

Prior to beginning this discussion, read the following required articles:

- "Organizational Learning in Target Setting"
- "Organizational Learning and Learning Organizations: An Integrative Framework"
- "Improving Organizational Learning Through Leadership Training"
- "Systematic Professional Development Training and Its Impact on Teachers' Attitudes Toward ELLs: SIOP and Guided Coaching"
- "Review of Organizational Resilience: How Learning Sustains Organizations in Crisis, Disaster, and Breakdowns"

For this discussion, you will be focusing on your self-development and your learning experiences in the context of the workplace. In your initial post, apply basic research methods and the alignment of content within research to the questions below by making connections between your personal experiences and the content from the readings. You might also utilize other peer-reviewed articles of interest to you to support your assertions and conclusions. Analyze how your personal development in the learning and cognition domains have matured and developed through your formative years and work experiences. Your writing should not simply answer each question; a fully developed personal analysis of your own growth and learning processes should be concise and well organized in a manner that exhibits your improved writing ability and reflects APA style format.

In addition to answering the questions below, include an introduction and conclusion to your post.

- What types of training and education have you received in the workplace?
- What do you do now that differs from your past educational learning experiences?
- How have your life experiences affected your learning?
- Have events in your life influenced your beliefs and how you assert yourself in the learning process?
- How do you see yourself as a life-long learner?

Next, consider how organizational learning and culture affect you personally and apply skeptical inquiry to the resolution of problems related to your own learning and cognition. How might you adjust your current strategies? Finally, apply ethical principles and professional standards of learning and cognition psychology that you have learned about to teaching or counseling others in the workplace. What implications should you consider when working with others?

This discussion should be approximately 500 words in length and should establish your understanding of the content, apply appropriate methods of ethical practices, and exhibit appropriate scaffolding of personal experience to the week's content.

ORGANIZATIONAL LEARNING IN TARGET SETTING

CARMEN ARANDA
JAVIER ARELLANO
University of Navarra

ANTONIO DAVILA
IESE Business School

This paper examines organizational learning in a target setting. Organizations commonly set targets—explicit and quantitative reference points—for their operational units that reflect top management aspirations for these units. Targets are commonly the outcome of a subjective process where supervisors combine their explicit and tacit knowledge to set performance expectations for their units. Using a proprietary database from a large European travel company during a period of rapid expansion, we document the effect of organizational learning by studying how targets change as units mature. In particular, we examine managers' experiential learning from branches' past performance and their vicarious learning from branches in the same region in determining performance expectations over the life cycle of branches. Our results indicate that, in setting performance targets, managers increase the weight of a branch's past performance and decrease the weight of comparable branches' performance as the branch matures. Vicarious learning, where managers extrapolate the performance of comparable branches to a new branch, dominates in the early years. Over time, this type of learning is replaced by experiential learning as experience accumulates. We document how early on in the life of branches, these two types of learning interact; this interaction disappears as branches mature. Furthermore, we find that managers learn differently from successes and failures early in the lives of the new units, and this learning is affected by the magnitude of the successes and failures.

Aspiration levels are crucial reference points for organizations to gauge observed performance as success or failure, which in turn influences performance evaluation, compensation, strategic behavior, risk-taking, and search activities (Audia & Greve, 2006; Baum, Rowley, & Shipilov, 2005; Cyert & March, 1963; Greve, 2003). Hence, an understanding of how companies use available information to set aspiration levels is important for management research (Blettner, He, Hu, & Bettis, 2015; Bromiley & Harris, 2014; Cyert & March, 1963; Greve, 2002; Kim, Finkelstein, & Halebian, 2015; Shinkle, 2012).

We thank participants at the European Accounting Association Meetings, and at Rotterdam School of Management, Manchester University, Bocconi University, and University of Lancaster seminars for helpful comments. We gratefully acknowledge the financial support of the Cátedra de Empresa Volkswagen Navarra-Universidad de Navarra and the Alcatel-Lucent Chair at IESE.

Literature examining multi-unit firms has focused on two main reference points that organizations use in the process of forming aspirations: the past performance of the operational unit and the performance of comparable units, such as sister units under the same parent organization (Blettner et al., 2015). However, to the best of our knowledge, no study has analyzed the effect of learning on the formation of organizational aspirations over time. Learning affects the relevance of a unit's own performance and its comparability to sister units in the formation of aspirations as the unit matures. Furthermore, we examine how learning from both one's own performance and the performance of others depends on the magnitude of the deviation from aspirations as well as whether aspirations are construed as success or failure. We also consider how these two types of learning influence each other in the formation of aspirations.

Our objective is to examine organizational learning within the context of the formation of targets that

are defined as explicit and quantitative aspirations.¹ Aspirations interpreted as managers' anticipated performance level (Shinkle, 2012) are not necessarily reflected in an explicit reference point. Even so, organizations commonly set targets for their operational units. We posit that experiential learning from observation of the performance of each new operational unit (Argote, 2013) and vicarious learning from observation of the performance of comparable units (Haunschild & Miner, 1997) both affect aspiration formation. Vicarious learning is enhanced when the units are more comparable (Albuquerque, 2009; Kim & Miner, 2007).

Organizational learning literature² has often used outcomes to capture changes in knowledge, such as: learning curve effects (Argote, 2013; Argote & Epple, 1990; Balasubramanian & Lieberman, 2010); investment behavior (Audia & Greve, 2006; Greve, 2007); innovation launches (Greve, 2003); growth (Greve, 2008; Sorenson, 2003); patents (Schildt, Keil, & Maula, 2012; Wagner, Hoisl, & Thoma, 2014); foreign subsidiary location decisions (Belderbos, Van Olffen, & Zou, 2011); acquisition patterns (Muehlfeld, Sahib, & Witteloostuijn, 2012); partner control (Dekker & Van den Abbeele, 2010); and the adoption of new management practices (Schwab, 2007). Yet, organizational outcomes can be a noisy proxy for organizational learning compared to changes in organizational practices and can lead to incorrect cause-effect inferences (March & Sutton, 1997) and superstitious learning (Zollo & Reuer, 2010). Rather than studying the performance consequences of learning, we examine how learning

shapes the internal organizational process of setting targets.

Only a handful of studies investigate the effect of learning on internal processes. These studies have adopted a qualitative, case-based research design. Garud, Dunbar, and Bartel (2011) study how narratives incorporate learning from unusual experiences, and Rerup and Feldman (2011) provide case-based evidence of the co-evolution of routines and interpretative schemata. This paper focuses on aspiration levels as crystallized in performance targets using a quantitative case study research design. The target-setting process is an information-based routine (Simons, 1995) that materializes the knowledge available to managers into targets (Fisher, Maines, Pfeffer, & Sprinkle, 2002; Raju & Srinivasan, 1996). The process is commonly subjective (Bol, Keune, Matsumura, & Shin, 2010) to accommodate tacit knowledge beyond the explicit knowledge available in the organization (Davila & Foster, 2007; Merchant & Van der Stede, 2011). The subjectivity makes this process particularly suitable to study how organizational learning affects managers' use of available information to set aspiration levels.

The paper uses targets from 421 branches of a travel retail company over a four-year growth period. During this period, the company replicated the retail model through the opening of new branches that were similar to existing ones in many aspects, such as the product portfolio, structure, go-to-market strategies, and organizational routines. For each new branch that was opened, the organization went through a learning period to understand its common and specific characteristics. The evidence indicates that experiential and vicarious learning affect the way that aspirations are formed as units mature. Managers rely on the performance of comparable units to set targets early in the life of a unit, and as learning occurs, they shift their attention to past performance. A divisional manager's description of the phenomenon illustrates this process: "Branches mature over a period of three to four years; early on, targets are based on estimates gathered during the decision about opening the particular office and the performance of branches in the same neighborhood; as they mature, targets rely to a larger extent on their past performance."

The study further contributes to the learning associated with the magnitude of deviation from performance and how this learning differs across young and mature units. Our evidence indicates that the relevance of past performance in setting targets is significantly different between younger and mature units for unfavorable performance deviations (failure). A third

¹ How targets and aspirations are set is a topic studied from different perspectives. One line of study explores aspirations in budget-based incentive systems and their influence on managers' commitment and effort; another line of research examines the effect of aspirations on managers' risk taking and strategic behavior. The variety of perspectives on the phenomenon has led to a proliferation of terms. For instance, the extent to which targets rely on a unit's own past performance is referred to as "ratcheting" (Leone & Rock, 2002) and "reference point updating speed" (Greve, 2002). Similarly, "goals" and "aspirations" are different in that aspirations have been defined as expectations for a specific goal (Cyert & March 1963).

² Organizational learning captures the dynamic nature of knowledge (Argote & Miron-Spektor, 2011) as participants draw from their experiences and those of other managers to alter the knowledge of the organization, codified in routines, rules, and procedures (explicit knowledge) and embodied in mental models, schemata, culture, and individual cognition (tacit knowledge).

contribution relates to the literature on cross-sectional learning effects (Brass, Galaskiewicz, Greve, & Tsai, 2004; Schwab, 2007). Past performance and performance from comparable units are likely to provide information content relative to each other that could inform the learning process. Thus, the effect of past performance on managers' use of information depends on the performance of comparable units. We find that vicarious learning is differentially affected by experiential learning in young units.

Finally, the paper provides new evidence on the dynamics of target setting. Research on target setting has studied mature organizations (Bouwens & Kroos, 2011; Indjejikian, Matejka, Merchant, & Van der Stede, 2014; Leone & Rock, 2002) where operational units have existed for long periods and managers have a stable implicit model. These settings assume that learning is already incorporated into these models. In contrast, this study is based on the analysis of observed targets for new branches since the date of their inception. The study explicitly examines how learning affects target setting as managers change their use of information when balancing past performance and peer performance over time.³

THEORETICAL FRAMEWORK

Performance Feedback and Aspirations

Target setting is a core process of the planning and control functions of management (Fayol, 1916). Targets make aspirations explicit and are frequently used for employee evaluation and compensation (Simons, 2000).⁴ At the start of each period, divisions, departments, and often individuals are given a target that defines the organization's aspirations for them, and performance is routinely evaluated relative to this

target (Matsumura & Shin, 2006; Murphy, 2000). Target setting is commonly a subjective process (Bol et al., 2010) through which the manager synthesizes the different sources of information available to him/her (Fisher et al., 2002; Raju & Srinivasan, 1996). This characteristic differs from those of compensation contracts for customer-facing units, which are typically formula-based. A formula associates the size of the bonus with the difference between the actual and expected performance (deviation). The shape of this relationship is often linear (commission) or piecewise linear with a floor and a ceiling. Learning is reflected in these contracts only when the formula is modified.

Two questions of interest regarding aspirations are: (1) how does performance feedback (defined as the deviation between actual performance and aspirations) affect organizations? (2) How do managers use available information to set aspirations and targets as their quantitative realization? This second question is the focus of this study.

Performance feedback theory (Cyert & March, 1963) has made significant progress in our understanding of how aspiration levels and performance feedback influence a variety of organizational decisions, such as strategic behavior, risk taking, and the propensity to make changes (Audia & Brion, 2007; Baum et al., 2005; Greve, 2003, 2008; Sorenson, 2003), which, in turn, influences subsequent performance (Shinkle, 2012). For instance, failing to achieve aspirations has been argued to trigger problemistic search (Argote & Greve, 2007: 339; Baum & Dahlin, 2007: 371). The stock of resources influences how negative performance is perceived—as a repairable gap or alternatively as a threat to survival—and hence affects risk tolerance (Audia & Greve, 2006). Additionally, performance above aspirations has been argued to lead to slack-driven search. Decision makers have access to additional resources and pursue initiatives outside the current strategy of the organization (Baum & Dahlin, 2007; Lant, Milliken, & Batra, 1992; Levinthal & March, 1981).

Aspiration theory predicts how new information, mostly derived from a unit's prior performance and peer units' performance (social comparison), changes aspiration levels (Blettner et al., 2015; Lant, 1992).⁵

³ Target setting can support learning through the interactions between organizational members during the process; we do not capture this type of learning in our research.

⁴ Target setting plays other important roles in organizations such as motivational, resource allocation, coordination, control (management by exception), and the learning associated with performance evaluations (Merchant & Van der Stede, 2011). Targets are used to quantify aspirations in financial as well as non-financial measures. For instance, financial targets are set for measures such as revenue, revenue growth, and profits. Non-financial measures include measures such as customer satisfaction, quality levels, productivity, or time to market. Together, the main financial and non-financial measures are often referred to as key performance indicators (KPIs) (Kaplan & Norton, 2001).

⁵ Theoretical and empirical work on adaptive aspiration formation models has mainly focused on the focal unit's own past performance and has modeled aspiration as an exponentially weighted average of past performance. Social comparison is defined as a direct comparison of the performance of the focal unit with the performance of comparable units (Mezias, Chen, & Murphy, 2002).

Theory concerning the formation of aspirations (and targets) starts from a rational expectations perspective and studies deviations from expectations. Targets are set equal to future performance expectations—what is most likely to happen in the future—and managers optimally use all the available information to set these targets.⁶ From a rational expectations perspective, deviations arise from unexpected performance changes. These changes are permanent if the underlying production function varies and managers optimally include them in next year's target to maintain the same level of difficulty and effort. Transitory changes are shocks not expected to persist going forward. Managers will not include them in next year's target (Webb, Williamson, & Zhang, 2013).

Empirical studies on target setting examine rational expectations predictions and deviations from these predictions associated with organizational structures. In particular, the studies investigate the weights of past performance and the performance of comparable units on future targets, as well as how these weights vary with past performance relative to expectations, seniority, and organizational structure (Aranda, Arellano, & Davila, 2014; Bol et al., 2010; Leone & Rock, 2002). Ratcheting describes the positive relationship between the change in targets for the current year relative to the previous year's targets and last year's performance deviation, which is defined as the difference between last year's actual performance and targeted performance (Weitzman, 1980). Favorable performance deviations (performance above targets) are followed by upward target revisions (and vice versa, unfavorable deviations are associated with downward target revisions). Ratcheting levels depend on managers' assessment of the mix between permanent and transitory components of the deviation. Furthermore, aspirations have been argued to adapt at a slower rate than performance changes (Cyert & March, 1963). This speed of adaptation reflects different time perspectives in decision making (Greve, 2002) and affects performance; in the context of competitive markets, organizations with a slower speed of adaptation show better timing of strategic changes and subsequently better performance (Greve, 2002). Ratcheting can also affect the shape of the compensation, with lower ratcheting increasing the level of compensation in future periods (Leone & Rock, 2002). Attenuated ratcheting (Choi, Kim, & Merchant, 2012) refers to managers lowering ratcheting/speed of adoption to avoid

subordinates withholding effort when they reach the target (a phenomenon known as the ratchet effect) (Bouwens & Kroos, 2011). This finding is consistent with adaptive aspiration predictions (Lant, 1992) in which managers adapt aspiration levels at a slower rate than performance changes (Cyert & March, 1963).

Empirical evidence shows that ratcheting often explains more than 60% of the change in targets from one year to the next (Aranda et al., 2014; Leone & Rock, 2002). This finding is consistent with models of adaptive aspirations (Shinkle, 2012), which assume that managers "adjust aspiration levels in the direction of attainment discrepancy, consciously or unconsciously, with the aim of reducing the discrepancy between the actual performance level and the previous aspiration level" (Mezias, Chen, & Murphy, 2002: 1287).⁷ Furthermore, evidence in this literature suggests an asymmetric response to favorable and unfavorable deviations (Leone & Rock, 2002) that is consistent with the differences in learning from successes and failures (Kim & Miner, 2007).

Prior empirical research has also documented the relevance of peer units' performance in setting targets (Aranda et al., 2014), which is referred to as relative target setting (RTS). These units share a common production function (Albuquerque, 2009) that allows managers to infer performance expectations of the focal unit from the observation of its peer group. When peers are sister business units under the same parent company, RTS is similar to the concept of striving discrepancy, defined as "the gap between an organization's current performance and the performance of those organizations it desires to be like in the future" (Shinkle, 2012: 433). Moreover, managers expect to observe similar performance levels and regression to the mean among entities within the same peer group (Mezias et al., 2002). Thus, greater RTS—focal units performing above their peer group—has been found to be associated with smaller increases in targets (Aranda et al., 2014). The relevance of peers' experiences in setting the aspiration levels of the focal unit depends on the peers' comparability; the more comparable these units are, the more relevant peers become to target setting (Baum & Dahlin, 2007; Baum, Li, & Usher, 2000; Baum et al., 2005; Greve, 1998). The most comparable units are often units performing a similar task within the same company.

⁶ Managers' expectations are not necessarily the statistical expected value of the particular variable.

⁷ In this quote, the difference between the actual and expected performance is referred to as a discrepancy. In this paper, we refer to this concept as a performance deviation. The concept is also identified as a variance in managerial accounting textbooks.

Organizational Learning

Experiential learning translates the inferences from an organization's experience into knowledge and routines that systematically alter subsequent behaviors (Argote, 2013; Cyert & March, 1963; Huber, 1991; Levitt & March, 1988).⁸ Organizations improve their routines through selective repetition that reproduces the behaviors that are believed to drive performance through cause–effect relationships (Argote, 2013). Likewise, organizations improve their ability to separate relevant data from noise, thus enhancing signal-to-noise ratios in information-based routines (Banker & Datar, 1989). Experiential learning has been supported in a variety of settings, including learning curve models, innovation adoption (Kraatz, 1998), network-partner selection (Dekker & Van den Abbeele, 2010; Li & Rowley, 2002), and strategic renewal (Audia, Locke, & Smith, 2000; Crossan & Berdrow, 2003).

Vicarious learning refers to changes in the stock of knowledge associated with interorganizational learning (Beckman & Haunschild, 2002; Ingram & Baum, 1997), where learning accrues through observations of other organizations' experiences (Baum & Dahlin, 2007; Madsen, 2009). Observing the outcomes of comparable organizations helps infer their actions and cause–effect relationships, which can be extrapolated and adapted by the organization observing (Strang & Macy, 2001). Early research examined learning through the replication of successful routines (Burns & Wholey, 1993), which led to normative advice on the importance of “best practice” studies and “benchmarking” programs (Collins & Porras, 1994). Vicarious learning reflects the use of available external information. At the unit level, vicarious learning can trigger changes in routines that seek to imitate or avoid

these external observations. At the supervisory level, vicarious learning can support inferences about the behavior and performance expectations from observing comparable units. Vicarious learning complements experiential learning as long as it improves the informativeness beyond individual past experiences (Holmstrom, 1979). The degree of vicarious learning depends on the comparability of organizations. Evidence indicates that vicarious learning is enhanced when organizations are similar, in terms of both industry and geography (Kim & Miner, 2007).

Organizational learning is reflected in improving organizational practices and outcomes. The dynamics associated with the formation of aspirations, quantified through targets, capture how experiential and vicarious learning change this particular organizational practice.

Organizational Learning in Target Setting

Learning enhances managers' ability to distinguish between the permanent and transitory components of deviations. Experiential learning relies on past performance of the focal unit, whereas vicarious learning relies on the performance of peers. Both types of learning have been claimed to be important; in some instances, experiential learning has been found to be more effective than vicarious learning (Audia & Brion, 2007), whereas in other studies, vicarious learning dominates (Mishina, Dykes, Block, & Pollock, 2010). The relevance of vicarious learning is likely to be contingent on variables such as industry, financial health, and organizational size and age (Baum & Dahlin, 2007; Shinkle, 2012; Short & Palmer, 2003). For instance, in stable environments, managers give more weight to past performance in the formation of aspirations, whereas in dynamic environments, managers rely more on peer units (Lant, 1992; Lant & Shapira, 2008). Age in particular offers managers the opportunity to learn about an operational unit's business model and to better interpret and combine different sources of information over time. The dynamic nature of learning suggests that the attention allocated to different sources of information changes over the life cycle of the focal unit. Early in the focal unit's life cycle, managers have fewer data points from which to learn how to discern between permanent and transitory changes in performance; hence, managers rely on peer information to a larger extent. Relying on others' experiences can be a way for young organizations to overcome the uncertainty associated with early phases of the life cycle. However, for young organizations, there are strong limitations in terms of benefitting from the experience of other organizations regarding the

⁸ Organizational knowledge is the set of concepts and assumptions about the cause–effect relationships that the organization uses to form expectations about its activities (Huber, 1991) and to define the representation of its environment (Daft & Weick, 1984). This knowledge shapes the actions that its members take (Madsen & Desai, 2010). Organizational learning is the process of acquiring, translating, and enacting new knowledge through organizational routines (Nonaka, 1994; Polanyi, 1958; Walsh & Ungson, 1991; Weick, 1979) that systematically alter subsequent behavior (Argote & Miron-Spektor, 2011). This type of learning emerges from individuals and their intuition (Crossan, Lane, & White, 1999) but necessarily involves organizational routines as learning becomes institutionalized (Easterby-Smith, Crossan, & Nicolini, 2000). We interpret organizational learning as changes in managers' behavior rather than changes to organizational outputs and outcomes.

core aspects and principles of the business, the reason being limited comparability in terms of size, reputation, repertoire of strategic actions, and restricted capacity for assimilating others' experiences (Blettner et al., 2015). These limitations are less pronounced when peers are sister organizations, as long as the parent organization has established mechanisms for sharing information. As the focal unit matures, experiential learning crowds out vicarious learning and managers increasingly rely on their own performance to refine their mental model for each unit: "Decision makers may learn about a system given enough time, enough stability in the system, and unambiguous information" (Lant, 1992).

Thus, we expect relative target setting (RTS) to be more salient early in a unit's life cycle and to decrease in importance as managers shift to learning from past performance. These arguments lead to the following hypotheses:

Hypothesis 1. The relationship between change in targets and the current year's performance deviation is weaker for young units than for mature units.

Hypothesis 2. The relationship between change in targets and relative target setting is stronger for young units than for mature units.

Learning from Successful and Failed Performance

Early studies on experiential learning focused on learning from successes; researchers have only recently studied learning from failures (Chuang & Baum, 2003; Haunschild & Sullivan, 2002), differential learning from successes and failures (Baum & Dahlin, 2007), the magnitude thereof (Madsen & Desai, 2010), and concentration (Desai, 2015). Targets are often used as reference points to construct performance as either a success or failure (March & Simon, 1958). Performance below aspirations (failures) has been argued to lead to more changes (Shinkle, 2012), with important learning episodes derived from extreme failures (rare events) (Lampel, Shamsie, & Shapira, 2009; Madsen & Desai, 2010): "the desire to overcome a performance failure is stronger than the desire to extend success, so decision makers below the aspiration level accept more risks than decisions makers above aspiration levels" (Audia & Greve, 2006: 84). Failures question existing assumptions about cause-effect relationships, which forces organizations into non-local searches (Cyert & March, 1963; Weick & Roberts, 1993). Learning

from failure leads to a focus on outside organizations' performance. In contrast, success has organizations confirm their existing assumptions (Lant, 1992), reinforce their current behaviors and existing stocks of knowledge (Bromiley, Miller, & Rau, 2001), stimulate local searches, simplify decision making, avoid risky actions that can result in unfavorable deviations (March & Shapira, 1987), and ignore information that potentially conflicts with the shared schemata (Hayward, Rindova, & Pollock, 2004). These arguments suggest a greater focus on past performance after experiencing successful performance and on peer performance after experiencing failure.

Alternative arguments predict failures to be associated with less vicarious learning and successes to be associated with more experiential learning. Failure may result in stagnation (Blettner et al., 2015). In contrast, success leads to non-local explorative searches because of the organization's confidence in its own abilities and the resources available for new experiments (Lant et al., 1992; March & Shapira, 1992). Moreover, an organization's resource endowment allows managers to view minor failures as repairable gaps (Audia & Greve, 2006); large firms with considerable resources actually increase their risk in response to minor failures, whereas smaller firms, usually resource-constrained, reduce their risk taking. Similarly, R&D expenditures increase in response to sub-par performance (problemistic search) or excess resources (slack search) (Greve, 2003).

The asymmetry of responses to successes and failures thus becomes an empirical question. Moreover, these arguments can have different effects over the course of an organization's life cycle. Early on, failures are a threat to the survival of the organization; this threat is more severe for new operational units of an existing company where often the decision to close the unit is made at headquarters. In addition, failing to meet performance targets is likely to trigger search routines outside the unit and to reduce the relevance of past performance in setting targets. Failures in younger units lead managers to use external reference points as sources of information when setting targets. If this is the case, we expect the following:

Hypothesis 3. The relationship between change in targets and the current year's performance deviation is weaker for unfavorable performance deviations of young units than for those of mature units.

Learning from Large and Small Performance Deviations

Much about learning from failures has been examined within the context of extreme negative outcomes, such as companies going out of business or barely avoiding it (Ingram & Baum, 1997; Kim & Miner, 2007) and disasters (Madsen & Desai, 2010). For instance, “problemistic searches” are enhanced after extreme failures (Cyert & March, 1963; Simons, 1995). This evidence suggests that organizations’ reactions to performance deviations—and managers’ learning—depends not only on the sign of the deviation but also on its magnitude (Audia & Greve, 2006; Greve, 1998, 2003).

Research on the informational content of a unit’s own past performance for target setting extends this argument. The magnitude of the deviation is informative about the likelihood of permanent versus transitory components of the deviation. Permanent performance changes are associated with changes in the unit’s productivity; productivity changes often occur slowly. In contrast, large deviations are more likely to occur because of transitory shocks unrelated to changes in the production function.⁹ For instance, a drop in traffic when there are unexpected public works in front of the retail unit leads to a transitory performance decrease (until the works are finished). This set assumptions based informational content predicts larger deviations to be less informative for experiential learning.

The performance feedback literature makes similar predictions: “organizations emphasize learning from their own experience when performance is near aspirations, and emphasize learning from others’ experience when performance deviates from aspirations” (Baum & Dahlin, 2007: 369). Smaller losses lead to more effective experiential learning, triggering search routines to aid understanding of the causes of the losses and with less attention devoted to identifying the people responsible so that they can be held accountable. These circumstances facilitate information sharing instead of inspiring people to create excuses to protect themselves. For smaller deviations, the risk of exploring new routines

is perceived as unnecessary (Baum & Dahlin, 2007; Baum et al., 2005). The arguments predict the prevalence of experiential learning for small performance deviations and the prevalence of vicarious learning for large unfavorable deviations.

The foregoing arguments do not consider whether the indicated effects change across different information environments as captured in the age of the unit. Similar to the reasoning leading to the first three hypotheses, the relevance of these arguments is expected to vary over the life cycle of a unit. Managers’ models for young units are in flux, whereas they are much more established for mature units. Thus, learning opportunities from historical and peers’ performance information are likely to be more important for young units. In particular, large unfavorable performance deviations in young units will reinforce managers’ use of the performance of peer units as a more important reference point while lowering the weight that they give to performance deviations. The corresponding hypothesis is as follows:

Hypothesis 4. The relationship between change in targets and the current year’s performance deviation is weaker for large unfavorable performance deviations of young units than for those of mature units.

Cross-Learning Interaction

The focus on different reference points affects how managers interpret performance deviations (March & Shapira, 1992): “rather than shifting attention more toward historical or social aspirations, decision makers combine information on social and historical aspirations when interpreting performance feedback” (Baum et al., 2005: 543). Based on this observation, researchers have argued for a better understanding of how experiential and vicarious learning interact (Denrell, 2003; Levinthal & March, 1993). However, evidence of such cross-learning within organizations is scant (Baum & Dahlin, 2007; Crossan, Lane, & White, 1999; March, 1991; Schwab, 2007). In particular, the relevance of performance compared with that of peers may affect the interpretation of a unit’s performance deviation, instead of being two independent sources of information as prior hypotheses assume. For instance, a favorable deviation in a unit that is performing below its peers is likely to have a larger permanent component as the unit regresses back to its mean performance. Conversely, a favorable deviation together with a performance above that of the peer group is more likely to be caused

⁹ Interviews conducted in our research site indicate that managers believe this argument to be more characteristic of our particular research setting. For instance, the divisional manager indicated that public works can be so disruptive that a branch may have to temporarily close.

by a transitory shock and thus will not be incorporated into the next year's target. In such cases, managers can use experiential learning to evaluate the quality of their vicarious learning, and vice-versa.

The interaction is expected to be more useful early in an operational unit's life cycle as the company extrapolates from comparable units to interpret past performance. Later, managers have enough experience from the unit, and the reference point from peers' performance is thus less informative. Learning affects how managers use information, and thus we expect the following:

Hypothesis 5. The relationship between change in targets and relative target setting depends to a larger extent on the current year's performance deviation for young units than for mature units.

METHODS

Research Setting

We collect yearly data from 421 branches of the individual vacation division of a large European travel company over a four-year period. All of the branches are located in the same country. The company has five lines of business: hotel chains, receiving agencies, airlines, tour operators, and travel agencies. The travel agencies are further organized into four divisions: individual vacations, business travel, convention traveling, and conference organizing. During the period of study, the individual vacation division experienced significant growth, reaching revenues of €444 million (approximately 60% of the total of the travel agencies' business revenues) in 2006. The division is organized into branches that are divided over 13 regions.

The branches are responsible for commercializing travel products at the retail level. All branches sell the same product portfolio, use similar operational practices, have comparable marketing programs, and are of similar size and complexity. The combination of a period of expansion within a homogeneous network and heterogeneous environments provides a unique setting for examining organizational learning in information-based routines, such as target setting. Each branch operates as a profit center and receives a yearly target for the forthcoming year. The target is set for "guided sales," which are sales from other lines of business of the company (hotel rooms, plane tickets, etc.) and services from some suppliers. Once the target for guided sales is set, the rest of the income statement—total sales and the various components of expenses, such as selling expenses over sales—are set using a mathematical relationship determined at the division

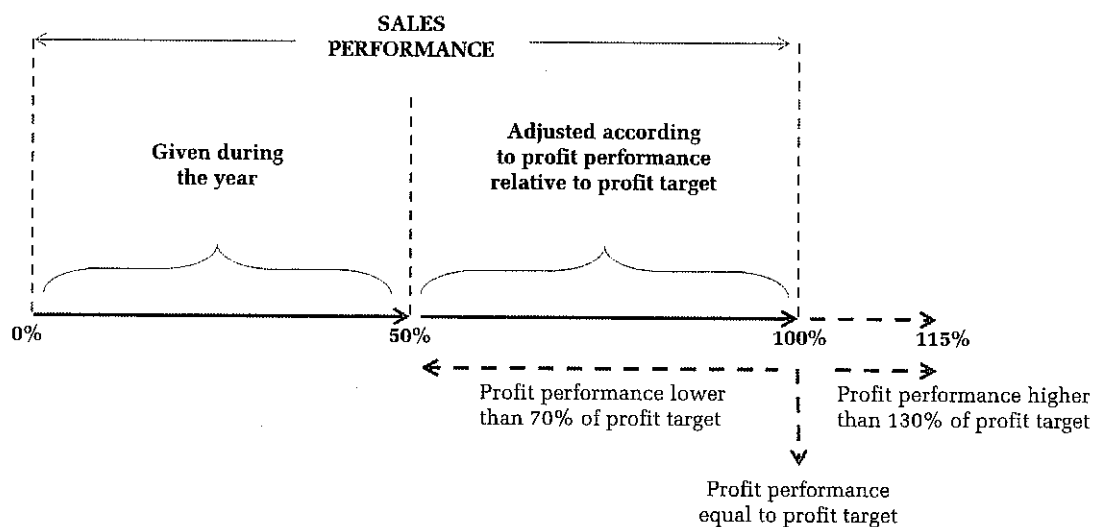
level. For instance, in 2006, guided sales were set to 76.8% of total sales; thus, fixing guided sales mathematically determined total sales and the rest of the income statement. The target setting process works as follows. The branch manager and the regional manager informally discuss targets for the coming year; the regional manager proposes a target for each branch in his/her region to the divisional manager. Based on the division's overall growth objectives, the divisional and regional managers review each branch's targets to make sure that the overall growth objective is met. Branch managers are then informed of their final targets for the coming year. This process is subjective rather than formula-based and integrates the different sources of information available to managers. These sources include their ongoing reports, visits, and conversations with branch managers throughout the year, which provides a detailed understanding of each branch's unique aspects. Regional and divisional managers also obtain information by comparing activities across branches and regions, industry trends, competitors' moves, local conditions, and discussions across divisions in the company. Thus, the target combines knowledge that is explicit to the various actors in the process as well as tacit knowledge that managers are not necessarily able to articulate but can reflect in the final target.

Targets are used for compensation purposes. Branch managers and other branch employees receive a bonus depending on the branch's performance relative to targets. Bonuses account for 10% to 20% of employee's salaries. Bonuses are distributed among branch employees according to their job titles. In other words, bonuses are determined at the branch level and are then allocated to employees. The branch manager receives the largest bonus. The bonus percentage is determined according to the following formula (Figure 1):

$$\text{Bonus} = \left[50\% + 50\% \times \left(I_p \times \frac{\text{profit performance}}{\text{budgeted profit}} \right) \right] \times \text{guided sales}$$

I_p takes a value of zero if the ratio of profit performance to budgeted profit is lower than 70%, one if the ratio is between 70% and 130%, and 1.3 times the inverse of the ratio to cap this part of the bonus at 130%. The first half of the bonus is distributed bimonthly and works much like commission does, as a percentage of guided sales that kicks in with the first sale. The other half is distributed at the end of the year. This second half has a floor at 70% and a cap at 130%. In between, the bonus also serves as a commission for guided sales, but the slope depends on the profit performance

FIGURE 1
Incentive System for Branches



relative to the profit target. If the profit does not reach 70% of the target, the second half of the bonus is lost, and the branch only receives a bonus of 50% of guided sales (the bimonthly part). If a branch profit exceeds 130% of its target, the second half of the bonus is 65% of guided sales ($50\% \times 130\%$) for a total bonus of 115% ($50\% + 50\% \times 130\%$) of guided sales. For instance, a branch that exceeds its profit target by 5% receives a total bonus of 102.5% of guided sales. The commission-like component is 50%, and the adjustment based on the profit target is 52.5% for a total of 102.5% ($50\% + 50\% \times 105\%$) of guided sales. In addition to the bonus, branches receive prizes and/or penalties based on non-financial objectives, such as internal audits, the quality of customer information in the database, discounts offered to customers, and bad debt expenses.

The division experienced a period of rapid growth, which provides two natural sub-samples: branches that have been operating for a few years and new branches. Thus, there is an opportunity to observe how managers use information as they learn about these new branches. All the branches belong to the same division, thus providing a homogeneous organizational context. The branches are similar to each other, with a comparable personnel structure, the commercialization of the same product portfolio, and access to the same resources from the company. The division groups the branches by geographical region. This organizational structure creates a natural set of branches that experience a comparable environment and that can be used as benchmarks for learning.

This particular research setting offers a unique opportunity for probing learning in target setting. The growth in the number of branches, their maturation process, and the availability of comparable branches offer fertile ground for examining how learning affects the use of different sources of information. Comparing how managers use information over the branches' life cycles allows this study to capture learning. A prior paper (Aranda et al., 2014) using this research setting showed how both past performance and relative performance evaluation were correlated with target setting. This evidence was required to then explore how learning affects the relevance of these two sources of information over time.

Data Description

The number of branches in the sample grew from 244 at the beginning of 2003 to 390 branches by the end of the fourth year.¹⁰ Table 1 provides

¹⁰ The total number of branches for which we have information at some point in time is 421. These are the branches for which we have data in 2003 (237) plus the number of branches opened (177) plus the number of branches closed in 2003 (not included in the 237 because they do not have actual end-of-year sales). Because our research specification requires at least one full year of targets and operations, we start tracking learning in the second year of each branch's life cycle. The specification does not capture the learning accrued during the first year, when learning is likely to be steeper.

TABLE 1
Descriptive Statistics for All Branches

Panel A: Construction of Full Sample

	Years				Total
	2003	2004	2005	2006	
Number of branches with end-of-year actual and budgeted guided sales	238	294	361	390	
Number of branches closed	7	4	11	9	31
Number of branches without budget for the previous year	1	60	78	38	177
Missing observation*				1	
Total number of observations per year**	237	234	283	351	1,105

Panel B: Age of Branches per Year

	Years				Total
	2003	2004	2005	2006	
Branches with two years of budgeted and actual sales (one observation for the budgeted sales revision)	34	1	60	78	169
Minus branches closed during the year			-2	-2	
Branches with three years of budgeted and actual sales	9	34	1	58	101
Minus branches closed during the year				-1	
Total number of young branches (branches with one or two target revisions)	43	35	59	133	270
Branches with more than four years of budgeted and actual sales	194	203	233	225	
Minus branches closed during the year		-4	-9	-6	
Total number of mature branches	194	199	224	219	836
Missing observation				1	
Total number of observations per year	194	199	224	218	835
Percentage of young branches	18.1%	15%	20.8%	37.8%	24.4%
Percentage of mature branches	81.8%	84.1%	79.1%	62.2%	75.6%

*The number of budgeted employees was missing for one mature branch in 2006.

**A branch-year is an observation if the branch has information on its budgeted and actual sales for the previous and current years.

descriptive background information. The significant growth rate is the result of a combination of the high rate of branch openings and the low rate of branch closings. For instance, 34 of the 238 branches in 2003 opened in 2002; in 2005, 78 branches opened and 11 closed. In total, 177 branches opened during the four-year period and 31 closed.¹¹ Of the branches that closed, 26 opened before and five opened after 2003. Thus, only five of the 177 branches that opened

during the observation period subsequently closed. One branch with two years of budgeted and actual sales in 2004 (first line Table 1, Panel B) was closed. Similarly, two out of the 60 branches with two years of data in 2005 were closed. Finally, two of the 78 branches with two years of data in 2006 were also closed.

The number of observations per year is the number of branches for which we have budgeted and actual guided sales for the current and the previous year. This set excludes branches that opened during the previous year and closed during the current year because they do not have a full calendar year for either the current or previous year's sales (Table 1, Panel A). For instance,

¹¹ The division manager mentioned two main reasons for closing a recently opened branch: a mistake in choosing the location or a mistake in the expected mix of customers.

at the end of 2004, there were 294 branches, 60 of which opened in 2003 and did not have a full calendar year for the previous year's sales. The total number of branch-years is 1,105 observations.¹²

A branch's age is the number of full years of operation. For instance, a branch that opened in 2003 is one year old by the end of 2004 (2004 is its first full year of operation). Panel B of Table 1 describes the age distribution of the branch network from 2003 through 2006. Branches that have been in operation for two to three years are described as young branches, and branches that have been in operation for more than three years are mature branches.¹³ One-year-old branches are not included because their previous year (the opening year) does not count as a full year. Of the young branches, 63% (169 out of 270) are two-year-old branches. The distribution of branches between the two groups remains relatively stable over time, showing expansion over that four-year period. We have 270 young branch observations and 836 mature branch observations.

The branches included in the study are grouped into 13 regions that are situated around large metropolitan areas.¹⁴ This territorial organization is common to the majority of companies in the sector, according to the managers interviewed. Headquarters are located in one of these regions. The four main regions have 70% of the mature branches and 67% of the young branches. The company is therefore expanding its business into regions where it already has a large presence. In addition, the level of competition in these four regions is high. If we rank the 13 regions using the number of travel agency branches per million people in the region, these four regions rank second to fifth, only after the region

where the headquarters is located, which occupies the first place.¹⁵

Variable Definition

Our dependent variable is the change in budgeted sales ($\Delta B_{i,t}$) for each period and each branch. Sales have also been used in previous literature to study how targets—aspirations—are set (Lant, 1992; Lant & Montgomery, 1987; Mezas et al., 2002). We define the variable as $\Delta B_{i,t} = (B_{i,t} - B_{i,t-1}) / B_{i,t-1}$ to account for the differences in branch size. $B_{i,t}$ is the budgeted guided sales for branch i in year t . This definition is also consistent with previous work on target setting (Bouwens & Kroos, 2011; Leone & Rock, 2002). The variable measures the increase or decrease in a branch's target relative to its previous year's target.

We use last year's actual guided sales minus the targeted guided sales as our measure of past performance deviation. We define the measure as $PD_{i,t-1} = (A_{i,t-1} - B_{i,t-1}) / B_{i,t-1}$, where $A_{i,t}$ refers to the actual sales for branch i in year t . In addition to a branch's past performance, managers also use the performance of comparable branches to infer the expected performance of a particular branch. We measure relative target setting ($RTS_{i,t-1}$) as follows:

$$RTS_{i,t-1} = \left[\frac{B_{i,t-1} / \text{employees}_{i,t-1}}{\left(\sum_{j=1}^n A_{j,t-1} / \text{employees}_{j,t-1} \right) / n} \right] \bigg/ \left[\left(\sum_{j=1}^n A_{j,t-1} / \text{employees}_{j,t-1} \right) / n \right]$$

n is the number of branches in branch i 's region. $RTS_{i,t-1}$ compares last year's expected performance for a particular branch with the actual average performance of the branches in its region. We normalize by employees to compare across branches with different numbers of employees. We use the expected performance ($B_{i,t-1}$) to eliminate idiosyncratic risks associated with the actual realization of performance. The average performance of branches

¹² We lose one observation because the budgeted number of employees was missing.

¹³ These two categories are based on discussions with company managers regarding the evolution and life cycle of branches. The findings are robust to defining young branches as only two years old. Because we need to have at least one target review, branches are at least two years old. This fact also reduces the potential effect of higher or lower than normal transitory shocks associated with the novelty effect. In certain industries, such as fast food, the initial demand can be above the normal demand as people try the concept, or lower than normal as they become accustomed to the concept. The divisional manager described branches as maturing over a three- to four-year period.

¹⁴ The language used in all regions and in headquarters is the same.

¹⁵ When we asked the managers why they were operating in the same regions as their competitors, we received the following answer: "Everybody is there, because business is there, and ... we had to be there, too."

in a region balances the individual branch risks.¹⁶ A positive RTS indicates a target (per employee) for the branch above its peers, whereas a negative value indicates a target (per employee) below peers.

Our control variables include the increase in resources available to branch managers. Branches have a commercial orientation such that the most important resources are people. An increase in the number of employees implies more available resources. Additional resources may also lead to more demanding targets. We measure these resources as the change in the number of budgeted employees from the previous year to the current year ($\Delta BEmp_{i,t}$). In our setting, decisions about the slots available at the branch level are made during the planning process. Our measure of the number of employees is estimated as the total number of hours divided by the work-load of a full-time employee. Because travel is a cyclical business, branches use part-time contracts during busy periods. To control for the changes in the level of competition, we measure the change in the number of competitors. An increase in competition may have a negative effect on targets because new entrants increase supply. We use regional-level data from the government statistics office. We measure the competition change as the change in the number of travel agency branches per million people in the region from the previous year to the current year ($\Delta Comp_{i,t-1}$). We also include two dummies to

control for changes in branch and regional managers ($\Delta Director_{i,t-1}$ and $\Delta Manager_{i,t-1}$, respectively). Regional managers accumulate experience and knowledge over time, and replacing them can affect target setting in the short run. In addition, different regional managers have different management styles and may be more stringent or lenient when compared with each another. Branch managers also have different styles and skills for motivating their employees.¹⁷ Finally, we include yearly dummies to control for time-related, company-wide effects.¹⁸

Table 2 provides sample statistics on the absolute values of variables to better visualize the research setting. Target "guided sales" increased over the study period from €748,818 to €944,547; actual "guided sales" also grew from €739,477 to €913,017. The percentage of "guided sales" to total sales increased over the period reaching a target level of 77% and an actual level of 78%. In total, 41% of the branches exceeded their target; in 2005, only 25% of the branches surpassed their objective.

In Table 3, Panel A reports the descriptive statistics for the full sample. The average increase in targets is 0.14 (ΔB). However, more than 25% of the branches have reduced their targets, whereas the upper quartile has increased its targets by 23%. Branches fail to meet their targets by 0.04 on average (PD). Only one-year-old branches have favorable performance deviations (not reported). After the third year, the percentage of branches with favorable performance deviations remains stable at approximately 40%. The *RTS* is positive, which again reflects targets that are higher than actual performances in a large number of branches. The average number of employees per branch was 2.74. Panels B and C provide the same descriptive statistics but group branches by age. Young branches show significantly larger target increases and larger standard deviations than mature branches. Hence, the distribution shifts to the left, with lower values for the standard deviation as branches age. The shape of the performance

¹⁶ This measure of relative target setting is referred to as relative target difficulty. An alternative way to measure this vicarious learning is to use a relative outcome that replaces expected branch performance with actual branch performance. Relative target difficulty is less noisy because it operates with expectations and excludes the noise term of the actual outcome of the individual branch. This noise term in the average performance of the branches in the region is much smaller because independent error terms cancel each other out. Both of these measures of relative target setting have a comparable correlation with $B_{i,t-1}$ at 0.35. Relative target difficulty has a correlation of -0.10 with $(A_{i,t-1} - B_{i,t-1})$, and relative outcome and $(A_{i,t-1} - B_{i,t-1})$ have a correlation of 0.50. Another advantage of relative target difficulty is that it captures easy versus difficult targets. In contrast, relative outcome captures good versus bad performers. We ran our models with relative outcomes. This formulation has a lower R-squared value, probably because of the noise associated with the actual performance, and the coefficients have higher *p* values. A third alternative for operationalizing relative target settings is to compare the branch's budget to the average budget of the region's branches. This alternative is referred to as relative expected performance. The results are consistent when using these alternative specifications.

¹⁷ There was only one change in regional managers in 2005. The company informed us that the manager had reached retirement age and was replaced by one of the people that had been working in his team for several years. During the sample period, there were eight changes in branch managers of mature branches.

¹⁸ Regional dummies are constant over time and are therefore included in the branches' fixed effects.

TABLE 2
Sample Statistics

(in €)	Number of observations	Average "Guided sales" per branch		Average percentage "Guided sales" to total sales per branch		Average number of employees per branch	Average performance deviation of "guided sales"	Percentage of branches that exceeded "guided sales" budget
		Budgeted (B)	Actual (A)	Budgeted (B/BR)	Actual (A/AR)		(A-B)	
Years								
2003	237	748,818	739,477	0.72	0.74	2.6	-9,341	0.46
2004	234	871,423	874,940	0.75	0.78	2.8	3,517	0.51
2005	283	959,451	867,491	0.77	0.78	2.9	-91,960	0.25
2006	351	944,547	913,017	0.77	0.78	2.9	-29,192	0.43
Average	1,105	890,899	856,125	0.75	0.77	2.8	-34,079	0.41

B is budgeted guided sales, BR is budgeted sales, A is actual guided sales, and AR is actual sales.

deviations (*PD*) is more compressed in mature branches. The standard deviation for young branches (0.25) is significantly higher than the standard deviation for mature branches (0.18). If deviations are split between positive and negative values, young branches also exhibit a significantly higher standard deviation.

Consistent with prior results on the weight of past performance on target setting, performance deviation (*PD*) is positively correlated with target changes (ΔB). This correlation is higher for mature branches. *RTS* is negatively correlated with target changes. This relationship reflects branches with targets that are tougher than those of their reference group, which means having a smaller increase in next year's target.

RESULTS

We test our hypotheses using a within-group fixed effect estimation¹⁹ with panel robust

¹⁹ The within-group estimator is the pooled ordinary least square (OLS) of the demeaned variables. We also adjust our measure of goodness of fit R^2 for fixed effects. Difference Generalized Method of Moments (GMM) includes lag variables as instruments to address potential additional endogeneity issues (Bascle, 2008; Roodman, 2009; Semadeni, Withers, & Certo, 2014); however, working with young branches with little past experience limits the option of using a difference GMM specification; branches with one of two years of operations lack the necessary lags in the explanatory variables. Our specification controls for time-invariant differences across branches as well as yearly division-wide variation. Furthermore, the results of the baseline model are robust to difference GMM specification.

standard errors to correct for serial correlation and heteroskedasticity. We assume the structure of the error term in our model to be $\varepsilon_{i,t} = \mu_i + v_{it}$; the two orthogonal components include the fixed effect,²⁰ or unobserved time-invariant heterogeneity across branches, μ_i , and idiosyncratic shocks, v_{it} . The explanatory variables are uncorrelated with the idiosyncratic component but can be correlated with the unobserved heterogeneity.

Our hypotheses predict a change in the managers' use of available information as they learn to interpret the branch's past performance and peers' performance. In particular, hypothesis 1 predicts an increase in the relevance of past branch performance (*PD*) over time as the managers learn the characteristics of each branch. Hypothesis 2 predicts a decrease in the relevance of the performance of comparable branches (*RTS*) over time as vicarious learning is replaced by experiential learning. We examine these predictions using the following baseline model, which includes controls for years (Model 2 of Table 4):²¹

$$\begin{aligned} \Delta B_{i,t} = & \alpha_0 + \lambda PD_{i,t-1} + \lambda_Y Y_{i,t-1} PD_{i,t-1} + \beta RTS_{i,t-1} \\ & + \beta_Y Y_{i,t-1} RTS_{i,t-1} + \alpha_1 \Delta Director_{i,t} \\ & + \alpha_2 \Delta Manager_{i,t-1} + \alpha_3 \Delta BEmp_{i,t} \\ & + \alpha_4 \Delta Comp_{i,t-1} + \varepsilon_{i,t} \end{aligned}$$

²⁰ The fixed effect in our setting includes factors such as the distance to headquarters, the region where the branch is located, the branch's culture, and the level of wealth of the surrounding neighborhood, which we assume does not change during the time span of our study.

²¹ We include the direct effect of the relevant dummies in the estimation of all models.

TABLE 3
Descriptive Statistics

Panel A: Full Sample

Variable	Mean	SD	Q1	Median	Q3	1	2	3	4	5	6
1. Target revision (ΔB)	0.14	0.31	-0.02	0.10	0.23						
2. Performance deviation (PD)	-0.04	0.20	-0.16	-0.04	0.08	0.51 **					
3. Favorable PD	0.14	0.15	0.05	0.10	0.19	0.55 **					
4. Unfavorable PD	-0.17	0.14	-0.24	-0.13	-0.06	0.11 **					
5. Relative target setting (RTS)	0.06	0.26	-0.09	0.05	0.20	-0.44 **	-0.13 **	-0.25 **	0.11 **		
6. Change in budgeted employees (ΔEmp)	0.06	0.23	0.00	0.00	0.13	0.32 **	0.23 **	0.20 **	0.15 **	0.27 **	
7. Change in competition ($\Delta Comp$)	0.05	0.04	0.01	0.04	0.08	-0.08 **	-0.08 **	-0.08	0.04	0.06 **	-0.06

$N = 1,105$ except for Favorable PD and Unfavorable PD; for these two variables, the numbers of observations are 462 and 643, respectively.

* $p < 0.05$

** $p < 0.01$; two-tailed test.

Panel B: Young Branches

Variable	Mean	SD	Q1	Median	Q3	1	2	3	4	5	6
1. Target revision (ΔB)	0.27	0.50	0	0.17	0.33						
2. Performance deviation (PD)	-0.03	0.25	-0.18	-0.03	0.09	0.40 **					
3. Favorable PD	0.17	0.21	0.05	0.11	0.19	0.55 **					
4. Unfavorable PD	-0.20	0.14	-0.27	-0.17	-0.10	-0.13					
5. Relative target setting (RTS)	-0.06	0.27	-0.20	-0.03	0.10	-0.64 **	-0.20 **	-0.37 **	0.18 **		
6. Change in budgeted employees (ΔEmp)	2.65	1.07	2.00	2.50	3.00	-0.37 **	0.06	-0.07	0.22 **	0.43 **	
7. Change in competition ($\Delta Comp$)	0.05	0.04	0.02	0.07	0.08	-0.11	-0.06	-0.16	0.15	0.09	-0.07

$N = 270$ except for Favorable PD and Unfavorable PD; for these two variables, the numbers of observations are 120 and 150, respectively.

* $p < .05$

** $p < 0.01$; two-tailed test.

Panel C: Mature Branches

Variable	Mean	SD	Q1	Median	Q3	1	2	3	4	5	6
1. Target revision (ΔB)	0.09	0.19	-0.03	0.09	0.21						
2. Performance deviation (PD)	-0.03	0.18	-0.14	-0.04	0.07	0.72 **					
3. Favorable PD	0.13	0.13	0.04	0.10	0.19	0.60 **					
4. Unfavorable PD	-0.14	0.11	-0.21	-0.12	-0.06	0.51 **					
5. Relative target setting (RTS)	0.12	0.24	-0.04	0.10	0.25	-0.23 **	-0.11 **	-0.11 *	0.03		
6. Change in budgeted employees (ΔEmp)	0.07	0.23	0.00	0.00	0.13	0.43 **	0.24 **	0.19 **	0.18 **	0.35 **	
7. Change in competition ($\Delta Comp$)	0.04	0.04	0.01	0.04	0.08	-0.10 **	-0.10 **	-0.06	0.01	0.08 *	-0.05

$N = 835$ except for Favorable PD and Unfavorable PD; for these two variables, the numbers of observations are 342 and 493, respectively.

* $p < 0.05$

** $p < 0.01$; two-tailed test.

TABLE 4
Experiential and Vicarious Learning in Target Setting

Variable	Coef.	Model 1	Model 2	Model 3	Model 4
Past performance deviation (PD)	λ		0.61 ***	0.55 ***	0.34 **
Young x PD	λ_Y		(H1) -0.35 **	0.08	-0.94
Unfavorable x PD	λ_U			0.07	0.31
Young x unfavorable x PD	λ_{YU}			(H3) -1.00 **	1.09
Relative target setting (RTS)	β		-0.45 ***	-0.44 ***	-0.43 ***
Young x RTS	β_Y		(H2) -1.20 ***	-1.10 ***	-0.97 ***
Large deviation (L) x PD	λ_L				0.48 **
Young x L x PD	λ_{YL}				(H4) 0.79
L x unfavorable x PD	λ_{LU}				-0.82 ***
Young x L x unfavorable x PD	λ_{YLU}				(H4) -3.09 ***
Constant	α_0	0.08 ***	0.18 ***	0.19 ***	0.21 ***
Change in branch's director	α_1	-0.30 ***	-0.29 ***	-0.30 ***	-0.29 ***
Change in regional manager	α_2	-0.01	0.01	0.02	0.02
Change in budgeted employees	α_3	0.30 ***	0.44 ***	0.43 ***	0.42 ***
Change in competition	α_4	0.41	-0.23	-0.20	-0.24
Dummy for young		0.46 ***	0.05	0.05	0.11
Dummy for unfavorable PD				-0.01	-0.03
Dummy for young x dummy for unfavorable PD				-0.12	-0.05
Dummy for L					-0.12 ***
Dummy for young x dummy for L					-0.04
Dummy for L x dummy for unfavorable PD					0.003
Dummy for young x dummy for L x dummy for unfavorable PD					-0.55 *
Branch fixed effects and year dummies		Yes	Yes	Yes	Yes
Within R^2		32.4%	74.6%	75.8%	77.39%
Adjusted R^2		28.8%	73.1%	74.3%	76.59%
Number of observations		1,105	1,105	1,105	1,105

* $p < 0.10$

** $p < 0.05$

*** $p < 0.01$; two-tailed test.

$Y_{i,t-1}$ is a dummy variable that takes a value of one for young branches leaving mature branches as the reference group. Thus, λ_Y and β_Y capture the incremental effect for young branches. A value of zero implies that the effect of the independent variables is the same for young and mature branches. Conversely, $\lambda_Y < 0$ and $\beta_Y < 0$ will support hypotheses 1 and 2, respectively. Given the definition of our Y dummy, the sum of λ and λ_Y measures the total weight of performance deviation for young branches. Similarly, β plus β_Y measures the weight of RTS for young branches.

Table 4 presents a first model with only control variables. Consistent with the relevance of performance deviation, we find (Model 2) a positive and significant coefficient for last year's deviation of 0.61. Thus, for each percentage point that performance deviates from last year's target, next year's target increases by 0.61 relative to last year's target. The magnitude of the coefficient is comparable to that reported in previous studies (Leone & Rock, 2002). The coefficient on performance deviation for young branches (Model 2: $\lambda_Y = -0.35$, $p < 0.05$) is significant,

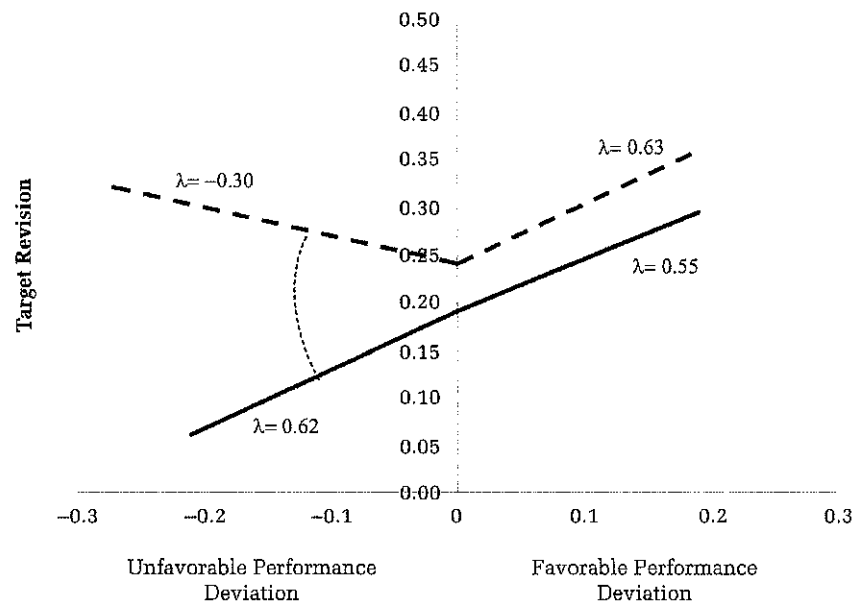
indicating that the weight of past performance in these branches is only 0.26 ($0.61 - 0.35 = 0.26$). Thus, managers assign less weight to past performance in young branches compared with their mature peers. As expected, relative target setting is negative (-0.45). Young branches have a significant negative coefficient for relative target setting ($\beta_Y = -1.20$, $p < 0.01$), as predicted (hypothesis 2). RTS is significantly larger in young branches ($-0.45 - 1.20 = -1.65$), a result consistent with the presence of vicarious learning.

The learning content of successes and failures has been argued to be different. Hypothesis 3 predicts this effect to affect the weight on past performance and peer performance over a branch's life cycle. Model 3 extends the baseline model to include two additional terms:

$$\text{Baseline Model} + \lambda_U N_{i,t-1} \times PD_{i,t-1} \\ + \lambda_{YU} Y_{i,t-1} \times N_{i,t-1} \times PD_{i,t-1} + \varepsilon_{i,t}$$

$N_{i,t-1}$ is a dummy variable that takes a value of one if last year's deviation was unfavorable ($PD_{i,t-1} < 0$) and

FIGURE 2
Response to Performance Deviation for Young and Mature Branches (Hypothesis 3)



Solid line represents the response for mature branches. The dotted line represents the response for young branches.

separates failure from success. The coefficient λ_U reflects the incremental weight on past performance for failures. The coefficient λ_{YU} captures the incremental weight of failures in young branches.

Consistent with hypothesis 3, the coefficient for young branches when performance deviations are unfavorable is significant and negative—the weight given for young branches (-0.30) is smaller than the weight given for mature branches ($0.62 = 0.55 + 0.07$). In contrast, the coefficient for favorable performance deviations is not significantly different for young branches ($0.63 = 0.55 + 0.08$) and mature branches (0.55) (Figure 2).

The response to successes and failures is not significantly different in mature branches, suggesting that the information content of the two events is comparable. In contrast, the response in young branches is asymmetrical. The coefficient for young branches that perform above target is 0.63 ($0.55 + 0.08$), whereas the coefficient for young branches that perform below target is -0.30 ($0.55 + 0.08 + 0.07 - 1.00$).²² Thus, in the early phases of the life cycle, managers appear to rely

on successes more than they do on failures when setting targets.

Hypothesis 4 examines learning for extreme performance deviations. It predicts a difference in the weight of information across branches' life cycles for larger unfavorable performance deviations. Model 4 incorporates the following terms into the baseline model:

$$\begin{aligned} & \text{Baseline Model} + \lambda_L L_{i,t-1} \times PD_{i,t-1} + \lambda_{YL} L_{i,t-1} \\ & \times Y_{i,t-1} \times PD_{i,t-1} + \lambda_{LU} L_{i,t-1} \times N_{i,t-1} \times PD_{i,t-1} \\ & + \lambda_{YLU} L_{i,t-1} \times Y_{i,t-1} \times N_{i,t-1} \times PD_{i,t-1} + \varepsilon_{i,t} \end{aligned}$$

$L_{i,t-1}$ is a dummy variable for large performance deviations, both favorable and unfavorable. The variable takes a value of one for the branch-year observations with a performance deviation value larger than the 87.5 percentile or smaller than the 12.5 percentile of the performance deviation distribution.²³

For large performance deviations, young and mature branches show different behaviors for unfavorable performance deviations. The coefficient for large unfavorable deviations is -1.84

²² $\lambda + \lambda_Y$ (the coefficient for successful young branches) is significantly different from $\lambda + \lambda_Y + \lambda_- + \lambda - \gamma$ (the coefficient for unsuccessful young branches) at the 5% level ($p = 0.04$).

²³ The results are similar for percentiles 10 and 90 and percentiles 15 and 85.

(0.80 + 0.48–0.82 + 0.79–3.09) for young branches and 0.31 (0.34 + 0.31 + 0.48–0.82) for mature branches. However, the difference across these coefficients for large favorable deviations is insignificant. Managers behave as if they perceive different learning opportunities for unfavorable versus favorable large deviations. Figure 3 plots the slopes of the response coefficients to large deviations for young and mature branches. Furthermore, young branches show significantly different behaviors for small and large unfavorable performance deviations ($p < 0.01$). Finally, large favorable performance deviations increase the next year's target by 0.48 ($p < 0.05$) more than smaller favorable performance deviations, regardless of the branch's life cycle.

Our last hypothesis (hypothesis 5) examines cross-learning between experiential and vicarious learning. We test this hypothesis by estimating the following model (Model 5):

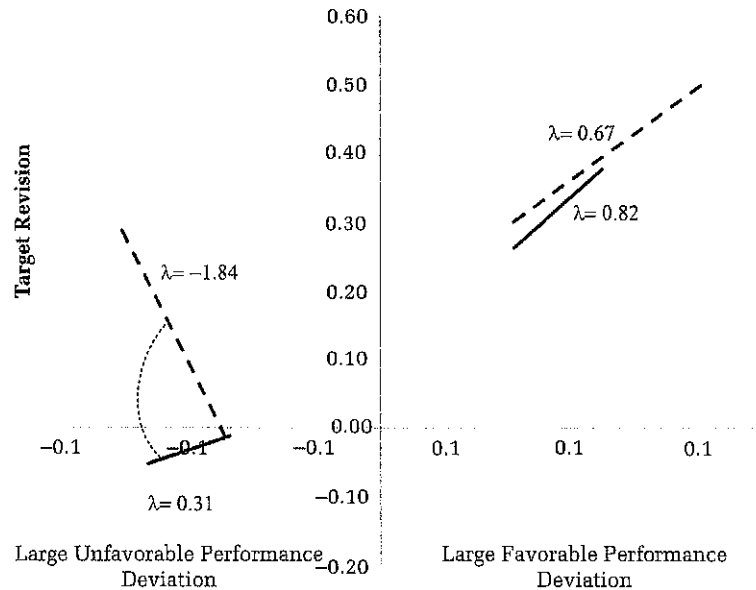
$$\text{Baseline Model} + \delta RTS_{i,t-1} \times PD_{i,t-1} + \delta_{YR} Y_{i,t-1} \times RTS_{i,t-1} \times PD_{i,t-1} + \varepsilon_{i,t}$$

In addition, given our prior results, we also study whether this relationship differs across favorable and unfavorable deviations using Model 6:

$$\begin{aligned} &\text{Baseline Model} + \delta RTS_{i,t-1} \times PD_{i,t-1} \\ &+ \delta_Y Y_{i,t-1} \times RTS_{i,t-1} \times PD_{i,t-1} \\ &+ \lambda_U N_{i,t-1} \times PD_{i,t-1} + \lambda_Y Y_{i,t-1} \times PD_{i,t-1} \\ &+ \delta_U \times N_{i,t-1} \times RTS_{i,t-1} \times PD_{i,t-1} \\ &+ \delta_{YU} Y_{i,t-1} \times N_{i,t-1} \times RTS_{i,t-1} \times PD_{i,t-1} + \varepsilon_{i,t} \end{aligned}$$

The results are reported in Table 5. The interaction between PD and RTS is not significant when deviations are not split into success and failure (Model 5). However, when the distinction between favorable and unfavorable performance deviations is included, the interaction is not significant in mature branches but is highly significant in young branches. The interaction effect of RTS in young branches with favorable performance deviations is $PD * (-0.26 - 1.09) = -1.35 * PD$ and $(-0.26 - 1.09 + 0.19 + 2.62) * PD = 1.46 * PD$ for unfavorable deviations, both significantly different from the behavior of mature branches ($-0.26 * PD$ and $-0.07 * PD$). Furthermore, the slopes are not significantly different from zero for mature branches; thus, past performance deviations do not affect the way in which managers incorporate information about the reference group in revising targets. Figure 4 graphs this interaction effect for

FIGURE 3
Response to Performance Deviation for Young and Mature Branches for Large Deviations (Hypothesis 4)



Solid line represents the response for mature branches. The dotted line represents the response for young branches.

TABLE 5
Cross-Learning Interaction

Variable	Coef.	Model 5	Model 6
Past performance deviation (PD)	λ	0.61 ***	0.54 ***
Young x PD	λ_Y	-0.41 **	-0.57 **
Relative target setting (RTS)	β	-0.47 ***	-0.44 ***
Young x RTS	β_Y	-1.19 ***	-0.75 ***
RTS x PD	δ	-0.14	-0.26
Young x RTS x PD	δ_Y	(H5) 0.002	(H5) -1.09 *
Unfavorable x PD	λ_U		0.08
Young x unfavorable x PD	λ_{YU}		-0.02
Unfavorable x RTS x PD	δ_U		0.19
Young x unfavorable x RTS x PD	δ_{YU}		(H5) 2.62 **
Constant	α_0	0.18 ***	0.19 ***
Change in branch director	α_1	-0.30 ***	-0.31 ***
Change in regional manager	α_2	0.02	0.02
Change in budgeted employees	α_3	0.43 ***	0.44 ***
Change in competition	α_4	-0.20	-0.16
Dummy for young		0.05	0.11
Dummy for unfavorable PD			-0.02
Dummy for young x dummy for unfavorable PD			-0.12
Branch fixed effects and year dummies		Yes	Yes
Within R^2		74.8%	77.0%
Adjusted R^2		73.1%	75.4%
Number of observations		1,105	1,105

* $p < 0.10$

** $p < 0.05$

*** $p < 0.01$; two-tailed test.

young and mature branches. Young branches exhibit a steeper slope in both panels.

DISCUSSION AND CONCLUSIONS

To affect organizational outcomes, organizational learning must change organizational practices, such as how aspirations are formed. Understanding how managers change their processing of information can help better model learning activities and complement prior research.

This study takes advantage of a unique research setting to examine how managers use different

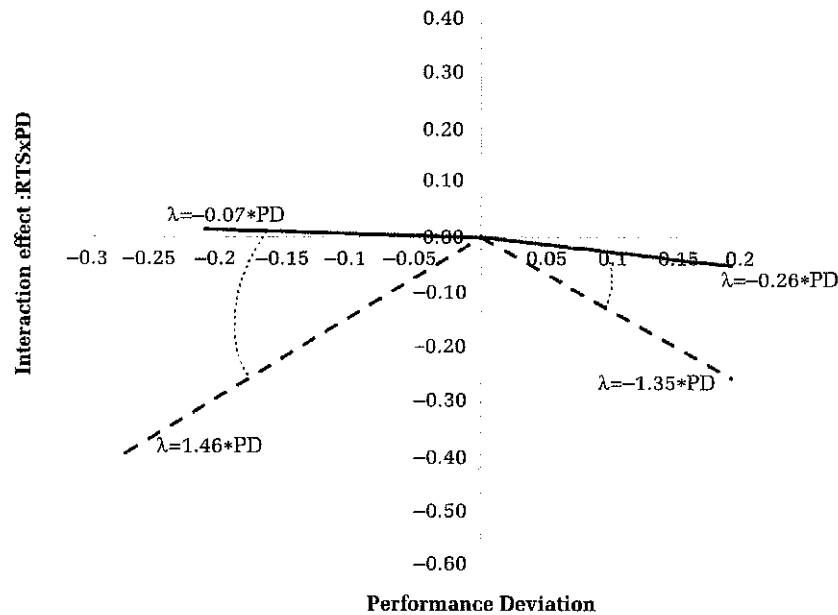
sources of information as they learn about the characteristics of new operational units. The case study design controls for potential confounding factors that appear when studying multiple organizations. We examine this effect of organizational learning by studying how targets that describe the aspirations of organizational units change over their life cycles. The study takes advantage of a period of rapid growth for an organization with a large number of new openings.

Consistent with prior research, the weight of past performance is positive and less than one, reflecting the fact that only a portion of the unexpected changes are permanent and, in turn, affect future performance; the weight of relative target setting is also negative, reflecting branches' regression back to the average performance of their reference groups. The results indicate the important learning effects on information use as operational branches mature. Early in the lives of these branches, managers rely more on peers' performance to set targets; as managers accumulate experience, they shift their use of information, relying to a larger extent on the unit's past performance. These findings suggest a change in the role of experiential and vicarious learning as branches mature.

Furthermore, we find that managers learn differently from successes and failures early in the lives of the new units, and this learning is affected by the magnitude of successes and failures. Thus, in our setting, learning from failures depends not only on the magnitude of the failure but also on the age of the units. This evidence is consistent with prior research comparing successes and failures (Madsen & Desai, 2010), but it extends it beyond extreme failures to routine failures and conditions it on the stage of the unit's life cycle. This paper also shows that managers behave as though they interpret past performance based on how the branch performed relative to its peers. The interaction between both sources of information in younger branches disappears in mature branches. This finding informs existing evidence on how different types of experience affect organizational learning (Baum & Dahlin, 2007), extending it to different types of information.

We model the target-setting process using fixed-effects specifications analyzing within-unit rather than between-unit variation. Consequently, we capture learning as reflected in managers' evolving use of different sources of information as a unit matures. The research design proxies learning as the differential use of information across the unit's life cycle, instead of using organizational outcomes as a proxy

FIGURE 4
Target Revision and Prior Performance Given Relative Target Setting (Hypothesis 5)



Solid line represents the response for mature branches. The dotted line represents the response for young branches.

for learning. Future research can use qualitative designs to capture the mechanics of this learning process. Although the use of information brings us closer to understanding the learning mechanisms, it lacks a direct relationship with organizational outcomes to assess the quality of learning. Furthermore, a single case study design does not allow for the effect of different organizational characteristics on the learning dynamics to be examined. This approach also limits conclusions to the particular characteristics of the research setting, such as its unique target-setting process, the compensation system used, the strategy of the division, and the replicability of the business model across operational units. Alternative organizational designs are likely to affect organizational learning. Similarly, we study a period of rapid growth, yet the learning dynamics might be different for organizations that face a period of crisis and must decide which units to close.

The study also contributes to the target-setting literature by highlighting the importance of learning as new units come into operation. Prior research on target setting has taken a static view (Bouwens & Kroos, 2011; Leone & Rock, 2002), implicitly assuming that organizations are in a stable situation and that whenever a new unit opens, it instantaneously reaches an equilibrium. Our findings

suggest otherwise. Target setting is a learning process in which managers constantly change their use of different sources of information as they learn. Consistent with the adaptive aspirations literature, we document this phenomenon in new units as they become operational. We extend this literature focusing on managers' use of information as capturing ex ante evidence of learning, rather than examining the consequences of learning on organizational outcomes. Going forward, the dynamic nature of target setting could be examined in other settings, such as economic periods that experience considerable changes or across economies with different levels of predictability.

Finally, the findings can be interpreted to reveal not only a learning process inherent in the evolution of an organization's operations but also managers' shifting attitudes toward learning over the course of units' life cycles. The shift from vicarious to experiential learning as operational units mature can reflect managers' attitudes rather than a change in learning opportunities. Over time, managers may disregard learning from peers in favor of learning from experience, even though the information environment does not merit such a shift. If this is the case, then managers are ignoring important information because their learning attitude changes.

The findings of this paper have several practical implications. First, they suggest that early in the life cycle of an organization or operational unit, vicarious learning plays a central role, and having other organizations as reference points and benchmarks can accelerate learning. Over time, vicarious learning loses much of its prominent role. Disentangling these explanations for learning dynamics is an interesting avenue for future research. A second practical implication is the complexity of the organizational learning process and its importance to present managers with diverse sets of information sources. The interaction between experiential and vicarious learning early in the life of operational units illustrates how learning benefits from combining different sources of learning. Finally, the paper reinforces theoretical predictions regarding differential learning from failures and successes and the need for organizations to critically assess their learning during periods of success.

REFERENCES

- Albuquerque, A. 2009. Peer firms in relative performance evaluation. *Journal of Accounting and Economics*, 48: 69–89.
- Aranda, C., Arellano, J., & Davila, A. 2014. Ratcheting and the role of relative target setting. *The Accounting Review*, 18: 1197–1226.
- Argote, L. 2013. *Organizational learning: Creating, retaining and transferring knowledge* (2nd edn). New York, NY: Springer.
- Argote, L., & Epple, D. 1990. Learning curves in manufacturing. *Science*, 247: 920–924.
- Argote, L., & Greve, H. R. 2007. A behavioral theory of the firm—40 years and counting: Introduction and impact. *Organization Science*, 18: 337–349.
- Argote, L., & Miron-Spektor, E. 2011. Organizational learning: From experience to knowledge. *Organization Science*, 22: 1123–1137.
- Audia, P. G., & Brion, S. 2007. Reluctant to change: Self-enhancing responses to diverging performance measures. *Organizational Behavior and Human Decision Processes*, 102: 255–269.
- Audia, P. G., & Greve, H. R. 2006. Less likely to fail: Low performance, firm size, and factory expansion in the shipbuilding industry. *Management Science*, 52: 83–94.
- Audia, P. G., Locke, E. A., & Smith, K. G. 2000. The paradox of success: An archival and a laboratory study of strategic persistence following a radical environmental change. *Academy of Management Journal*, 43: 837–853.
- Balasubramanian, N., & Lieberman, M. B. 2010. Industry learning environments and the heterogeneity of firm performance. *Strategic Management Journal*, 31: 390–412.
- Baum, J. A., & Dahlin, K. 2007. Aspiration performance and railroads' patterns of learning from train wrecks and crashes. *Organization Science*, 18: 368–385.
- Baum, J. A., Li, S. X., & Usher, J. M. 2000. Making the next move: How experiential and vicarious learning shape the locations of chains' acquisitions. *Administrative Science Quarterly*, 45: 766–801.
- Baum, J. A., Rowley, T. J., & Shipilov, A. V. 2005. Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, 50: 536–575.
- Banker, R. D., & Datar, S. M. 1989. Sensitivity, precision, and linear aggregation of signals for performance evaluation. *Journal of Accounting Research*, 27: 21–39.
- Bascle, G. 2008. Controlling for endogeneity with instrumental variables in strategic management research. *Strategic Organization*, 6: 285–327.
- Beckman, C., & Haunschild, P. 2002. Network learning: The effects of partners' heterogeneity of experience on corporate acquisitions. *Administrative Science Quarterly*, 47: 92–124.
- Belderbos, R., Van Olfen, W., & Zou, J. 2011. Generic and specific social learning mechanisms in foreign entry location choice. *Strategic Management Journal*, 32: 1309–1330.
- Blettner, D. P., He, Z.-L., Hu, S., & Bettis, R. A. 2015. Adaptive aspirations and performance heterogeneity: Attention allocation among multiple reference points. *Strategic Management Journal*, 36: 987–1005.
- Bol, J. C., Keune, T. M., Matsumura, E.M., & Shin, J.Y. 2010. Supervisor discretion in target setting: An empirical investigation. *The Accounting Review*, 85: 1861–1886.
- Bouwens, J., & Kroos, P. 2011. Target ratcheting and effort reduction. *Journal of Accounting and Economics*, 51: 171–185.
- Brass, D. J., Galaskiewicz, J. H. R., Greve, H. R., & Tsai, W. 2004. Taking stock of networks and organizations: A multilevel perspective. *Academy of Management Journal*, 47: 795–817.
- Bromiley, P., Miller, K. D., & Rau, D. 2001. Risk in strategic management research. In M. A. Hitt, R. E. Freeman, & J. S. Harrison (Eds.), *The Blackwell handbook of strategic management*: 259–288. Malden, MA: Blackwell.

- Bromiley, P., & Harris, J. D. 2014. A comparison of alternative measures of organizational aspirations. *Strategic Management Journal*, 35: 338–357.
- Burns, L., & Wholey, D. 1993. Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks. *Academy of Management Journal*, 36: 106–138.
- Choi, H. C., Kim, J., & Merchant, K. A. 2012. Firms' commitment to mitigate the ratchet effect under annual bonus plans with multiple performance measures. Working paper, University of Southern California.
- Collins, J. C., & Porras, J. L. 1994. *Built to last: Successful habits of visionary companies*. New York, NY: Harper Business.
- Chuang, Y. T., & Baum, J. A. C. 2003. It's all in the name: Failure-induced learning by multiunit chains. *Administrative Science Quarterly*, 48: 33–61.
- Crossan, M. M., Lane, H. W., & White, R. E. 1999. An organizational learning framework: From intuition to institution. *Academy of Management Review*, 24: 522–537.
- Crossan, M. M., & Berdrow, I. 2003. Organizational learning and strategic renewal. *Strategic Management Journal*, 24: 1087–1105.
- Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.
- Daft, R. L., & Weick, K. E. 1984. Toward a model of organizations as interpretation systems. *Academy of Management Review*, 9: 284–295.
- Davila, T., & Foster, G. 2007. Startup firms growth, management control systems adoption, and performance. *The Accounting Review*, 82: 907–937.
- Dekker, H. C., & Van den Abbeele, A. 2010. Organizational learning and interfirm control: The effects of partner search and prior exchange experiences. *Organization Science*, 21: 1233–1250.
- Denrell, J. 2003. Vicarious learning, undersampling of failure, and the myths of management. *Organization Science*, 14: 227–243.
- Desai, V. 2015. Learning through the distribution of failures within an organization: Evidence from heart bypass surgery performance. *Academy of Management Review*, 58: 1032–1050.
- Easterby-Smith, M., Crossan, M., & Nicolini, D. 2000. Organizational learning: Debates past, present and future. *Journal of Management Studies*, 37: 783–796.
- Fayol, H. 1916. Administration industrielle et generale. *Bulletin de la Société de l'Industrie Minérale*, 10: 5–164.
- Fisher, J. G., Maines, L. A., Pfeffer, S. A., & Sprinkle, G. B. 2002. Using budgets for performance evaluation: Effects of resource allocation and horizontal information asymmetry on budget proposals, budget slack, and performance. *The Accounting Review*, 77: 847–866.
- Garud, R., Dunbar, L. M., & Bartel, C. A. 2011. Dealing with unusual experiences: A narrative perspective on organizational learning. *Organization Science*, 22: 587–601.
- Greve, H. R. 1998. Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43: 58–86.
- Greve, H. R. 2002. Sticky aspirations: Organizational time perspective and competitiveness. *Organization Science*, 13: 1–17.
- Greve, H. R. 2003. A behavioral theory of R&D expenditures and innovations: Evidence from shipbuilding. *Academy of Management Journal*, 46: 685–702.
- Greve, H. R. 2007. Exploration and exploitation in product innovation. *Industrial and Corporate Change*, 16: 945–975.
- Greve, H. R. 2008. A behavioral theory firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, 51: 476–494.
- Haunschild, P. R., & Miner, A. S. 1997. Modes of interorganizational imitation: The effects of outcome salience and uncertainty. *Administrative Science Quarterly*, 42: 472–500.
- Haunschild, P. R., & Sullivan, B. N. 2002. Learning from complexity: Effects of prior accidents and incidents on airlines' learning. *Administrative Science Quarterly*, 47: 609–643.
- Hayward, M. L., Rindova, V. P., & Pollock, T. G. 2004. Believing one's own peers: The causes and consequences of CEO celebrity. *Strategic Management Journal*, 25: 637–653.
- Holmstrom, B. 1979. Moral hazard and observability. *The Bell Journal of Economics*, 10: 74–91.
- Huber, G. P. 1991. Organizational learning: The contributing processes and the literatures. *Organization Science*, 2: 88–115.
- Indjejkian, R., Matejka, M., Merchant, K. A., & Van der Stede, W. A. 2014. Earning targets and annual bonus incentives. *The Accounting Review*, 89: 1227–1256.
- Ingram, P., & Baum, J. A. 1997. Chain affiliation and the failure of Manhattan hotels, 1898–1980. *Administrative Science Quarterly*, 42: 68–102.
- Kaplan, R. S., & Norton, D. 2001. Transforming the balanced scorecard from performance measurement to strategic management: part I. *Accounting Horizons*, 15: 87–104.
- Kim, J. Y., Finkelstein, S., & Halebian, J. 2015. All aspirations are not created equal: The differential effects of historical and social aspirations on acquisition

- behavior. *Academy of Management Journal*, 58: 1351–1388.
- Kim, J. Y., & Miner, A. S. 2007. Vicarious learning from the failures and near-failures of others: Evidence from the U. S. commercial banking industry. *Academy of Management Journal*, 50: 687–714.
- Kraatz, M. S. 1998. Learning by association? Interorganizational networks and adaptation to environmental change. *Academy of Management Journal*, 41: 621–643.
- Lampel, J., Shamsie, J., & Shapira, Z. 2009. Experiencing the improbable: Rare events and organizational learning. *Organization Science*, 20: 835–845.
- Lant, T. K. 1992. Aspiration level adaptation: An empirical exploration. *Management Science*, 38: 623–644.
- Lant, T. K., Milliken, F. J., & Batra, B. 1992. The role of managerial learning and interpretation in strategic persistence and reorientation: An empirical exploration. *Strategic Management Journal*, 13: 585–608.
- Lant, T. K., & Montgomery, D. B. 1987. Learning from strategic success and failure. *Journal of Business Research*, 15: 503–518.
- Lant, T. K., & Shapira, Z. 2008. Managerial reasoning about aspirations and expectations. *Journal of Economic Behavior & Organization*, 66: 60–73.
- Leone, A. J., & Rock, S. 2002. Empirical tests of budget ratcheting and its effect on managers' discretionary accrual choices. *Journal of Accounting and Economics*, 33: 43–67.
- Levinthal, D., & March, J. G. 1981. A model of adaptive organizational search. *Journal of Economic Behavior & Organization*, 2: 307–333.
- Levinthal, D., & March, J. G. 1993. The myopia of learning. *Strategic Management Journal*, 14: 95–112.
- Levitt, B., & March, J. G. 1988. Organizational learning. *Annual Review of Sociology*, 14: 319–340.
- Li, S., & Rowley, T. J. 2002. Inertia and evaluation mechanisms in interorganizational alliance selection decisions. *Academy of Management Journal*, 45: 1104–1119.
- Madsen, P. M. 2009. These lives will not be lost in vain: Organizational learning from direct and vicarious experience with disasters and minor accidents in U.S. coal mining. *Organization Science*, 20: 861–875.
- Madsen, P. M., & Desai, D. 2010. Failing to learn? The effects of failure and success on organizational learning in the global orbital launch vehicle industry. *Academy of Management Journal*, 53: 451–476.
- March, J. G. 1991. Exploration and exploitation in organizational learning. *Organization Science*, 2: 71–87.
- March, J. G., & Shapira, Z. 1987. Managerial perspectives on risk and risk taking. *Management Science*, 33: 1404–1418.
- March, J. G., & Shapira, Z. 1992. Variable risk preferences and the focus of attention. *Psychological Review*, 99: 172–183.
- March, J. G., & Simon, H. A. 1958. *Organizations*. New York, NY: Wiley.
- March, J. G., & Sutton, R. I. 1997. Organizational performance as a dependent variable. *Organization Science*, 8: 698–706.
- Matsumura, E. M., & Shin, J. Y. 2006. An empirical analysis of an incentive plan with relative performance measures: Evidence from a postal service. *The Accounting Review*, 81: 533–566.
- Merchant, K. A., & Van der Stede, W. A. 2011. *Management control systems: Performance measurement, evaluation and incentives* (3rd edn). Upper Saddle River, NJ: Prentice Hall.
- Mezias, S. J., Chen, Y.-R., & Murphy, P. R. 2002. Aspiration-level adaptation in an American financial services organization: A field study. *Management Science*, 48: 1285–1300.
- Mishina, Y., Dykes, B. J., Block, E. S., & Pollock, T. G. 2010. Why “good” firms do bad things: The effects of high aspirations, high expectations, and prominence on the incidence of corporate illegality. *Academy of Management Journal*, 53: 701–722.
- Muehlfeld, K., Shabib, P. R., & Witteloostuijn, A. V. 2012. A contextual theory of organizational learning from failures and successes: A study of acquisition completion in the global newspaper industry, 1981–2008. *Strategic Management Journal*, 33: 938–964.
- Murphy, K. J. 2000. Performance standards in incentive contracts. *Journal of Accounting and Economics*, 30: 245–278.
- Nonaka, I. 1994. A dynamic theory of knowledge creation. *Organization Science*, 5: 14–37.
- Polanyi, M. 1958. *Personal knowledge: Towards a post-critical philosophy*. Chicago, IL: University of Chicago Press.
- Raju, J. S., & Srinivasan, V. 1996. Quota-based compensation plans for multiterritory heterogeneous salesforces. *Management Science*, 42: 1454–1462.
- Rerup, C., & Feldman, M. S. 2011. Routines as a source of change in organizational schemata: The role of trial-and-error learning. *Academy of Management Journal*, 54: 577–610.
- Roodman, D. 2009. How to do xtabond2: An introduction to difference and system GMM. *The Stata Journal*, 9: 86–136.
- Schildt, H., Keil, T., & Maula, M. 2012. The temporal effects of relative and firm-level absorptive capacity on interorganizational learning. *Strategic Management Journal*, 33: 1154–1173.

- Schwab, A. 2007. Incremental organizational learning from multilevel information sources: Evidence for cross-level interactions. *Organization Science*, 18: 233–251.
- Semadeni, M., Withers, M. C., & Certo, S. T. 2014. Organizational aspirations, reference points, and goals: Building on the past and aiming for the future. *Strategic Management Journal*, 35: 1070–1079.
- Shinkle, G. A. 2012. Organizational aspirations, reference points, and goals: Building on the past and aiming for the future. *Journal of Management*, 38: 415–455.
- Short, J. C., & Palmer, T. B. 2003. Organizational performance referents: An empirical examination of their content and influences. *Organizational Behavior and Human Decision Processes*, 90: 209–224.
- Simons, R. 1995. *Levers of control: How managers use innovative control systems to drive strategic renewal*. Boston, MA: Harvard Business School Press.
- Simons, R. 2000. *Performance measurement and control systems for implementing strategy*. Upper Saddle River, NJ: Prentice Hall.
- Sorenson, O. 2003. Independence and adaptability: Organizational learning and the long-term effect of integration. *Management Science*, 94: 446–463.
- Strang, D., & Macy, M. W. 2001. In search of excellence: Fads, success stories, and adaptive emulation. *American Journal of Sociology*, 107: 147–182.
- Wagner, S., Hoisl, K., & Thoma, G. 2014. Overcoming localization of knowledge: The role of professional service firms. *Strategic Management Journal*, 35: 1671–1688.
- Walsh, J. P., & Ungson, G. R. 1991. Organizational memory. *Academy of Management Review*, 16: 57–91.
- Webb, A., Williamson, M. G., & Zhang, Y. 2013. Productivity: Target difficulty, performance-based pay and outside-the-box-thinking. *The Accounting Review*, 88: 1433–1457.
- Weick, K. E. 1979. *The social psychology of organizing* (2nd edn). New York, NY: McGraw-Hill.
- Weick, K. E., & Roberts, K. H. 1993. Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 38: 357–381.
- Weitzman, M. 1980. The “ratchet principle” and performance incentives. *The Bell Journal of Economics*, 11: 302–308.
- Zollo, M., & Reuer, J. J. 2010. Experience spillovers across corporate development activities. *Organization Science*, 21: 1195–1212.



Carmen Aranda (maranda@unav.es) is professor of finance at the School of Economics and Business, University of Navarra (Spain). She received her PhD in accounting and finance from the University of Navarra. Her current research interests are in the areas of target setting, performance evaluation, and strategic alliances.

Javier Arellano (jarellano@unav.es) is professor of accounting at the School of Economics and Business, University of Navarra (Spain). He received his PhD in accounting and finance from the University of Navarra. His research centers on how companies set and revise targets, with a current focus on the use of subjective information in this process.

Antonio Davila (adavila@iese.edu) is professor at IESE Business School, University of Navarra. He received his doctorate from the Harvard Business School. His research interests include organizational learning and how companies integrate information from the events happening in the environment.



Copyright of Academy of Management Journal is the property of Academy of Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.