the CAR is not an ideal measure of

acquisition performance if the construct is used to capture the actual value

created by an acquisition. However, we are not interested in assessing post-

acquisition performance; instead we seek to explore how managers interpret

and respond to performance feedback from an acquisition. Thus our

acquisition performance measure should signify a crucial acquisition

outcome that managers pay attention to and take into consideration when

making acquisition decisions, but it does not need to capture realized gains

(or losses) of an acquisition. We call this variable *Acquirer Market Returns* to

accurately reflect the construct it captures.[4]

The abnormal return on a security of a firm represents the part of the

return on the security that is unanticipated by an economic model of

expected returns for the same security. The CAR is the sum of daily

abnormal returns for a security over a period that indicates the persistence

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4 It is more accurate to call this variable *Acquirer Announcement Market Returns*, but we call
it *Acquirer Market Returns* for simplicity.

of the impact of the event during that period. Specifically, we assessed

returns of the security of a bank in our sample against the return of the

market portfolio:

$$CAR_i(T_1, T_2) = \sum_{t=T_1}^{T_2} \left[R_{it} - (\alpha_i + \beta_i R_{mt}) \right],$$

> where R_{it} = the return on stock i for day t, R_{mt} = the return on the
> market portfolio for day t; α_i = a constant, β_i = beta of stock i,
> and T_1 and T_2 are the lower and upper limits of the event window,
> respectively.

We computed the CAR from one trading days before to one trading

days after the announcement of an acquisition (-1, +1), an oft-used event

window in the acquisition literature (Rhoades, 1994). We then tested the

sensitivity of the results by estimating the models using other frequently

used event windows [i.e., (-3, 3), (-5, 5)] and found consistent results. We

use a short event window for two reasons: (1) the largest stock price

movement in response to an acquisition announcement usually observed

during the first day after the announcement; and (2) managers who are

boundedly rational may focus on the most dramatic stock price change

rather than tracking the stock price change over a longer time frame.

Two considerations make the CAR an appropriate measure for this

study. First, the stock market reaction to an acquisition is often the primary

basis for evaluating the managers involved in a deal because the outcomes

of an acquisition can only be observed after considerable time has elapsed

(Rhoades, 1994). Because managers are often rewarded (or punished) based

on changes in the stock value (Hall & Liebman, 1998; Warner, Watts, &

Wruck, 1988), how the market responds to prior acquisitions—whether or not such responses accurately reflect the value of the acquisition—is important for their career and compensation, and is likely to influence their future acquisition decisions. To assess whether managers pay attention to the stock market reaction, we conducted unstructured interviews with two managers with extensive acquisition experience and two acquisition specialists. The anecdotal evidence obtained from these interviews supported the notion that managers consider stock market reaction to be an important aspect of acquisition performance and attend to this information when they make acquisition decisions. A quote from an interviewee indicates that managers may engage in an in-depth analysis of their stock price changes after an acquisition: "*After each acquisition, we undertake a comprehensive financial review that includes an analysis of the gains and losses on our firm value. The report often becomes quite academic, and we look into many different ways to make sense of our stock price changes.*" Another quote underscores the importance of stock market reaction in making acquisition decisions: "*They [investment bankers] keep an eye on our stock price after we announce a deal. We once withdrew a bid because our stock didn't fare well.*"

Second, short-term changes in stock valuation are easy to attribute to the focal acquisition. Investors may eventually revise their initial estimates of the impact of the acquisition; the acquirer may also keep making changes in strategy (both related to and unrelated to the acquisition); and its operating

environment may continue to evolve. These factors make it increasingly difficult for the acquirer to keep track of the causes of changes in financial figures and to attribute those changes to the acquisition. Thus short-term changes in the stock value become an attractive measure that boundedly rational managers use to make sense of the performance of an acquisition.

In sum, market-based feedback (i.e., stock price) is constantly updated and it is considered significant by both inside managers and external observers (Zajac & Westphal, 2004). This is consistent with the behavioral theory of the firm, since we posit that managers make acquisition decisions based only on available data and do not assume long-term optimality of their decisions.(Cyert & March, 1963). Although from prior research and much anecdotal evidence a general consensus has emerged that managers heed the changes in the value of their stock (Davis, 2009), there is still a debate about whether managers actually use CARs to evaluate the performance of their actions. Some researchers have found supporting evidence that managers use CARs to evaluate their strategy and change behavior (e.g., Kau, Linck, & Rubin, 2008; Luo, 2005), others did not reach the same conclusion (e.g., Jennings & Mazzeo, 1991). Therefore, the key question is whether managers calculate and use CARs rather than simply looking at the change in the stock price. Since this is largely an empirical question, we estimated models using alternative acquisition performance variables based on the percentage changes in the stock price one day before and after acquisition announcement (i.e., [Stock Price$_{t+1}$ – Stock Price$_{t-1}$]/Stock Price$_{t-1}$)

to check the robustness of our findings. We obtained consistent results from the models based on this alternative specification of acquisition performance.

Historical aspiration level. In previous work on aspiration levels, historical aspiration levels are generally measured by an exponentially weighted moving average of a firm's performance history (Levinthal & March, 1981). We similarly measured historical aspiration levels by taking an exponentially weighted moving average of the CARs of prior acquisitions:

$$Historical\ Aspiration_{i,t} = \alpha * Acquirer\ Market\ Returns_{i,mr} + (1-\alpha) * Historical\ Aspiration_{i,t-1},$$

> where $Historical\ Aspiration_{i,t}$ is the historical aspiration level of bank i at time t; $Acquirer\ Market\ Returns_{i,mr}$ is the acquirer market returns of the most recent acquisition made by bank i prior to t; $Historical\ Aspiration_{i,t-1}$ is the historical aspiration level of bank i before making the most recent acquisition; and α is the weight assigned to the most recent aspiration level and is set to 0.3.

This equation describes an anchoring and adjustment process in which the acquirer market returns of the focal acquisition updates the last period's aspiration level that is set by the acquirer market returns of all the acquisitions that a bank made prior to the focal acquisition. When we estimated models with different values of the weighting parameter, α, a value of 0.3 provided the best model fit.

Testing Hypothesis 1 requires a measure of acquirer market returns relative to historical aspiration levels. We specified relative acquirer market returns using a spline function, which allows the variable coefficient to

change at a predetermined point (Marsh & Cormier, 2002). Specifically, we split the acquirer market returns into two variables: (1) *Acquirer Market Returns below Historical Aspiration and (2) Acquirer Market Returns above Historical Aspiration*. *Acquirer Market Returns below Historical Aspiration* is set to 0 when the acquirer market returns of the focal acquisition is above the historical aspiration level and equals the difference between the acquirer market returns of the focal acquisition and the historical aspiration level when the acquirer market returns of the focal acquisition is below the historical aspiration level. Similarly, *Acquirer Market Returns above Historical Aspiration* is set to 0 when the acquirer market returns of the focal acquisition is below the historical aspiration level and is equal to the difference between the acquirer market returns of the focal acquisition and the historical aspiration level when the acquirer market returns of the focal is above the historical aspiration level. As discussed earlier, when a bank does not have a prior acquisition record (i.e., when banks enter the sample by making their first acquisition), we set their historical aspiration level to zero.

Social aspiration level. Because commercial banks generally compete with others that are geographically close, they are more likely to set their performance expectations on the basis of the performance outcomes of acquisitions made by others in the same geographic market in which their primary operation takes place or those proximate to their primary market. We used the states to meaningfully differentiate geographic boundaries that managers attend to in their decision-making. States are a

natural candidate for measuring the boundary of social comparison in the banking industry since it remains very much a 'local' industry in which the majority of banks still operate in a single or a few neighboring states except for a handful of mega-banks. Even those that operate in multiple states tend to have a single core state market. Constrained by limited cognitive capacity, bank managers are likely to rely on the information from the most important market when they set their social aspiration levels (Lant & Baum, 1995). Thus we identified the state that represents the most important market for the focal bank and used the state as the boundary of social comparison.[5] We determined the importance of a state for a bank using the amount of deposits that the bank has in the state; specifically, a state is considered to be the core market for a bank if the bank derives the largest portion of its deposits from the state.

Thus we measured the social aspiration level by the average acquirer market returns of all acquisitions made by all other banks in the state in which the focal bank derives the largest amount of deposits during the year *prior* to the focal acquisition. To test Hypothesis 2, we created two variables of acquirer market returns relative to the social aspiration level using the same method used to create the relative performance measures for the historical aspiration level: (1) *Acquirer Market Returns below Social Aspiration* and (2) *Acquirer Market Returns above Social Aspiration*.

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5 To test the sensitivity of our geographic grouping, we also estimated models using an alternative measure of the social aspiration level that is based on the twelve Federal Reserve Districts, and obtained consistent results.

Variability in acquirer market returns. This variable captures the degree to which the acquirer market returns of a bank's prior acquisitions varies. *Acquirer Market Returns Variability* was measured by the standard deviation of the acquirer market returns of all the acquisitions that a bank made prior to the focal acquisition since 1988. As noted, the study period commenced in 1988, corresponding to a major deregulation in the banking industry. This resulted in dramatic changes in the acquisition practices and strategies of banks and made their acquisition experience prior to these changes—including interpretations of past acquisition performance—much less valuable (Rhodes, 2000). This variable was measured as of 1988 to reflect this underlying change in the banking industry.[6] As for the historical aspiration level, we set this variable to zero when a bank does not have any prior acquisition record.[7]

Control Variables

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6 We also explored an alternative variable that was measured using all the acquisitions since 1978, the first year in which comprehensive data on bank acquisitions became available. This variable provided consistent results.

7 By setting *Acquirer Market Returns Variability* to zero for banks with no prior acquisitions, we are making an implicit assumption that such banks are more certain about their acquisition capabilities. This is not consistent with the notion that inexperienced acquirers may be more uncertain about their acquisition capabilities. We performed two sensitivity analyses to see if this assumption significantly affects our results. First, we estimated the models using a subsample of banks that made at least two acquisitions. This subsample allows us to calculate *Acquirer Market Returns Variability* without making this assumption. Second, we estimated the models using an alternative *Acquirer Market Returns Variability* variable based on an assumption that a bank with no prior acquisitions will set its *Acquirer Market Returns Variability* based on the industry average. Specifically, we use the average acquirer market returns of all the acquisitions made in the year in which the focal acquisition was made instead of zero when a bank does not have any prior acquisition record. These sensitivity analyses provided highly consistent results.

Based on a comprehensive review of the existing research on acquisitions, we included a set of control variables found to have effects upon acquisition likelihood.

Acquirer-level controls. Prior studies have shown that acquisition decisions are influenced by the characteristics of the acquirer (King et al., 2004). Larger firms tend to be more acquisitive because they generally have more resources available for acquisitions and are more growth-oriented than smaller firms. They also tend to persist in their strategic actions because they are subject to stronger inertial forces. Hence, *Acquirer Size,* measured as the natural logarithm of an acquirer's total loans, was included to control for the effects of firm size. A high level of slack resources may promote acquisition activity because it provides the financial resources required to make an acquisition and encourages managers to take risky strategic actions such as acquisitions (March, 1981). Thus we controlled for *Acquirer Slack Resources,* measured as the ratio of an acquirer's core deposits to the total assets of the acquirer.[8] Firms with strong performance are more likely to pursue an acquisition because strong performance permits them to focus on growth and they can afford to finance costly acquisitions. Accordingly, *Acquirer Firm Performance*, which was measured using the acquirer's return on equity, was included. Finally, because banks' ability to efficiently procure financial resources can increase deal-making, we controlled for *Acquirer Cost*

8 Core deposit is the amount of a bank's deposits that is expected to stay on the bank's balance sheet. Core deposit is a good indicator of a bank's potential cash outflow and level of liquid assets, and is considered to be a more accurate indicator of slack resources than cash for commercial banks. We also used liquid assets to measure this variable and found consistent results.

of Fund, which we measured as total interest expense divided by interest-bearing liabilities. A low *Acquirer Cost of Fund* indicates that an acquirer pays low interest on its borrowing and could finance an acquisition at a low cost.

Acquisition-level controls. The characteristics of the focal acquisition itself may influence a firm's future acquisition decisions. First, the relative sizes of the target and the acquirer can affect the likelihood of future acquisitions (Amburgey & Miner, 1992); thus we included *Relative Acquisition Size* as the ratio of target deposits to acquirer deposits. Second, the type of consideration used to finance an acquisition implicitly indicates how managers assess the value of their stock; if managers believe that the stock is overvalued relative to the market, they may be driven to make acquisitions to take advantage of the high stock price. Thus we included *Stock Consideration*, which was coded 1 if an acquirer used stock to finance the focal deal and 0 otherwise. Acquiring and integrating a target that is equal or larger in size exhausts the acquirer's financial and managerial resources and may become a source of organizational conflicts, consequently putting a brake on future acquisition activities. We included *Merger of Equals* to control for this potential effect (coded 1 if the focal acquisition is a merger of equals and 0 otherwise). We also controlled for *Lock-up Agreement*—a legal contract that prohibits insiders from selling their stock for a specified period of time after an acquisition—since insiders who cannot profit from their stock may try to find a way to utilize their locked-up equity by making more acquisitions. This variable is coded 1 if the focal

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acquisition deal had a lock-up agreement clause in place and 0 otherwise. Because our sample included only horizontal acquisitions within one industry, there is no need to control for the relatedness between the merging firms.

Industry-level controls. The overall acquisition trend and climate at the industry level may affect an acquirer's subsequent acquisition behavior (Bergh, 1997). For instance, a large number of acquisitions within an industry —or 'acquisition wave'—may trigger herd behavior. We include two control variables to control for industry-level acquisition activity: (1) the total number (*Regional Acquisition Density*) and the total dollar value (*Regional Total Acquisition Value*) of all acquisitions completed each year in the Federal Reserve district in which an acquirer is located. Additionally, a large number of banks increase not only the level of industry competition but also the number of potential takeover targets; both of these factors will promote acquisition activities as banks search for ways to reduce competition. Thus we included *Number of Banks*, measured as the number of banks in the state in which the focal bank's core market is located. The acquisition activity in a market will be reduced if the market is highly concentrated while the opposite is true if the market is highly fragmented. To control for this potential effect, we added *Bank Concentration*, which was measured as the Herfindahl index of the market share of the banks in the state (the amount of

a bank's deposits as a percentage of the amount of the total deposits of all the banks in the state).[9]

Acquirer prior acquisition record. Research has found that acquisition experience influences future acquisition behavior (Amburgey & Miner, 1992); hence we controlled for *Prior Acquisition Experience*, measured as the total number of acquisitions made by a bank up to the year prior to the focal acquisition since 1988. Acquirers with a strong acquisition performance history will gain confidence in their talent for making successful acquisitions, encouraging them to make further acquisitions. Thus we controlled for a bank's average acquirer market returns on its prior acquisitions by including *Prior Average Acquirer Market Returns*, operationalized as the average acquirer market returns of all prior acquisitions made by the bank. Banks that have been consistently acquisitive may be more prone to make another acquisition in the near future. We control for this potential effect by including *Acquisition Speed*, which was measured as the average number of acquisitions undertaken each year by the focal bank.

Indicator variables for modeling. As discussed in the sample section, we set the historical aspiration level and acquirer market returns variability to zero for the first acquisition that banks in our sample made

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9 We measure the acquisition trend variables (*Regional Acquisition Density* and *Regional Total Acquisition Value*) at the Federal Reserve district level instead of at the state-level because the states may be too narrow a geographic boundary to capture the overall acquisition trend and climate. However, we measured the industry environment variables at the state level because the state is a better geographic boundary to identify the banking conditions, especially competition. We estimated models using alternative control variables that were measured all at the state-level and obtained consistent results.

because they have no prior acquisition record when they made their first acquisition. To control for the possibility that these observations systematically influence our model estimation, we included *First Acquisition Indictor*, which is coded 1 for the observations based on the first acquisition record and 0 otherwise. There are occasions when the acquirer market returns of the focal acquisition are not consistently above or below both aspiration levels. To control for the effect of acquirer market returns above one aspiration level but below the other, we included *Aspiration Inconsistency*, which is set to 0 if the acquirer market returns is below or above both aspiration levels and is set to the difference between the acquirer market returns and higher aspiration level if the acquirer market returns is between the two aspiration levels (Greve, 1998). This variable shows how the inconsistency between the two aspiration levels shifts the effects of the performance relative to aspiration levels on making subsequent acquisitions. Lastly, we included *Year Dummy Variables* to the models to control for the effects of time periods.

Analysis

We estimate our models using event history analysis. Acquisition is treated as a repeatable event because firms in the sample can make multiple acquisitions during the period. Event history analysis offers the most comprehensive, dynamic picture of behavioral changes by considering the time between acquisitions (Allison, 1984; Yamaguchi, 1991). Further, the presence of right-censored observations may introduce an estimation bias if

an improper analytical technique is used. The event history analysis takes

into account right-censored observations and provides unbiased estimates

(Blossfeld, Golsch, & Rohwer, 2007).

We employ a piecewise exponential model, which splits the time axis

into predefined time periods; hazard rates are constant in each of these time

periods but can vary in an unconstrained way between them. Given l time

periods ($I_k = \{t | \tau_k \leq t \leq \tau_{k+1}\}$, $k = 1...l$), the hazard rate of the piecewise

exponential model from the initial state i to destination state j can be

represented as (Blossfeld et al., 2007):

$$r_{ij}(t) = e^{\alpha_k^{-ij}} e^{\beta^{ij} \chi^{ij}} \text{ if } t \in I_k,$$

> where, for each transition (i, j), α_k^{-ij} is a constant coefficient
> associated with the kth time period, β^{ij} is a row vector of
> covariates, and χ^{ij} is an associated vector of coefficients that
> were assumed not to vary across time periods.

Parametric estimates of hazard rates involve assumptions about how

time affects the occurrence of the events of interest, hence selecting an

appropriate functional specification for duration dependence is of great

importance. The piecewise exponential model is frequently used in

organization studies because it provides a more accurate picture of duration

dependence by allowing a flexible estimation of hazard rates of making

acquisitions (e.g., Ingram & Baum, 1997; Thornton & Ocasio, 1999). We also

estimated models with other parametric specifications to test the robustness

of our results (i.e., Exponential and Gompertz) and found converging

evidence, suggesting that the results were not the artifact of the type of parametric specification.

RESULTS

Table 1 shows descriptive statistics and a bivariate correlation matrix for all study variables. We found no evidence of multicollinearity in our models because we could not detect any coefficient instability among the research variables when variables were added individually and hierarchically (Greenberg & Parks, 1997; Kennedy, 2003). To further assess the potential model estimation issues that may be introduced by multicollinearity, we calculated variance inflation factors (VIFs). The VIFs for most variables in Model 2 are well below 10, a common rule of thumb used to detect potential multicollinearity problems (Hardin, 1996), ranging from 1.09 to 2.14. However, two variables, *Prior Acquisition Experience* and *Acquisition Speed*, have high VIF values (12.61 and 13.20 respectively) because they are highly correlated. We included both variables because they capture different theoretical constructs. The results on our key findings are not affected when we dropped either one of the variables.

— **Insert Tables 1 about here** —

Table 2 reports maximum-likelihood estimates from the piecewise exponential models predicting subsequent acquisition rates. Model 1 reports only the control variables. The main research variables were added to

Models 2. Model 2A is the same as Model 2, but in Model 2A we use relative acquirer market returns variables based on an alternative specification of spline functions (marginal splines) to test whether the coefficient changes below and above the aspiration levels are statistically significant. The interactions between *Acquirer Market Returns below/above Historical Aspiration* and *Acquirer Market Returns Variability* were added to Model 3. Model 4 added the interactions between *Acquirer Market Returns below/above Social Aspiration* and *Acquirer Market Returns Variability*. Model 5 is a fully-saturated model with all the variables and interactions. The addition of each set of variables significantly improved the goodness of fit of each model.

— Insert Tables 2 about here —

Our baseline proposition predicts a positive relationship between a firm's acquirer market returns relative to the aspiration levels and the probability that the firm will make a subsequent acquisition. The coefficients for both *Acquirer Market Returns below Historical Aspiration* and *Acquirer Market Returns above Historical Aspiration* are positive and statistically significant in all models, indicating that the higher the acquirer market returns relative to the historical aspiration level, the higher the probability that a bank in the sample will make a subsequent acquisition. Similarly, the coefficients for both *Acquirer Market Returns below Social Aspiration* and *Acquirer Market Returns above Social Aspiration* are positive and statistically

significant in all models. These results are consistent with our baseline

proposition.

Hypothesis 1 predicts that the positive relationship between

acquisition performance (acquirer market returns) relative to historical

aspiration and the probability of making a subsequent acquisition is stronger

when the performance of the focal acquisition remains below the historical

aspiration level than when it rises above this level. Model 2 shows that the

slope of the regression line for *Acquirer Market Returns below Historical*

Aspiration is greater (7.474) than the slope for *Acquirer Market Returns*

above Historical Aspiration (1.012). This result indicates that, for the same

level of increase in acquirer market returns relative to the historical

aspiration level, the probability of making a subsequent acquisition increases

much greater when acquirer market returns is below the historical aspiration

level than when it is above the historical aspiration level. To test whether the

change in the slopes below and above the historical aspiration level was

statistically significant, we specified a marginal spline function in Model 2A,

in which *Marginal Acquirer Market Returns above Historical Aspiration*

measures the incremental change in the slope of *Acquirer Market Returns*

above Historical Aspiration over the slope of *Acquirer Market Returns below*

Historical Aspiration. The coefficient for *Marginal Acquirer Market Returns*

above Historical Aspiration (-6.462) is negative and statistically significant,

suggesting that the negative change in the slopes below and above the

historical aspiration level is statistically significant. Figure 1A, which is based

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on Model 2, shows this relationship. Combined, these results provide support for Hypothesis 1.

Hypothesis 2 predicts that the relationship between acquisition performance (acquirer market returns) relative to the social aspiration level and the probability of making a subsequence acquisition is weaker when a firm's acquisition performance remains below its social aspiration level than when it exceeds the level. In line with this prediction, the slope of the regression line for *Acquirer Market Returns above Social Aspiration* (8.695) is greater than that for *Acquirer Market Returns below Social Aspiration* (5.826) in Model 2. The positive coefficient for *Marginal Acquirers Market Returns above Social Aspiration* in Model 2A indicates that the slope increases by 2.869 and that this difference is statistically significant. This result is shown in Figure 1B (based on Model 2). Taken together, these results provide support for Hypothesis 2.

— Insert Figure 1A and 1B about here —

Hypothesis 3a predicts that when acquisition performance (acquirer market returns) is below aspiration levels, the positive relationship between acquisition performance relative to aspiration levels and the probability of making a subsequent acquisition is *stronger* for banks with high performance variability in prior acquisitions than for those with low past performance variability. On the other hand, Hypothesis 3b predicts that when acquisition performance (acquirer market returns) is above aspiration levels, the

positive relationship between acquisition performance relative to aspiration levels and the probability of making a subsequent acquisition is *weaker* among banks with high performance variability in prior acquisitions than among those with low performance variability.

To better interpret these results, we visually depict the interaction effect of the predictors on the hazard rate of future acquisitions in Figures 2A and 2B. Figure 2A is based on Model 3 and illustrates the effects of acquirer market returns relative to the historical aspiration level on the multiplier of the hazard rate of making a subsequent acquisition. The graph plots the regression of *Acquirer Market Returns below/above Historical Aspiration* at different levels of *Acquirer Market Returns Variability* within the data range corresponding to one standard deviation above and below the mean of each variable (Aiken & West, 1991). Similarly, Figure 2B, which is based on Model 4, plots the regression of *Acquirer Market Returns below/above Social Aspiration* at different levels of *Acquirer Market Returns Variability*.

As predicted, Figure 2A shows that when acquirer market returns is below the historical aspiration level, the slope of the regression line is *greater* for the banks with high acquirer market returns variability (the dotted line) than those with low acquirer market returns variability (the solid line). By contrast, when acquirer market returns exceeds the historical aspiration level, the slope of the regression line is *smaller* for the banks with high acquirer market returns variability (the dotted line) than for the banks with low acquirer market returns variability (the solid line). In fact, when

acquirer market returns is above the historical aspiration level, the slope of the regression for banks with high acquirer market returns variability becomes almost flat (coefficient = 0.045), indicating that the probability of making subsequent acquisitions increases very slowly as the acquirer market returns relative to the historical aspiration level increases. These results provide support for Hypothesis 3a. Figure 2B provides similar results for acquisition performance relative to social aspiration levels, supporting Hypothesis 3b.

− **Insert Figures 2A & 2B about here** −

The results for several control variables are worth mentioning. Consistent with the findings of prior acquisition studies, larger size, more slack resources, stronger financial performance, and stock consideration all increase the probability of making a subsequent acquisition while relative acquisition size decrease the probability of making a subsequent acquisition. As predicted, *Acquisition Speed* increases the probability of making a subsequent acquisition. Interestingly, *Prior Acquisition Experience* increases acquisition probability, but this finding disappears when *Acquisition Speed* is added to the models. All else being equal, the variability in the acquirer market returns of prior acquisitions increases the probability that a firm will make a subsequent acquisition, implying that high variability in prior acquirer market returns makes managers more optimistic about future acquisition performance.

DISCUSSION

Building on the behavior theory of the firm, we have explored how the interpretation of performance feedback constrains and enables acquisition behavior. We find that acquisition behavior varies significantly depending upon whether historical or social aspiration levels are used to assess acquisition performance. Variability in prior acquisition performance moderates the relationship of performance relative to aspiration levels and acquisition behavior. These findings, when taken together, form a pattern of managerial behavior that is both revealing and suggestive of fruitful research opportunities.

Theoretical Contributions, Major Findings, and Implications for Research

The feedback-based learning model suggests that organizations generate aspiration levels from their prior performance history (Lant, 1992; Lant & Montgomery, 1987) and/or by comparison with the performance of a reference group such as industry peers or direct competitors (Desai, 2008; Gooding, Goel, & Wiseman, 1996; Mishina et al., 2010). We question the traditional view that these two forms of aspiration levels affect firm behavior in a similar manner (Baum et al., 2005; Greve, 1998; Harris & Bromiley, 2007). Since they arise from different sources of information and through different organizational processes, we posit that firms interpret and respond differently to these two forms of performance comparison. Consistent with

our predictions, we find evidence that historical and social aspirations produce distinct behavioral responses. This study is also the first to show that variability in acquisition performance has an influence on behavioral response patterns, that is, under conditions of high acquisition performance variability managers are more likely to perceive 'false positives' when performance exceeds aspirations and 'false negatives' when performance falls below aspirations.

Consistent with prior studies that have shown that strong performance reinforces existing strategies (Haleblian et al., 2006), we find that as a firm's acquisition performance improves relative to the historical aspiration level, the probability of its making a subsequent acquisition also increases. Our study adds an important dimension to the base finding that the increase in the probability of making acquisitions is weaker when a firm's acquisition performance remains *above* its historical aspiration level than when it remains below. While positive performance improvements relative to historical aspirations are clearly motivational, they also boost a firm's performance expectation and shift its historical aspiration level upwards. Managers in this situation are likely to feel pressure to achieve even higher acquisition performance. Further, as performance improvement goes beyond a point considered "normal" given their acquisition capabilities (as manifested in the historical aspiration level), they may find it increasingly difficult to better their performance (or even to replicate their former level of performance). Thus they take a step back and exercise greater *caution*

before making their next move, consequently delaying the onset of a new deal.

Performance above social aspirations yields similarly interesting findings. The positive relationship between acquisition performance relative to social aspiration levels and the probability of acquisitions is stronger (more positive) when acquisition performance is *above* its social aspiration level than when it remains below. Managers who seek to interpret others' performance do not always have access to private knowledge required to accurately compare their performance with the performance of others; hence they are often unaware of the specific underlying factors that explain differences in performance with peer firms. Under such conditions, they are prone to attribute strong performance to their own capabilities, which tilts the balance between momentum and caution toward *momentum*.

In addition, we find that prior performance variability moderates the relationship between performance relative to aspiration levels (both forms) and the probability of future acquisitions. Specifically, when acquisition performance remains *below* the aspiration level, the positive relationship between acquisition performance relative to aspiration levels is stronger for firms with high performance variability than those with low performance variability. Conversely, when acquisition performance *exceeds* the aspiration level, the positive relationship between acquisition performance relative to aspiration levels is stronger for firms with low performance variability. High performance variability may thus be deemed an *unreliable* signal: for

performance above aspirations it makes managers doubt their ability to replicate the level of performance in the future, while for performance below aspirations they perceive a possibility to improve performance in the future. By contrast, when performance remains below aspirations, low variability may be taken as a sign that a firm has fixed capabilities that cannot be further improved, in which case it will hesitate to make further acquisitions. Overall, the unreliability of high variability in performance feedback intensifies the relationship between aspirations and future acquisitions below aspirations but attenuates the relationship above aspirations.

Future Research

Our study primarily explores the question of the influence of past performance on managers' behavior. The answer is apparently multi-faceted. One would expect both performance relative to a firm's historical record and relative to other firms to play their part. However, our interaction hypotheses on performance variability make a credible attempt to capture additional complexity around managerial interpretations. The true picture is almost certainly more complex still. Managers likely consider absolute and relative performance, as well as performance variability, in a simultaneous manner, weighing each in various ways before reaching if not a conclusion, at least a sense of where the firm stands. While it is an empirical challenge to evaluate the main and multiple interactions among the three types of performance assessments, we suspect that managers do so by relying on various heuristics that go beyond those we have chosen to focus on here.

Despite this complexity, other research opportunities are apparent. For one thing, the relative importance of each mode of performance feedback remains an open question. Perhaps more interesting is the question: Under what conditions are managers more likely to attend to the signals emanating from historical and social acquisition performance, and the variability around these levels? Prior work that uses different specifications of aspiration models provides important clues. Some models assume that decision makers consider both social and historical information and combine them to form a single aspiration level (e.g., Cyert & March, 1963; Mezias, Chen, & Murphy, 2002). Other models posit that managers will attend to two aspiration levels separately and do not combine historical and social influences into a single aspiration level (e.g., Baum & Dahlin, 2007; Baum et al., 2005; Chen & Miller, 2007; Greve, 1998; Harris & Bromiley, 2007). A third set proposes that decision makers shift their attention between the two (March & Shapira, 1992; Wiseman & Bromiley, 1996).

These models represent different theoretical assumptions regarding information processing in organizations (Washburn & Bromiley, 2012: 897). Greve (2003a: 42), for example, suggests that managers will rely heavily on social aspiration levels if they believe the firm is comparable to others in an industry, and on historical aspiration levels if they consider their firm unique. In a similar vein, the external context can also influence managerial perceptions of performance. In a dynamic, fast-changing environment, for example, historical performance may be less important to decision makers

than recent results. At other times—for example in industries with amorphous borders such as information technology, entertainment and telecommunications—firms may find that they monitor more than one set of competitors, each of which has some prominence in managerial thinking about strategy. While we have gained important insights on how the respective forms of aspirations differ in origin and process from these studies, we do not have definite answers as to how managers attend to two aspiration levels. The recently proposed varying parameters model is promising as it adds realistic assumptions about switching between two aspirations (Bromiley & Harris, 2014; Washburn & Bromiley, 2012). However, we do not explore the switching model in our study because it does not allow us to compare two aspiration levels, which is our main research interest. Our findings could potentially inform the switching model, and future studies using a switching model that reflects our findings may add considerable insights and further advance this promising model.

We advance the literature in performance feedback by exploring the effects of the variability in acquisition performance, an important dimension of performance feedback that has received little scholarly attention. In addition to the variability in acquisition performance, the variability in aspiration levels may influence the way managers interpret performance relative to aspiration levels. For example, a highly variable performance of the firms in the reference group increases the variability of social aspirations, which in turn may cast doubt on the value of social aspiration as a useful

benchmark. Further work on the variability in historical and social aspiration levels should add important insights to the literature.

Our paper has potential limitations. First, there are some factors that may affect both the independent variable and the dependent variable, causing an omitted variable bias (Wooldridge, 2002). For example, the size of the focal acquisition may influence the performance of the acquisition as large acquisitions tend to perform poorly (King et al., 2004). It can also affect the probability of making a subsequent acquisition as a large acquisition will prevent an acquirer from making another deal soon. Also, a large number of acquisitions in the industry intensify competition for targets, which may affect both the performance of the focal acquisition (competition for targets may prompt firms to acquire inadequate targets) and the future acquisition probability (competition for targets decreases the number of eligible targets). Thus, in building our empirical models, we added a comprehensive set of control variables to address the potential omitted variable bias, including the year fixed effect. However, given the complex interaction between acquisition performance and acquisition behavior, it is possible that there may be other potential factors that are not included in the model, which warrants a further investigation on potential omitted variables. Second, we have only examined the effects of performance aspirations and performance variability on the probability of making a horizontal acquisition; future work could broaden the focus of acquisitions to see if our findings hold or are modified when firms face different acquisition types.

Third, since our study proposed underlying psychological processes—such as the effect of self-enhancement—that influence firm acquisition behavior but were not directly tested, the opportunity for future laboratory-based work is apparent. Such as lab study work may be able to tease out the specific underlying causal processes that our work suggests. Specifically, future work could isolate the causal chain in which aspirations first influence psychological processes, which subsequently impact behavior. Moreover, the influence of performance variability also offers a fruitful avenue for further exploration in laboratory settings. Such research could examine how it impacts attentional processes. It would also be interesting to see to what degree individuals account for such variability, and how this changes their risk-seeking behavior. Finally, the behavioral theory of the firm suggests that managers have both levels of performance they aspire to (aspirations) and levels of performance they expect (expectations) (Cyert & March, 1963). Several notable studies considered both aspiration and expectation and explored the effects of "attainment discrepancy"—i.e., the difference between aspirations and expectations (e.g., Bromiley, 1991; Lant & Montgomery, 1987; Wiseman & Bromiley, 1996). Due to the data limitation, we could not theorize and test the effects of expectations separately from aspirations. Future acquisition work that explores the role of both aspirations and expectations could add valuable insights to both the performance feedback learning and the acquisition literature.

Conclusion

Our study shows that not all aspirations are created equal. Indeed, they are differentially influenced both by type (historical vs. social) and by prior performance variability. We advance theories on learning from performance feedback by demonstrating that managerial interpretations of past acquisition performance play an important role in shaping a firm's future acquisition behavior. Thus an interpretation-based perspective on the behavioral of the firm lends itself to a potentially more precise examination of feedback-based learning and aspirations. Further exploration of how managerial interpretations of performance feedback impact other forms of strategic behavior is to be encouraged.

Our study also adds an important insight to the acquisition literature. Scholars and practitioners alike have focused on managers' hubristic behavior as an explanation for the paradox of making acquisitions despite poor acquisition performance (Hayward & Hambrick, 1997). Our study suggests that the way in which managers interpret prior performance may help to explain this. Importantly, their interpretations of performance need not be absolute; rather, by comparing acquisition performance to the historical record or to peer firms, managers likely assess success and failure in different ways. For example, even 'lukewarm' results from an acquisition may be acceptable when competitors do even worse. Indeed such managers may conclude that an acquisition was a "success" in comparison with their peers, and be more (rather than less) inclined to make subsequent

acquisitions. Hence, relative performance has real meaning as it helps

motivate managers to act or not to act in their capacity as strategists.

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Table 1: Descriptive Statistics and Correlations (N = 8,799)

	Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
1	0-5 years	0.57	0.50										
2	6-10 years	0.30	0.46	-.75									
3	> 10 years	0.13	0.34	-.45	-.25								
4	Acquirer Size	14.35	1.73	-.26	.13	.20							
5	Acquirer Slack	0.66	0.11	.20	-.11	-.14	-.32						
6	Acquirer Firm Performance	12.75	9.42	-.06	.03	.04	.20	-.01					
7	Acquirer Cost of Fund	3.66	1.16	.19	-.03	-.25	.00	-.07	-.07				
8	Relative Acquisition Size	0.19	0.25	.08	-.04	-.06	-.27	-.06	-.08	.02			
9	Stock Consideration	0.49	0.50	-.02	.07	-.06	.13	.09	.07	.10	.00		
10	Merger of Equals	0.02	0.15	.00	.00	.01	.03	-.04	-.01	.04	.48	.11	
11	Lock-Up Agreement	0.24	0.43	-.10	.10	.01	.18	-.14	.04	.05	.20	.23	.15
12	Regional Acquisition Density	28.90	17.42	.06	.03	-.13	-.01	.13	.02	.11	-.08	.16	-.03
13	Regional Total Acquisition Value ($B)	5.88	10.28	-.11	.10	.02	.08	-.13	.01	.00	.13	.12	.11
14	Number of Banks	415.77	263.90	.06	-.05	-.03	-.07	.09	-.01	.03	-.02	-.16	.00
15	Bank Concentration	0.12	0.03	-.08	.04	.06	.00	-.15	.08	-.14	.01	-.01	-.02
16	First Acquisition Indicator	0.31	0.46	.30	-.20	-.17	-.46	.04	-.16	.07	.26	-.13	.05
17	Negative Inconsistency	0.02	0.04	.01	.00	-.01	.03	.01	-.12	.07	.00	.02	.03
18	Prior Acquisition Experience	5.44	10.36	-.29	.18	.18	.54	-.11	.14	-.04	-.20	.15	-.03
19	Prior Average Acquirer Market Returns	-0.001	0.04	.02	.00	-.03	-.11	.02	-.15	.03	.01	-.01	.03
20	Acquisition Speed	0.56	0.98	-.24	.18	.11	.55	-.06	.15	.01	-.23	.17	-.03
21	Acquirer Market Returns Variability	0.02	0.03	-.16	.10	.09	.20	-.07	.09	-.04	.00	.09	.05
22	Acquirer Market Returns below Historical Asp.	-0.02	0.04	.06	-.05	-.03	-.05	.08	-.01	.00	-.18	-.08	-.10
23	Acquirer Market Returns above Historical Asp.	0.020	0.05	.04	-.02	-.03	.02	.01	-.08	.07	.00	.05	.03
24	Acquirer Market Returns below Social Asp.	-0.01	0.04	.06	-.01	-.07	-.03	-.02	.00	.00	.00	.01	-.02
25	Acquirer Market Returns above Social Asp.	0.01	0.02	-.01	.03	-.03	.13	-.01	.05	.05	-.08	.02	-.03

	Variable	11	12	13	14	15	16	17	18	19	20	21	22	23	24
12	Regional Acquisition Density	.00													
13	Regional Total Acquisition Value (/1000)	.20	.12												
14	Number of Banks (/100)	-.17	-.01	-.17											
15	Bank Concentration	-.03	.03	.14	-.31										
16	First Acquisition Indicator	-.12	-.07	-.08	.05	-.10									
17	Negative Inconsistency	-.02	.02	.04	-.07	.02	-.01								
18	Prior Acquisition Experience	.02	.10	.09	-.06	.14	-.35	.05							
19	Prior Average Acquirer	-.10	.03	-.0	.00	.03	.07	.54	-.0						

		1						3							
	Market Returns														
20	Acquisition Speed	.01	.14	.06	-.02	.09	-.38	.06	.95	-.04					
21	Acquirer Market Returns Variability	.13	.00	.07	-.04	.07	-.52	.09	.14	-.07	.14				
22	Acquirer Market Returns below Historical Asp.	-.19	.03	-.05	.03	-.04	.10	.09	-.04	.17	-.02	-.33			
23	Acquirer Market Returns above Historical Asp.	-.03	.10	.03	-.06	.04	-.02	.65	.08	.51	.07	.13	.18		
24	Acquirer Market Returns below Social Asp.	.00	.10	.01	.04	.01	.02	-.01	-.09	.05	-.09	-.11	.01	.01	
25	Acquirer Market Returns above Social Asp.	-.02	.07	.04	-.09	.09	-.10	.16	.19	.01	.22	.07	.01	.01	.11

Table 2: Maximum Likelihood Estimates of Subsequent Acquisitions (N = 8,799)

Variables	Model 1		Model 2		Model 2A		Model 3		Model 4		Model 5	
Time Pieces												
0-5 years	1.56**	(.09)	1.47**	(.09)	1.47**	(.09)	1.48**	(.09)	1.47**	(.09)	1.47**	(.09)
6-10 years	0.80**	(.09)	0.76**	(.09)	0.76**	(.09)	0.77**	(.09)	0.77**	(.09)	0.77**	(.09)
> 10 years	-12.95**		-12.89**	(.46)	-12.89**	(.46)	-12.90**	(.46)	-13.12**	(.47)	-13.07**	(.47)
Acquirer Characteristics												
Acquirer Size	0.21**	(.02)	0.21**	(.02)	0.21**	(.02)	0.21**	(.02)	0.22**	(.02)	0.21**	(.02)
Acquirer Slack	1.69**	(.25)	1.77**	(.25)	1.77**	(.25)	1.75**	(.25)	1.79***	(.25)	1.76**	(.25)
Acquirer Firm Performance	0.04**	(.00)	0.04**	(.00)	0.04**	(.00)	0.04**	(.00)	0.04**	(.00)	0.04**	(.00)
Acquirer Cost of Fund	0.03	(.02)	0.01	(.02)	0.01	(.02)	0.01	(.02)	0.02	(.02)	0.01	(.02)
Deal Characteristics												
Relative Acquisition Size	-0.55**	(.14)	-0.31*	(.14)	-0.31*	(.14)	-0.29*	(.14)	-0.32*	(.14)	-0.29*	(.14)
Stock Consideration	0.27**	(.04)	0.31**	(.04)	0.31**	(.04)	0.30**	(.05)	0.32**	(.04)	0.31**	(.05)
Merger of Equals	0.07	(.20)	0.04	(.21)	0.04	(.21)	0.01	(.21)	0.02	(.21)	0.01	(.21)
Lock-Up Agreement	-0.15**	(.06)	-0.08	(.06)	-0.08	(.06)	-0.07	(.06)	-0.07	(.06)	-0.07	(.06)
Regional M&A Pattern												
Regional Acquisition Density	0.01**	(.00)	0.004**	(.00)	0.004**	(.00)	0.004**	(.00)	0.004**	(.00)	0.004**	(.00)
Regional Total Acquisition Value (/1000)	-0.01**	(.00)	-0.01**	(.00)	-0.01**	(.00)	-0.01**	(.00)	-0.01**	(.00)	-0.01**	(.00)
Number of Banks (/100)	-0.02†	(.00)	-0.002	(.00)	-0.002	(.00)	0.001	(.00)	0.001	(.00)	0.002	(.00)
Bank Concentration	0.78	(.88)	0.89	(.89)	0.89	(.89)	1.20	(.90)	1.15	(.90)	1.31	(.90)
Model Control Variables												

	(1)		(2)		(3)		(4)		(5)		(6)	
First Acquisition Indicator	-0.82**	(.07)	-0.78**	(.07)	-0.78**	(.07)	-0.74**	(.07)	-0.76**	(.07)	-0.74**	(.07)
Aspiration Inconsistency	2.39**	(.42)	0.36	(.52)	0.36	(.52)	0.32	(.54)	0.03	(.53)	0.31	(.54)
Year Fixed Effect	Included		Included		Included		Included		Included		Included	
Acquirer Prior Acquisition Characteristics												
Prior Acquisition Experience	-0.01†	(.00)	-0.003	(.00)	-0.003	(.00)	-0.003	(.01)	-0.003	(.01)	-0.003	(.01)
Prior Average Acquirer Market Returns	-0.80	(.72)	-2.34**	(.83)	-2.34**	(.83)	-2.01*	(.83)	-2.01*	(.84)	-1.94*	(.85)
Acquisition Speed	0.44**	(.06)	0.35**	(.06)	0.35**	(.06)	0.35**	(.06)	0.34**	(.06)	0.34**	(.06)
Acquirer Market Returns Variability	0.36	(.86)	1.80*	(.82)	1.80*	(.82)	5.66**	(1.07)	4.02**	(.91)	6.93**	(1.11)
Historical Aspiration Levels (Hist. Asp.)												
Acquirer Market Returns (AMR) below Hist. Asp.			7.47**	(.88)	7.47**	(.88)	5.11**	(1.43)	7.40**	(.88)	5.39**	(1.43)
AMR above Hist. Asp.			1.01**	(.36)			2.45**	(.47)	1.23**	(.37)	2.36**	(.47)
Marginal AMR above Hist. Asp.					-6.46**	(1.02)						
Social Aspiration Levels (Soc. Asp.)												
Acquirer Market Returns (AMR) below Soc. Asp.			5.83**	(1.11)	5.83**	(1.11)	5.82**	(1.10)	2.00	(2.01)	1.70	(2.07)
AMR above Soc. Asp.			8.70**	(.68)			8.89**	(.69)	12.19**	(1.16)	11.47**	(1.21)
Marginal AMR above Soc. Asp.					2.87*	(1.41)						
Interactions: Aspiration Levels x Acquire Market Returns Variability (AMR Variability)												
AMR below Hist. Asp. x AMR Variability							67.62*	(27.46)		(.00)	57.76*	(27.10)
AMR above Hist. Asp. x AMR Variability							-40.09**	(10.42)		(.00)	-35.60**	(10.67)

AMR below Soc. Asp. x AMR Variability					120.70* (61.16)	134.13* (64.32)
AMR above Soc. Asp. x AMR Variability					-109.15** (31.84)	-85.33* (34.59)
Log-Likelihood	190.16	355.21	355.21	368.34	365.03	374.08
Incremental LR χ^2		330.10**	330.10**	26.26**	19.64**	37.73**
ΔDF		4	4	2	2	4

Note: *p < 0.05; **p < 0.01; †p < 0.1; unstandardized coefficients are reported. Standard errors are in parentheses; the tests of significance shown in the table are two-tailed.

Figure 1A: Historical Aspiration Levels and the Multiplier of Hazard of Making Future Acquisitions
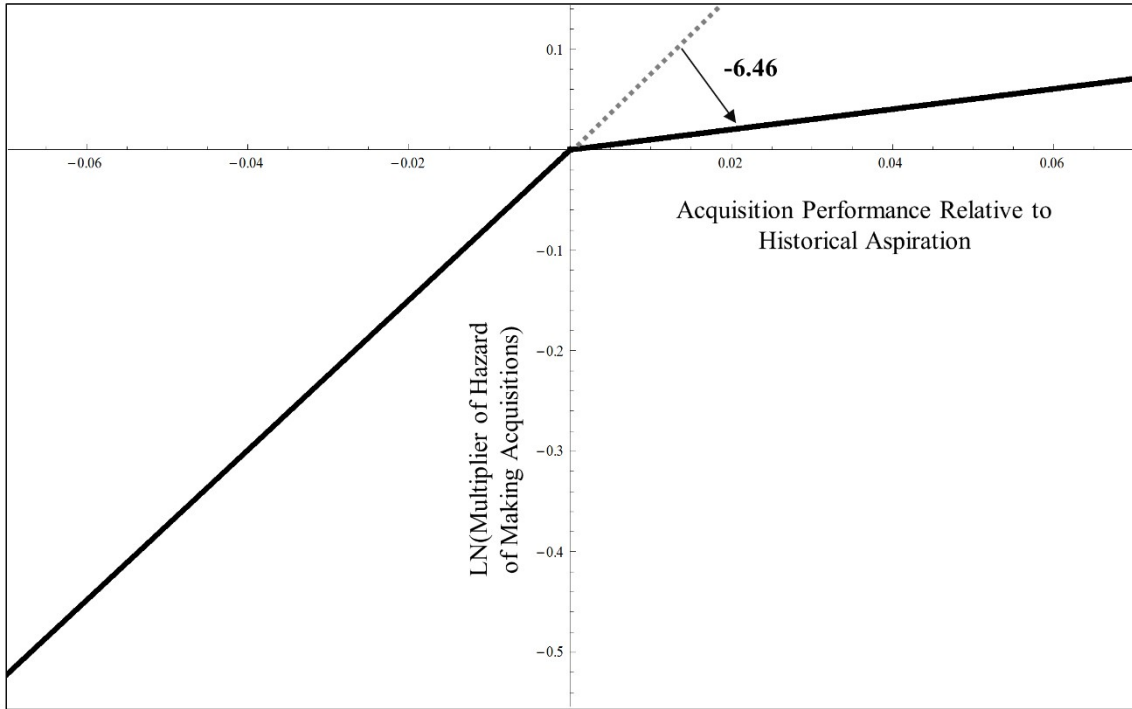
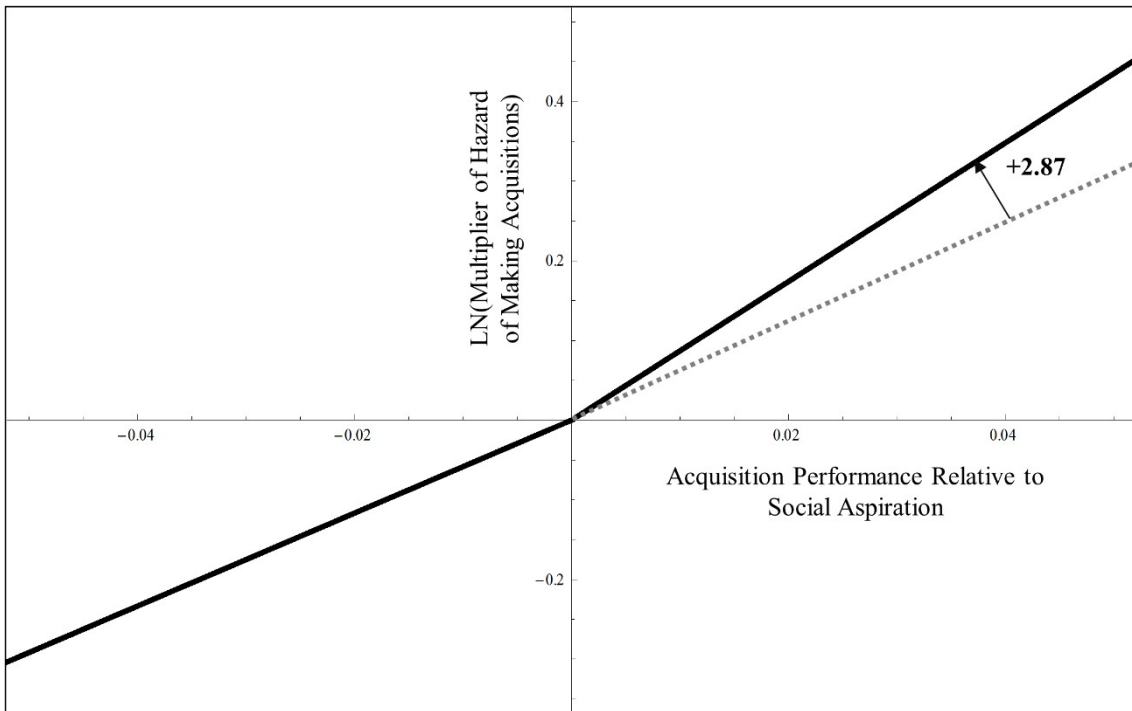**Figure 1B: Social Aspiration Levels and the Multiplier of Hazard of Making Future Acquisitions**

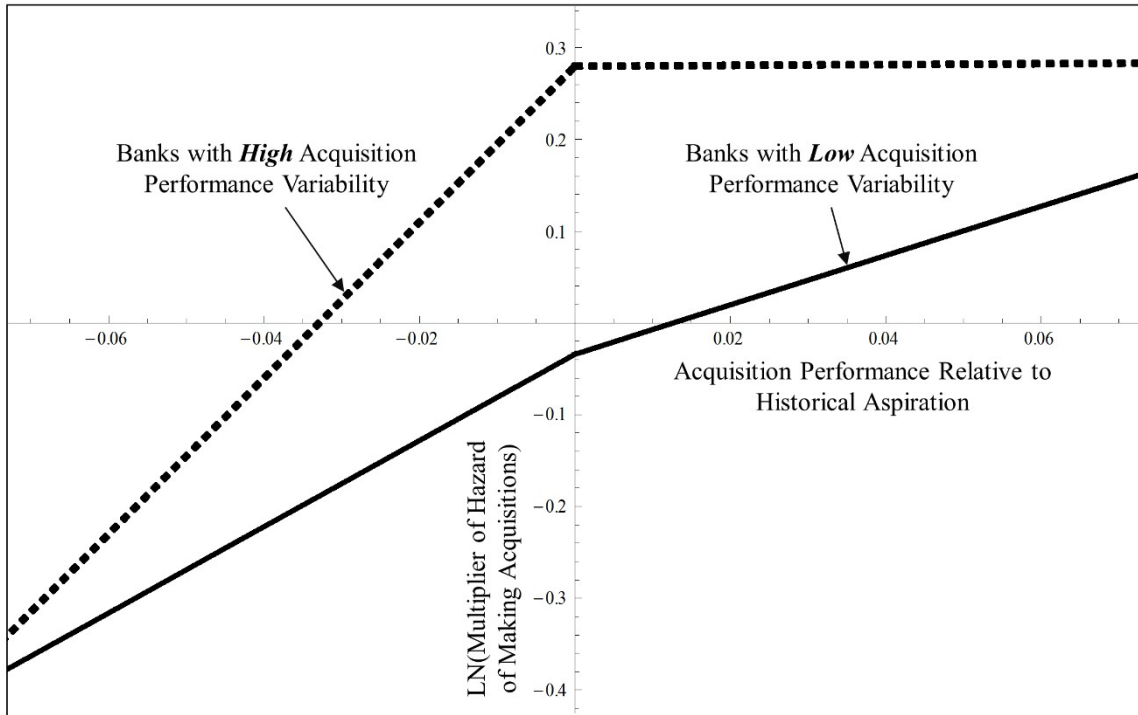# Figure 2A: Interaction between Historical Aspiration Levels and Variability in Acquisition Performance
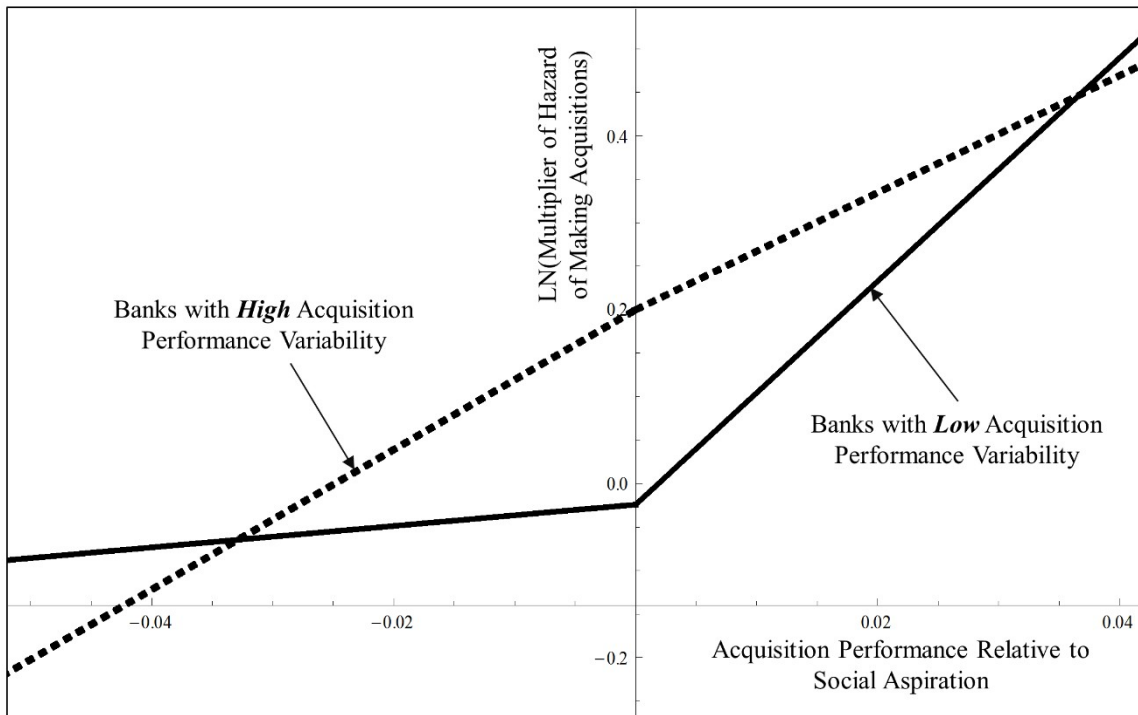

Figure 2B: Interaction between Social Aspiration Levels and Variability in Acquisition Performance

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