

Shared Authentic Leadership and New Venture Performance

Keith M. Hmieleski

Michael S. Cole

Texas Christian University

Robert A. Baron

Oklahoma State University

This study applied affective events theory (AET) as a framework for understanding the relationship between the shared authentic leadership of new venture top management teams (TMTs) and the performance of their firms. Results, based on a national (United States) random sample of new ventures, demonstrated a positive indirect effect of shared authentic leadership behavior on firm performance, an effect that operated through TMTs' positive affective tone. These findings contribute to entrepreneurship and strategic management literatures by illustrating that AET (a micro-level theory) is a conceptually relevant framework for understanding the impact of TMTs on firm performance (i.e., upper echelons theory and research). With respect to the leadership and organizational behavior literatures, the authors' results indicate that authentic leadership may be particularly beneficial when shared among team members.

Keywords: *entrepreneurship; leadership; positive organizational behavior; shared leadership; upper echelons*

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Corresponding author: Keith M. Hmieleski, M. J. Neeley School of Business, Texas Christian University, TCU Box 298530, Fort Worth, TX 76129, USA

E-mail: k.hmieleski@tcu.edu

There can be no happiness if the things we believe in are different from the things we do.

—Freya Madeline Stark

The above statement expresses a fundamental psychological principle—people feel uncomfortable when acting in ways that are inconsistent with their values and beliefs (Festinger, 1957). An extensive amount of research has demonstrated the negative consequences (e.g., experience of negative affect) that result from failing to behave in ways that are true to oneself (Harmon-Jones & Mills, 1999). Until recently, however, scholars have directed little attention to the potential benefits (e.g., experience of positive affect) that may result from actions that are in alignment with one's values and beliefs. Even less consideration has been given to how such behavior and its effects may extend beyond individuals—that is, to team or organizational levels of analysis (Hitt, Beamish, Jackson, & Mathieu, 2007). We address these issues in the current study by considering the relationships among *shared authentic leadership* behavior within new venture top management teams (TMTs; i.e., an ongoing, mutual influence process among team members that develops their positive psychological capabilities and promotes a positive climate consistent with members' values and beliefs; see Pearce & Conger, 2003; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008), *positive team affective tone* (i.e., the degree to which positive emotional reactions are consistently experienced among team members; see J. M. George, 1990), and *firm performance* (i.e., lagged revenue and employment growth).

The linkage among authentic behavior, emotions, and performance is a particularly relevant topic for investigation within the context of entrepreneurship because—within most economically developed countries—the act of launching a new venture is perceived as an authentic and intrinsically motivated undertaking by an individual or, in most cases, a team of founders (McMullen, Bagby, & Palich, 2008). Researchers have increasingly argued, for example, that founding teams create new ventures as a pathway to live a life consistent with their values and beliefs (A. C. Cooper & Artz, 1995). It is not clear, however, whether such an approach results in a sustained positive experience for new venture TMTs and high performance for their firms. Taken together, these issues lead us to ask the following: Does the creation of new ventures through actions that are consistent with the values and beliefs of TMT members lead to a positive affective experience for their teams and, therefore, to increased performance for their firms?

The primary aim of the present study is to address this theoretically and practically important question. Toward this end, we integrate work from the emerging field of positive organizational behavior (Avolio & Luthans, 2006; Luthans, 2002; Walumbwa et al., 2008) with recent evidence concerning the importance of emotions in the entrepreneurial process (Baron, 2008; Cardon, Wincent, Sing, & Drnovsek, 2009; Cardon, Zietsma, Saporito, Matherne, & Davis, 2005; Foo, 2011; Foo, Uy, & Baron, 2009) to test a set of theoretically derived hypotheses. Affective events theory (AET; Weiss & Cropanzano, 1996), a widely used framework for understanding the emotional linkages between leadership behaviors and team outcomes (Gooty, Connelly, Griffith, & Gupta, 2010), is used as a conceptual foundation with which to integrate these complementary literatures.

According to AET, leaders generate affective events that affect teams positively or negatively, shaping the intensity and form of their emotional responses—and, thus, influencing

their overall functioning and performance (Dasborough, 2006; Weiss & Cropanzano, 1996). AET suggests that emotions are an important intervening mechanism through which leadership ultimately influences the performance of teams (Pirola-Merlo, Härtel, Mann, & Hirst, 2002). We apply this logic by conceptualizing the positive affective tone of new venture TMTs as a generative mechanism linking shared authentic leadership behavior to firm performance.

Our study is designed to make several contributions. First, even though researchers have begun to consider how specific types of leadership displayed by entrepreneurs may affect their firm's performance (Ensley, Hmieleski, & Pearce, 2006; Ensley, Pearce, & Hmieleski, 2006; Hmieleski & Ensley, 2007), existing literature on new ventures has failed to consider the underlying mechanisms through which the leadership behavior of entrepreneurs ultimately influences firm performance. Recognizing that the relationship between leadership behavior and firm performance is likely to be indirect, we investigate whether TMTs' positive affective tone is such a mechanism. In so doing, we respond to Avolio, Walumbwa, and Weber's (2009) call to go beyond investigating leadership's main effects and to examine the generative processes through which the leadership behavior of top executives exerts its effects on firm performance. Thus, our study makes unique contributions in terms of both examining authentic leadership at the TMT level and linking this shared leadership style to firm performance.

Second, we maintain that the general trend to focus on the emotions of individual entrepreneurs has left an important gap in the entrepreneurship literature. Although emotions are known to have important implications for *individual* entrepreneurs (for a review, see Baron, 2008), no study has empirically examined the association between emotions collectively experienced by new venture TMTs and the performance of their firms. And yet, it is becoming increasingly apparent that affective reactions play a vital role in the social judgments of a team's members (Brief & Weiss, 2002), and without a "functioning 'community' at the top, an organization cannot effectively develop and exploit new knowledge" (Ling, Simsek, Lubatkin, & Veiga, 2008: 559). Indeed, consistent with AET (Weiss & Cropanzano, 1996), prior research has demonstrated that high-quality interactions among a team's members increase teams' positive affective tone, which, in turn, fosters performance-related outcomes (Pirola-Merlo et al., 2002; Sy, Côté, & Saavedra, 2005). Ashton-James and Ashkanasy (2008) have likewise proposed that AET is conceptually relevant for studying TMTs, arguing that their affective states can have a substantial influence on the performance of their firms. On this basis, we suggest empirical evidence regarding the importance of emotions for new venture TMTs is likely to yield meaningful insight into how such teams successfully launch and grow their firms.

Shared Authentic Leadership and Its Emergent Mechanisms

Central to authentic leadership behavior is an alignment or consistency between values and actions (Avolio & Luthans, 2006). For example, Eagly (2005: 460) has noted that "[a]uthentic leaders advocate goals that are grounded in shared values, and they intend that their actions promote goals that benefit the larger community." We build on this conceptualization

by suggesting that such authentic behaviors likewise occur within leadership teams but manifest as collective behavior. Following Pearce and Sims (2002), who have modified other leadership styles (e.g., transformational, transactional, empowering, directive, aversive) to reflect shared behavior, we shift the concept of authentic leadership from a vertical perspective (i.e., behavior stemming from a formally appointed leader) to a shared or distributive view (i.e., behavior shared among new venture TMT members). By taking a shared view of authentic leadership, we follow an increasingly popular business practice, wherein leadership responsibilities are distributed among a team's members (Day, Gronn, & Salas, 2004; Ensley, Hmielski, & Pearce, 2006).

Hence, we theorize that shared authentic leadership originates within individuals but manifests as a TMT-level property through members' common experiences, mutual interactions, and attraction-selection-attrition processes. Our conceptualization of shared authentic leadership is consistent with what Klein and Kozlowski (2000) have described as a *shared team property* (alternatively known as a *referent-shift consensus* model; Chan, 1998). In grounding authentic leadership within this literature on collective phenomena, we assume that shared authentic leadership differs in structure but not in function from its individual-level parent construct (cf. Morgeson & Hofmann, 1999). Authentic leadership behavior is functionally equivalent in that it performs the same theoretical function across different levels of analysis; that is, shared authentic leadership references the same content, has the same meaning, and shares the same nomological net as the individual-level form of authentic leadership. Conversely, the authentic leadership concept differs in structure insofar as it manifests in markedly distinct ways when viewed as stemming from an individual rather than from a team. Although authentic leadership enacted by individuals manifests at the intraindividual level via psychological processes, shared authentic leadership emerges at the TMT level via mutual dependence and interindividual interaction. This emergence process occurs because individuals work within bounded contexts and, thus, encounter homogenous circumstances that lead to shared interpretations and collective response tendencies (Klein & Kozlowski, 2000). For example, social information processing theory maintains that the social context influences TMT members' conscious expectations of their own behavior (Salancik & Pfeffer, 1978). In addition, TMT members utilize cues from their social environment to determine the extent to which authentic actions represent appropriate leadership behavior. These cues originate as norms established by founding firm members and are reinforced through active socialization, as well as in the behavior of other TMT members.

According to attraction-selection-attrition (ASA) theory (Schneider, 1987), three additional mechanisms may help to explain how authentic leadership emerges as a shared team property, particularly within startups. First, it seems reasonable to assume that individuals will be attracted to join a given new venture TMT to the extent that they view its members as being similar in terms of interests and core values (A. C. Cooper & Artz, 1995). Evidence for this reasoning is shown in research demonstrating that new ventures are often cofounded by friends and/or family members (Boeker & Wiltbank, 2005; Schulze, Lubatkin, & Dino, 2003). Second, new TMT members are often selected on the basis of comparable knowledge, skills, abilities, and social connections that closely parallel those of long-standing (or founding) members (Ruef, Aldrich, & Carter, 2003). Finally, over time, members of new

venture TMTs who do not mesh with other team members are likely to leave the firm (Baron, 1998). Taken together, both social information processing and ASA theory suggest that individual members' authentic leadership behavior is likely to manifest as a shared or emergent phenomenon that is common to all TMT members.

Rationale for the Present Conceptual Scheme

Researchers have long recognized that leaders are able to arouse strong positive feelings in their followers (Dasborough & Ashkanasy, 2002; J. M. George, 2000), which—in turn—favorably influence their work attitudes and behaviors (Gooty et al., 2010; McColl-Kennedy & Anderson, 2002). Thus, consistent with AET (Weiss & Cropanzano, 1996), past research demonstrates that positive emotion serves as an intervening mechanism between leader behavior and performance-related outcomes at multiple levels of analysis (Elfenbein, 2007; Pirola-Merlo et al., 2002). Importantly, Ashton-James and Ashkanasy (2008: 16) have recently theorized that AET may be a particularly fitting framework for upper echelons research. They explain that it is important to understand how workplace events affect the affective states of TMTs as these emotional reactions are likely to impinge on strategic-management-related decisions and behaviors. In fact, Ashton-James and Ashkanasy go on to note that “strategic management decision-making involves more, rather than less affect than decisions made at lower levels in the organizations, where decisions are likely to be less complex and less risky.” Hence, it seems that “extending AET to the group level is a worthwhile endeavor and one that can be furthered in subsequent research” (Pirola-Merlo et al., 2002: 575). Moreover, researchers have acknowledged for quite some time that psychological theories may be particularly insightful for examining the mechanisms through which top management influences firm performance (Staw, 1991).

In contrast to the current study's focus on linking TMTs' authentic leadership behavior and firm performance, prior authentic leadership research has predominately focused on how the behavior of individual or appointed leaders relates to the job-related outcomes of their subordinates (Jensen & Luthans, 2006; Walumbwa, Luthans, Avey, & Oke, 2011). This focus within the authentic leadership literature has occurred despite the fact that the degree of complexity and uncertainty faced by modern organizations increasingly requires that leadership be shared among team members (Morgeson, DeRue, & Karam, 2010; O'Toole, Galbraith, & Lawler, 2003). Moreover, and of particular relevance to the current study, the need for shared leadership is critical for new venture performance (Ensley, Hmieleski, & Pearce, 2006). Despite the predominant focus of vertical leadership within the literature, researchers working in the area of authentic leadership have noted that there is likely to be great value in studying this leadership style at the team level. For example, Walumbwa et al. (2008: 16) indicate that their individual-level conceptualization of authentic leadership “is not intended to rule out the potential for dyadic, group, or organizational levels of analysis for a type of ‘collective’ authentic leadership in the future.”

On balance, both theory and empirical research suggest that shared authentic leadership behavior is an emotive stimulus that invokes strong positive emotions, which are collectively experienced by team members. These positive affective reactions have beneficial effects for

the functioning and effectiveness of TMTs (Ashton-James & Ashkanasy, 2008). For TMTs leading new ventures, such positive affective reactions should enhance their effectiveness—which will be reflected in the performance of their firms (Chandler, Honig, & Wiklund, 2005; Ensley, Hmielski, & Pearce, 2006). In the following sections, we build on AET (Weiss & Cropanzano, 1996) to advance a model depicting positive TMT affective tone as an intervening mechanism linking TMTs' shared authentic leadership behavior to their firm's performance.

Theoretical Development and Hypotheses

Linking Shared Authentic Leadership to Positive Team Affective Tone

Drawing on AET (Weiss & Cropanzano, 1996) and research that describes leadership as an “emotion laden process” (J. M. George, 2000: 1046), we predicted that shared authentic leadership will increase TMTs' *positive affective tone*. According to J. M. George (1990), positive team affective tone represents the consistent or homogenous experience of positive emotions (e.g., excitement, inspiration) within a team; thus, for our purposes it refers to the collective experience of positive affect at the TMT level of analysis. Our approach in terms of considering the relationship of this concept with authentic leadership appears particularly appropriate when considering the arguments of Avolio, Gardner, Walumbwa, Luthans, and May (2004), who note that the majority of contemporary leadership theories focus on the more cognitive aspects of leadership and have largely ignored affective processes. They explain that authentic leaders act in accordance with deep personal values and convictions, which helps them to build credibility and win the respect and trust of constituents. In this respect, when a team's members display authentic leadership behavior, this enactment evokes positive feelings within both themselves and other team members (Ilies, Morgeson, & Nahrgang, 2005). Furthermore, authentic leadership behavior elicits positive emotions that tend to be “high in arousal” insofar as they trigger intense emotional reactions and provide a motivational drive to act, as opposed to alternative emotions that are positive in valence but “low in arousal” and thus lead to more quiescent reactions from individuals (Tangney, Stuewig, & Mashek, 2007).¹

Following research that casts leaders as “climate engineers” (Naumann & Bennett, 2000), we view leaders' behaviors and group interactions as contributing to team members' shared perceptions. For example, Sy et al. (2005) have affirmed that leaders influence the collective emotions of teams through the same affective events that influence individuals. Their results suggest that shared authentic leadership is likely to instill a positive affective tone within TMTs, much as Ilies et al. (2005) have argued that authentic leadership elicits positive emotions among individual followers. Overall, it therefore seems reasonable to construe shared authentic leadership behavior as an ongoing series of favorable events that will engender strong positive emotions among a TMT's members.

Hypothesis 1: Shared authentic leadership behavior within new venture TMTs will be positively related to positive team affective tone.

Linking Positive Team Affective Tone to Firm Performance

We anticipate TMTs' positive affective tone will provide a "motivational force" that focuses members on their tasks (Tangney et al., 2007: 347) and, thereby, increases firm performance (Ashton-James & Ashkanasy, 2005, 2008). Of particular importance, we anticipate that TMTs experiencing high levels of positive affective tone will enact what Fredrickson (2001, 2003) has referred to as a "broaden-and-build" phenomenon. This reasoning suggests that positive emotion expands teams' thought-action repertoires and builds resources by widening the array of available behaviors. Broadened activities include the urges to be creative, to explore, to assimilate information from disparate sources, and to grow. Thus, positive team affective tone should encourage longer term adaption (i.e., approach rather than avoidant behavior) and a willingness to engage in novel, varied, and exploratory tasks (Fredrickson, 2003). Consequently, the broaden-and-build phenomenon logically suggests that TMTs experiencing relatively high levels of positive affective tone are better equipped to attain high performance for their firms. Empirical evidence supporting the broadening hypothesis has been reported by several team-level studies; for instance, positive affect tone has been shown to have beneficial effects on teams' persistence, effort, and both task performance and prosocial behavior (Barsade & Gibson, 2007; J. M. George, 2000; Sy et al., 2005). As an example, results from a laboratory study conducted by Grawitch, Munz, and Kramer (2003) found that teams induced to experience positive affective tone focused on achieving their assigned task, whereas teams in a negative affective tone condition focused more on intragroup relations. Similarly, results of a field study by Losada and Heaphy (2004) demonstrated that high-performing teams are characterized by substantially higher positive-to-negative emotion ratios, as compared to medium- or low-performing teams.

As discussed above, the present research focuses on the collective experience of positive emotion because it is crucial for daily functioning and intragroup cooperation (Barsade & Gibson, 2007). We note, however, that negative emotions serve a vital role in response to survival situations (for a review, see Elfenbein, 2007). In this respect, negative emotions function as a warning within teams that something is amiss, providing a motivational stimulus to resolve a problem. Even though this mobilization process can focus teams' resources toward solving a problematic situation (e.g., "rallying the troops"), evidence suggests that teams become controlled by their negative emotional state and, thus, redirect behavior from purposeful goal pursuit to "fixing" their negative feelings. For example, Cole, Walter, and Bruch (2008) have demonstrated that negative emotions foster "control precedence" within teams and reduce their overall performance. Moreover, exposure to work-related demands or circumstances that tend to interfere with teams' work achievement is known to deplete the psychological resources of team members—causing decreased motivation and increased withdrawal behavior (Pearsall, Ellis, & Stein, 2009). In sum, both theoretical arguments and empirical evidence align to suggest that, with respect to the ability of new venture TMTs to lead their firms through the initial stages of development and growth, the long-term benefits of positive affective tone far exceed any potential short-term gains associated with negative affective tone.

Hypothesis 2: Positive affective tone of new venture TMTs will be positively related to the performance of their firms.

The Indirect Effect of Shared Authentic Leadership on Firm Performance

Morgeson et al. (2010: 29) have recently suggested that there is little empirical research that “directly assesses the mediational mechanisms” through which shared or team leadership affects team outcomes. At the same time, a review of the literature by Gooty et al. (2010) suggests that AET has been invaluable to leadership scholars seeking to understand the relationship between leaders’ behavior and performance-related outcomes. Fundamental to AET is that it gives “primary emphasis to the role of events as proximal causes of affective reactions and then as more distal causes of behaviors . . . through *affective mediation*” (Weiss & Cropanzano, 1996: 31, emphasis added). In addition, there is substantial empirical evidence supporting this theoretical framework at the individual and team levels of analysis. What is missing, we argue, is an integration of AET with research examining how shared leadership within TMTs relates to firm performance (i.e., an upper echelons approach; Hambrick, 2007; Hambrick & Mason, 1984). AET offers a framework that researchers may draw on to illuminate the sequence of events through which shared leadership within TMTs relates to firm performance.

Hence, as we reasoned above, conceptual considerations suggest that shared authentic leadership is a salient team characteristic that increases TMTs’ positive affective tone; furthermore, these positive affective reactions should encourage creativity, exploratory activities, and growth from a TMT’s members. As a result of this broaden-and-build phenomenon (i.e., enhanced thought-action repertoires), TMT members are more likely to effectively function as a unit, and, by extension, their firm’s performance is expected to benefit. With regard to this latter point, Staw (1991: 807) has observed that the top management of new ventures “are not mere agents of organizations, but instead exert control over them.” Furthermore, Ashton-James and Ashkanasy (2008) have noted that the work of top management is not a purely rational process but, rather, is infused with emotion. In keeping with this logic, our integrative framework argues that shared authentic leadership, as an ongoing series of affective events, has a positive indirect effect on new venture performance through positive team affective tone.

Hypothesis 3: Shared authentic leadership behavior within new venture TMTs will be indirectly (positively) related to firm performance through the positive affective tone of the team.

Method

Data Collection Procedures

We drew a national (United States) stratified random sample of 2,000 new ventures from Dun and Bradstreet’s Market Identifiers Database. To be included in our sample, identified firms were required to have been in business for three years or less and employ four or more

persons. Dun and Bradstreet compiles what is considered to be the most exhaustive database of young firms founded in the United States. For example, to create a business credit record, the majority of new ventures file for a DUNS number with Dun and Bradstreet. Companies then use this business credit record to evaluate whether or not to conduct business with one another (e.g., whether to sell, lend money, partner, or lease equipment to a company).

A personalized research packet containing a solicitation letter, our survey, and a prepaid business reply envelope was sent to the CEOs of the sampled firms. We limited the survey to CEOs because they are most knowledgeable about issues such as TMT processes and firm performance (Simsek, Veiga, Lubatkin, & Dino, 2005). Mailings to 484 firms were returned as nondeliverable; this was anticipated, given Dun and Bradstreet reports 20% of firms in their database change address each year. We received a total of 181 completed surveys, with each survey reflecting a distinct firm. Responses from two of these firms were not included in subsequent analyses because primary informants indicated that they were the only member of the TMT. This resulted in a firm response rate of 11.8%, which is in alignment with past studies using similar samples of top management (Ling et al., 2008). Hambrick, Geletkanycz, and Fredrickson (1993) observed that a 10% to 12% response rate is typical for mailed surveys to top executives, and Cycyota and Harrison (2006) explain that over time it is becoming only more difficult to gain participation from such individuals.

Following a key informant sampling procedure used by Datta, Guthrie, and Wright (2005), once responses were received from our “primary” informants (i.e., the CEOs), we mailed these respondents additional survey packets to distribute to other TMT members to act as “secondary” informants (also see Smith, Collins, & Clark, 2005). From this follow-up request, we received multiple secondary responses from 35 firms: two responses from 18 firms, three responses from 13 firms, and four responses from 4 firms. We used these secondary responses in conjunction with the CEO (primary) data to calculate interrater agreement (IRA) indices for each of the constructs measured in the study. Results suggested high levels of rater agreement, even after controlling for respondent biases.² We therefore concluded that the secondary respondents were making essentially the same ratings as the primary respondents (i.e., the CEOs). Given that high IRA references greater interchangeability among raters (Kozlowski & Hattrup, 1992), we can assume there is no systematic bias in the direction or magnitude of the CEOs’ responses in comparison to those of other TMT members. Consequently, the CEO data are appropriate for testing study hypotheses.³

Sample

A typical CEO respondent (i.e., a primary informant) was the firm’s founder (67%), male (76%), with an average age of 48 years. A representative firm was two years old, with an average of 51 employees. The sample is broad in scope, with respondents’ current businesses being located in 42 different states and with primary operations in 97 different industries (as classified by four-digit North American Industry Classification System codes). The states with the highest number of respondents were, as expected, the two most populated states (Texas: $n = 33$; California: $n = 23$). Furthermore, no more than six firms were from the same industry. Thus, our national sample is diverse and does not appear to oversample firms in

any one industry or geographic location. In addition, we compared available characteristics, including gender of the CEOs, firm age, revenue, and number of employees, for both responding and nonresponding firms. In each case the empirical comparisons were equivalent, indicating our sample is representative of the population from which it was drawn.

Measures

Unless otherwise noted, a 5-point response scale was used for all measures, with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Shared authentic leadership ($\alpha = .90$). Ten items were adapted, with permission, from the work of Avolio and Luthans (2006). Although Avolio and Luthans created an initial measure of vertical authentic leadership at the Gallup Leadership Institute, it was later revised and published by Walumbwa and colleagues (2008). Examples of copyrighted items can be found on Mind Garden's website.⁴ We modified items so as to apply a referent-shift composition model (Chan, 1998) that captures authentic leadership behaviors stemming from the team (as a whole), as opposed to a single individual (Pearce & Sims, 2000).

Positive team affective tone ($\alpha = .91$). Three items were adapted from the Job-Related Affective Well-being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000). We again modified the referent to reflect the team as a whole. The three items reflect pleasant high arousal emotions. An example item is, "Team members feel inspired at work." High scores represent the degree to which team members consistently experienced positive emotional reactions.

Firm performance. Lagged (one-year) performance data were obtained from Dun and Bradstreet. Recognizing that new venture growth is commonly treated as the most critical indicator of performance for young firms (Brush & Vanderwerf, 1992; Danson, 1999), we collected data on two growth metrics: revenue growth and employment growth. Both indices were calculated as the average annual revenue and employment growth over the one-year period immediately following collection of the survey data; this strategy was believed to enhance our ability to draw causal inferences from the results. Furthermore, we followed previous work (Baum & Wally, 2003; Hmieleski & Baron, 2008) and created an overall firm performance measure by standardizing and then summing the revenue and employment growth metrics for each firm. This approach provided a more parsimonious presentation of our findings. And, notably, the statistical significance and pattern of results were equivalent when treating each growth outcome as a separate indicator of performance.⁵

Control variables. Data relating to several potential firm and team covariates were collected. Firm-level covariates included firm age, firm size, prior firm growth, and industry environmental uncertainty. *Firm age* was assessed by the number of years since the firm had been incorporated. *Firm size* was measured by standardizing and adding firms' total revenue and number of employees from the most recent year. Both variables are common controls,

as older firms are likely to have accumulated greater resources and larger firms are able to capitalize on advantages such as economies of scale (Keats & Hitt, 1988). *Prior firm growth* was assessed as the average revenue and employment growth rates for the year prior to our administering of the key informant survey. The inclusion of this variable as a covariate allowed us to control for the effects of past growth on the relationships between the focal independent variables and the lagged measure of firm performance (Hmieleski & Baron, 2009). Data for these three firm-level covariates were acquired from Dun and Bradstreet. Finally, *environmental uncertainty* ($\alpha = .77$) was assessed using five items from Miller and Friesen (1983), which were included as part of the key informant survey. This is an important variable to consider because industry environmental uncertainty can be an important obstacle to achieving high growth (Markides & Geroski, 2004).

Team-level covariates included team interdependence, team conflict, negative team affective tone, and team size. *Team interdependence* ($\alpha = .75$) was assessed using six items from Van der Vegt and Janssen (2003). Team interdependence is of central importance to team structure, process, and effectiveness (Mathieu, Maynard, Rapp, & Gilson, 2008). Indeed, Kozlowski and Bell (2003: 363) have argued that “given its demonstrated importance, new research that fails to consider the effects of task interdependence for the team phenomenon in question has little relevance to building knowledge in the work groups and teams literature.” We assessed *team conflict* ($\alpha = .92$), which research has shown to affect TMT functioning (Ensley & Hmieleski, 2005; Ensley, Pearson, & Amason, 2002), using nine items developed by Jehn and Mannix (2001). Given the importance of negative emotions for survival situations and their detrimental impact on team performance (Cole et al., 2008), we gauged *negative team affective tone* ($\alpha = .83$) by adapting three items (reflecting unpleasant high-arousal emotions) from the JAWS (Van Katwyk et al., 2000). *Team size* was assessed because larger teams may have access to more resources (e.g., funding, expertise), which could facilitate higher performance (Kozlowski & Bell, 2003). Data for these team covariates were reported by key informants.

Statistical Procedures

Collectively, Hypotheses 1, 2, and 3 suggest an indirect effects model (Mathieu & Taylor, 2006), wherein positive team affective tone is an intervening variable in the relationship between shared authentic leadership and firm performance. To avoid conceptual and mathematical limitations associated with traditional approaches for assessing indirect effects (Hayes, 2009), we employed statistical methods and IBM SPSS syntax presented in Preacher and Hayes (2004, 2008). Confidence intervals for the population value of the unstandardized indirect effect (*ab*) were derived using bias-corrected and accelerated (BCa) bootstrapping methods. Through bootstrapped confidence intervals, we avoided power problems associated with nonnormal sampling distributions that arise when computing product of coefficient tests (e.g., Sobel’s mediation test) for intervening variable effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004).

In addition to the statistical significance of the indirect effect (*ab*), Preacher and Kelley (2011: 13) have recently suggested that supplementary measures of effect size for a given

indirect effect should also be reported. In so doing, they contend that it seems “sensible to ask what the maximum attainable value of [an] indirect effect (in the direction of the observed indirect effect) *could have been*, conditional on . . . sample variances and on the magnitudes of relationships among . . . variables.” We thus employed statistical methods contained in the MBESS package for R to determine the maximum possible indirect effect, $\mathfrak{M}(ab)$. Following Preacher and Kelley, we then used $\mathfrak{M}(ab)$ to define a standardized effect size, κ^2 . Essentially, κ^2 can be interpreted as “*the proportion of the maximum possible indirect effect [ab] that could have occurred, had . . . constituent effects been as large as the design and data permitted*” (Preacher & Kelley, 2011: 14). The key benefits of κ^2 include the following: (a) as a standardized parameter estimate it is scale free and, thus, not wedded to the particular values used in a mediation analysis, (b) it is on an interpretable metric (0 to 1), and (c) it is insensitive to sample size (Preacher & Kelley, 2011). Finally, and consistent with the broader literature on effect size, Preacher and Kelley (2011: 15-16) remain reluctant to put qualitative descriptors (e.g., small, medium, or large) on quantitative values of κ^2 ; however, they suggest that “if one were forced to attain such labels,” it makes sense to interpret κ^2 values using .01, .09, and .25 to reflect small, medium, and large effect sizes, respectively (also see Cohen, 1988).

Results

The means, standard deviations, and intercorrelations for all study variables are presented in Table 1. Results relating to Hypotheses 1 and 2 are displayed in Table 2; the unstandardized indirect effect (ab), bootstrapped results, and supplementary effect size measures pertaining to Hypothesis 3 are provided in Table 3.

Because of the strong association between potential study covariates and our focal variables, we checked for multicollinearity. Results showed that the largest variance inflation factor was 2.46 ($M = 1.47$), well below the value of 10 that is seen as problematic (Neter, Kutner, Nachtsheim, & Wasserman, 1996). In addition, the highest conditional index was 3.24 ($M = 2.00$), which is well below the value of 30 that is commonly viewed as problematic (Fox, 1997; Tabachnick & Fidell, 2001). Thus, we concluded that multicollinearity is not a major threat to the integrity of the results.

Hypothesis 1 proposed that shared authentic leadership within new venture TMTs would be positively related to their degree of positive affective tone. As shown in Model 2 of Table 2, the relationship between shared authentic leadership and positive team affective tone was significant and positive ($B = .74, p < .01$). Hypothesis 2 stated that TMTs’ positive affective tone would be positively related to the performance of their firms. As shown in Model 5 of Table 2, the relationship between positive team affective tone and firm performance was significant and positive ($B = .74, p < .01$).⁶ These results support Hypotheses 1 and 2.

Hypothesis 3 suggested that shared authentic leadership behavior within new venture TMTs would be indirectly (positively) related to firm performance through teams’ positive affective tone. As shown in Table 3, the unstandardized indirect effect (ab) and bootstrap confidence intervals are consistent with our prediction that the indirect effect of shared authentic leadership on firm performance (via positive team affective tone) is positive ($ab = 0.52$), with 99% confidence interval = 0.14 to 1.36. Also reported in Table 3, given that $\mathfrak{M}(ab) = 3.73$, the observed indirect effect is statistically significant, even though it is smaller than it

Table 1
Descriptive Statistics and Variable Intercorrelations

Variables	<i>M</i>	<i>SD</i>	<i>r</i>											
			1	2	3	4	5	6	7	8	9	10		
1. Firm size	0.00	1.98												
2. Firm age	2.03	0.63	.13											
3. Prior firm growth	0.00	1.97	.06	.11										
4. Environmental uncertainty	2.44	0.78	.02	-.02	-.08									
5. Team interdependence	4.26	0.55	-.05	.04	.10	-.27**								
6. Team size	4.80	2.76	.18*	-.14	-.01	.06	-.01							
7. Team conflict	2.33	0.81	-.03	-.13	-.05	.33**	-.16*	.13						
8. Negative team affective tone	1.96	0.84	-.01	-.05	.02	.21**	-.07	.09	.60**					
9. Shared authentic leadership	4.00	0.60	.01	.03	.06	-.26**	.40**	-.09	-.54**	-.37**				
10. Positive team affective tone	4.07	0.68	-.01	.06	.03	-.19*	.33**	-.10	-.36**	-.25**	.68**			
11. Firm performance	0.00	1.69	.07	.10	-.19*	.05	-.08	.05	.07	.01	-.12	.08		

Note: $N = 179$.

* $p < .05$. ** $p < .01$.

Table 2
Hierarchical Regression Models of Positive Team Affective Tone and Firm Performance

Variable	Positive Team Affective Tone				Firm Performance					
	Model 1		Model 2		Model 3		Model 4		Model 5	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Firm control variables										
Firm size	.00	.02	-.00	.02	.05	.07	.05	.07	.05	.06
Firm age	.01	.08	.04	.06	.35	.21	.34	.21	.30	.21
Prior firm growth	-.00	.02	-.01	.02	-.17*	.07	-.16*	.07	-.16*	.06
Environmental uncertainty	-.01	.06	-.00	.05	.20	.21	-.02	.18	-.02	.17
Team control variables										
Team size	-.01	.02	-.01	.01	.03	.05	.03	.05	.03	.05
Team interdependence	.35**	.09	.09	.08	-.17	.24	-.08	.26	-.14	.26
Team conflict	-.23**	.08	.01	.07	.20	.21	.11	.22	.11	.22
Negative team affective tone	-.05	.07	-.01	.06	-.10	.19	-.11	.19	-.11	.19
Main effects										
Shared authentic leadership			.74**	.08			-.27	.27	-.81*	.32
Positive team affective tone									.74**	.25
<i>F</i> ratio	5.73**		16.58**		1.46		1.41		2.22*	
R^2	.21		.47		.06		.07		.12	
Adjusted R^2	.18		.44		.02		.02		.06	

Note: $N = 179$. Unstandardized regression coefficients are shown.

* $p < .05$. ** $p < .01$.

Table 3
Bootstrapped Indirect Effect Results and Supplementary Effect Size Measures

Model	Firm Performance ^a					Effect Size		
	Boot Indirect Effect	Boot SE	LL 99% CI	UL 99% CI	Boot z	Boot p	κ^2 (ab)	κ^2
Shared authentic leadership (via positive affective tone) on firm performance	0.52	0.22	0.14	1.36	2.42	.01	3.73	.14

Note: $N = 179$. Bootstrap sample size = 10,000. LL = lower limit; CI = confidence interval; UL = upper limit. Bias-corrected and accelerated confidence intervals are reported.

a. Control variables = firm size, firm age, prior firm growth, environmental uncertainty, team size, team interdependence, team conflict, and negative team affective tone.

could have been. Finally, as likewise shown in Table 3, $\kappa^2 = .14$. This implies that the size of the indirect effect may be classified as falling in the medium range. Thus, results provide support for Hypothesis 3 and our overall conceptual model.

Discussion

Our results suggest that shared authentic leadership has a positive indirect relationship with firm performance—an influence transmitted through TMTs' positive affective tone. In other words, the shared enactment of authentic leadership encourages positive emotional states among TMTs, and this, in turn, is positively related to firm performance. These findings will now be discussed in terms of implications for upper echelons and leadership, the role of collective emotions in the entrepreneurial process, and strategies for developing shared authentic leadership and fostering a positive affective tone among new venture TMTs. Finally, we discuss limitations of the study and offer concluding thoughts.

Implications for Upper Echelons and Leadership

Upper echelons research has suggested that "leadership of a complex organization is a shared activity, and the collective cognitions, capabilities, and interactions of the entire TMT enter into strategic behaviors" (Hambrick, 2007: 334). Despite this fact, the current study is the first to apply a shared leadership perspective in an attempt to determine whether TMT members' authentic leadership behavior can have a positive impact on their functioning and effectiveness. Our results are also the first to empirically link authentic leadership behavior with objective indicators of firm performance. Thus, the present findings not only extend authentic leadership theory by adopting a distributed perspective (cf. Pearce & Sims, 2002) but also suggest new research directions by affirming that shared authentic leadership increases new venture performance through TMTs' positive affective tone. These findings enrich contemporary thinking by responding to Avolio et al.'s (2009) challenge to identify intervening mechanisms linking leader behaviors to firm performance and, thus, contribute

toward unlocking what Hambrick (2007: 335) has referred to as the “black box problem”—that is, identifying psychological processes that link intrafirm environments to firm performance.

We should point out that in the current study we have operated under the assumption that authentic leaders act in ways that are positive and ethical, and that their values and beliefs are congruent with social norms. This approach is consistent with authentic leadership theory (Avolio & Gardner, 2005), which has conceptualized authentic leadership behavior as being morally based and associated with positive outcomes (Avolio & Luthans, 2006; Ilies et al., 2005; Walumbwa et al., 2008). As a reviewer pointed out, however, there may be instances in which behaving authentically leads to (unanticipated) negative outcomes. For example, whereas a CEO may communicate the “brutal facts” to a subordinate about his or her job performance in a way that is morally appropriate and delivered with the utmost care and concern, the recipient of this “developmental” feedback might perceive otherwise (especially if the feedback is delivered when other team members are present; Baron, 1988, 1990). Thus, further research should explore the extent to which authentic behavior can become problematic in the sense that it depletes, rather than enriches, individual team members’ psychological resources (e.g., esteem, efficacy). Moreover, it is not clear whether authentic leadership may be more or less costly than other forms of leadership. For example, firms headed by TMTs who are high in shared authentic leadership may incur larger short-term operational expenses by “doing things the right way” in terms of following their moral values rather than taking shortcuts to reduce costs. Determining if, how, and when authentic leadership behaviors may be associated with positive versus negative outcomes does indeed seem worthy of exploration and might prove to be of real practical import. If future research takes up this challenge, we likewise note that such investigations should be mindful of the short-term versus long-term consequences of leadership (cf. Ployhart & Vandenberg, 2010; Shamir, 2011).

Future research might also consider the role of firm size and firm age on the relationship between shared authentic leadership and firm performance. New venture TMTs tend to lead their firms in uncertain situations (Baron, 1998) and function without well-defined work processes and procedure in place to guide their actions (Staw, 1991). New venture TMTs also hold a high degree of managerial discretion (Hambrick & Abrahamson, 1995) and operate without established norms and/or politics with which to constrain their authenticity (Schein, 1997). For these reasons, there is likely to be a greater opportunity for authentic leadership behavior to emerge and have influence on organizational outcomes in new ventures as compared to larger, more established firms. Consistent with theory and prior research (Avolio & Gardner, 2005; Walumbwa et al., 2008), we expect shared authentic leadership to also have positive effects within larger, more established firms—but suggest the incidence of shared (as well as vertical) authentic leadership may be lower and linkages to firm performance may be more diffuse and of smaller magnitude.

Implications for Collective Emotions in the Entrepreneurial Process

It is well known that a majority of new ventures are founded by entrepreneurial teams (Lechler, 2001) and that the process of launching and developing such firms is often a highly emotional experience (Schindehutte, Morris, & Allen, 2006). It is therefore surprising that

there has been a relative dearth of research on the causes and consequences of new venture TMTs' affective tone. Recognizing this important gap, we developed and empirically tested a model that sought to build conceptual links among authentic leadership, AET, and research in the field of entrepreneurship. Consistent with our predictions, positive emotions experienced by TMT members in response to shared authentic leadership behavior were found to have a significant relationship with firm performance. On this basis, we reason that TMT functioning—much like individuals' cognitive functioning—is at the mercy of emotional processing. To this end, our findings underscore the notion that the *collective* experience of positive emotion is indeed an important aspect of the entrepreneurial process, and one that is worthy of further theoretical and empirical consideration.

As a note of caution we mention that while we have focused on the beneficial performance implications of TMTs' positive affective tone, researchers have also established potentially adverse implications of positive affective reactions on outcomes such as creative performance (J. M. George & Zhou, 2002). While the adverse consequences of being high in dispositional (trait-based) positive affect have been acknowledged (Baron, Hmieleski, & Henry, in press; Baron, Tang, & Hmieleski, 2011), they have not been empirically examined within the context of new venture TMTs. Examining the potential for TMTs' positive affective tone to enhance certain outcomes (e.g., team morale) while reducing others (e.g., team creativity; receptivity to negative information and feedback) would make for an interesting contribution to the literature. It might also be worthwhile to consider aversive work conditions and/or events as antecedents of TMT affective tone and, subsequently, of firm performance. Prior research suggests that perceived environmental hostility (Nicholls-Nixon, Cooper, & Woo, 2000) and dysfunctional team behavior (Cole et al., 2008) may be particularly relevant in this respect. By simultaneously investigating the affective consequences of varied types of workplace (positive and negative) characteristics, researchers could provide a more detailed picture of TMTs' emotional context and contribute to an improved explanation of new venture performance.

Implications for Training and Development

Techniques for authentic leadership development have begun to appear in the literature (see, e.g., Avolio & Gardner, 2005; Avolio & Luthans, 2006; Gardner, Avolio, Luthans, May, & Walumbwa, 2005; B. George, Sims, McLean, & Mayer, 2007; Harvey, Martinko, & Gardner, 2006). As one example of such work, Spreitzer (2006) has suggested most leadership development programs are flawed in their design. She argued that rather than identifying and improving on areas of weakness, programs should build on individuals' strengths. A foundational premise of positive organizational behavior and the basic research on which it rests (Seligman & Csikszentmihalyi, 2000) is that human flourishing occurs when building on areas of strength. In fact, individuals and teams learn much more quickly, are more energized, and reach greater levels of accomplishment when working in their areas of strength—and, in particular, areas relating to their most deeply held moral convictions (Seligman, 2002).

Building from this foundation, Peterson and Seligman (2004) have created a classification of 24 basic virtues (e.g., integrity, kindness, self-control, creativity), and these virtues cluster

together to form six distinct character strengths (viz., wisdom and knowledge, courage, humanity, justice, temperance, and transcendence). We suggest there is a natural connection between what Peterson and Seligman have called character strengths and the development of authentic leadership. Training programs designed to help leaders recognize and build on their character strengths are likely to advance the development of expertise in areas they inherently enjoy, and do so in ways that are grounded in virtues—thus increasing the likelihood that their behavior will stem from an internalized moral perspective and relational transparency (key components of authentic leadership). Furthermore, learning how to identify and harness character strengths should enable team members to broaden and build their collective strength. Team members possessing such self-awareness will be more likely to understand that when faced with work duties that draw on areas of weakness, it will be in their best interest (and that of their team) to yield leadership to others possessing strengths that are in greater alignment with the tasks at hand. Being cognizant of one's character strengths should help new venture TMTs to identify business opportunities that are in accord with their moral values and, by extension, develop their business in a way that is authentic.

Researchers have theorized that authentic leadership often emerges from key life experiences that have acted as “triggers,” helping individuals and teams identify which values are dearest to them (C. D. Cooper, Scandura, & Schriesheim, 2005). Consistent with this notion, B. George et al. (2007: 134) have noted that “[t]he values that form the basis for authentic leadership are derived from your beliefs and convictions, but you will not know what your true values are until they are tested under pressure.” Thus, in terms of developing authentic leadership, we propose there is considerable value in exposing nascent entrepreneurs to problem scenarios designed to challenge their most deeply held values. Such scenarios may include concerns about the entrepreneurial process that tap into a wide range of moral issues (e.g., growing their firm vs. maintaining work–life balance).

Limitations

As with all research, the current study is not without limitations. One potential limitation is that data relating to shared authentic leadership and positive team affective tone were provided through CEO ratings. Even though CEO ratings are associated with unique benefits (for a review, see Kumar, Stern, & Anderson, 1993) and key informant sampling is a common methodology in upper echelons research (Datta et al., 2005), one could argue that different results might be obtained through data originating from other sources (e.g., subordinates). There are two reasons why we do not feel that the use of a key informants approach has unduly influenced our findings. First, CEO respondents are in the most informed position to provide ratings on the focal variables examined in the current research. Second, the obtained secondary responses (i.e., those provided by other TMT members) proved to be interchangeable (i.e., high IRA) with CEO responses. Although the use of CEO ratings does not invalidate the current research, future studies that consider other employees' viewpoints may provide further confidence in the robustness of the observed findings.

A second potential limitation is that only 12% of firms invited to participate in our study provided useable data. We note that data from senior-level management are difficult to collect (Agle, Nagarajan, Sonnenfeld, & Srinivasan, 2006), and our response rate is

comparable to that of prior research involving the Dun and Bradstreet database (Ling et al., 2008). Furthermore, empirical evidence suggests disqualifying results on the basis of nonresponse is inappropriate because a low response rate does not necessarily indicate nonresponse bias (Goldberg, 2003; Schalm & Kelloway, 2001). This latter point is particularly salient when a rigorous sampling procedure is employed (Blair & Zinkman, 2006), as was the case in the present study. We view the potential benefits of a national random sample (a somewhat rare approach within the entrepreneurship literature), rather than the more common convenience sample, to far outweigh the potential costs of a low response rate.

Despite including a robust array of study covariates, a further limitation is that other controls were not considered (e.g., team diversity fault lines). Team demography research suggests, for example, that diversity fault lines (e.g., educational background) encourage subgroup formation, which subsequently inhibits the exchange of task-relevant information and hampers joint decision making (Rico, Molleman, Sanchez-Manzanares, & Van der Vegt, 2007). While this is a potential limitation of the present study, we note that it was not feasible—from a practical standpoint—to capture key informants' judgments regarding the study's focal variables and the critical team-level covariates known to tap intrateam dynamics (e.g., interdependence, conflict, negative team affective tone) and request these same key informants to report on individual team members' personal characteristics. Nonetheless, incorporating what scholars (Weick, 1979) have referred to as "hot" (viz., teams' emotional states) and "cold" (viz., team demography) concepts in a single study would be interesting. For example, team diversity fault lines may influence the emergence of shared authentic leadership in TMTs. One might hypothesize weak fault lines to enhance the extent to which authentic behavior is enacted in TMT contexts, whereas in strong fault line teams, it may cause existing disintegration to have an intensified effect on team and firm outcomes.

Finally, contrary to expectations, results demonstrated a negative bivariate relationship between prior firm growth and firm performance. As suggested by a reviewer, this finding could be partly the result of the recent financial crisis. For example, one might conclude that this finding is a consequence of a ceiling effect. Specifically, there may have been an upper limit on revenue and employment, so if a firm grew faster than others in the previous year, it reached the limit and thus was more constrained in terms of growth in the following year. If this was indeed the case, it is possible that the findings may reflect a more conservative test of our model than would have otherwise been observed. Thus, this possibility increases rather than weakens confidence in the obtained pattern of results.

Conclusion

Aristotle is noted for arguing that "the good life" is experienced through the eudemonic principle of living virtuously, and to do so requires following one's intrinsic path toward "doing what is worth doing." Furthermore, he proposed that long-term happiness cannot be achieved through the sum of one's hedonic experiences (e.g., by becoming famous, accumulating material wealth); these, he suggests, are extrinsically driven and ultimately unsatisfying paths (see Ilies et al., 2005; Ryan & Deci, 2001). We suggest that entrepreneurship can be a vehicle for "doing what is worth doing" in life and that authentic leadership,

especially when shared by a team's members, can be a positive and highly energizing force that enables entrepreneurs to reach the highest levels of achievement for themselves and for the firms that they establish—thus, living out the Aristotelian view of “the good life.”

Notes

1. In the current study, positive team affective tone encompasses the degree to which “high arousal” positive emotions are consistently experienced within a team. This conceptualization places our view of affect squarely into the framework of affective events theory (AET) and in alignment with previous descriptions and measurement of affective tone (e.g., Cole, Walter, & Bruch, 2008).

2. Given that interrater agreement (IRA) refers to the absolute consensus in scores provided by respondents, IRA indices (e.g., r_{WG}) can be used to “address whether scores provided by judges are interchangeable or equivalent in terms of their absolute value” (Lebreton & Senter, 2008: 816). Thus, we used primary and secondary responses to estimate IRA scores for each of the self-reported constructs (viz., shared authentic leadership and positive TMT-affective tone). As suggested by Biemann, Cole, and Voelpel (in press), we compared $r_{WG(i,j)}$ values derived solely from a rectangular (uniform) distribution with a range of values based on a small set of alternative distributions. The first distribution we used to calculate $r_{WG(i,j)}$ was the rectangular null distribution ($\sigma_E^2 = 2.0$). Results demonstrated that IRA among primary and secondary respondents was high, ranging from .88 to .95. Nevertheless, respondents' ratings could have been affected by cognitive or affective biases. To account for this possibility, we computed IRA indices using both a slightly skewed null distribution ($\sigma_E^2 = 1.34$) and a more extremely skewed ($\sigma_E^2 = 0.90$) null distribution (Biemann et al., in press). The obtained $r_{WG(i,j)}$ scores continued to suggest substantial within-team agreement. Specifically, the median $r_{WG(i,j)}$ based on slightly skewed and moderately skewed null distributions were .93 and .90 for shared authentic leadership and .81 and .72 for positive TMT-affective tone.

3. We also estimated our indirect effects model on an “aggregated” sample to examine the extent to which the use of primary versus secondary responses altered study conclusions. The results did not change when using the aggregated data (i.e., the CEOs' responses + secondary team members' responses).

4. See <http://www.mindgarden.com/products/alq.htm>.

5. As Wiseman (2009) has shown, there is an increased likelihood of obtaining a spurious result when a ratio measure is included in statistical models with predictor variables that partly overlap with the ratio variable. Therefore, as Wiseman recommends, we reestimated all of our models without firm size and prior firm growth as control variables. These supplemental analyses produced a nearly identical pattern of results. Thus, we concluded that our use of these two variables as study covariates has not unduly (i.e., biased) influenced our findings. Results of supplemental analyses are available from the contact author.

6. Table 2 illustrates that the total relationship between shared authentic leadership and firm performance (see Model 4; $B = -.27, ns$) was closer to zero than the estimate controlling for positive team affective tone (see Model 5; $B = -.81, p < .05$). Furthermore, the indirect effect (*boot indirect effect* = 0.52, $p < .01$) and direct effect controlling for positive team affective tone ($B = -.81$) were of opposite signs. Collectively, this pattern of coefficient estimates indicates the presence of empirical suppression. As a result, the negative coefficient between shared authentic leadership and firm performance (controlling for positive team affective tone) should be interpreted with caution as it is most likely a spurious finding. MacKinnon, Krull, and Lockwood (2000) and Shrout and Bolger (2002) provide a detailed description of empirical suppression within the context of analyzing indirect effect models.

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