



A model of leadership motivations, error management culture, leadership capacity, and career success

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We integrated ideas from literature on error management culture, leadership motivation, and career development to create several contributions for the research literature. First, we examined two situational factors – error management/aversion culture perceptions – that affect employees' leadership-relevant motivations. Second, we distinguish between two types of leader motivations, motivation to lead (MTL) and motivation to develop leadership skills (MTDL). We offer evidence of discriminant and predictive validity of the two leadership motivations on key leadership processes and outcomes. Third, we tested a linkage model in which error management/aversion perceptions influenced leadership motivations (MTL and MTDL) and these motivations predicted leadership capacity and leader career success (i.e., promotions, increased leadership responsibility, and pay increases). Based upon multisource data collected from 151 employees and their supervisors from diverse occupations and organizations over a period of 1 year, we found that error management perceptions were positively associated with social-normative MTL (the motive to lead out of a sense of duty and obligation) and with MTDL whereas perceptions of error aversion were negatively related with affective-identity and non-calculative MTL. MTDL was distinguishable from MTL and demonstrated better predictive validity on leadership capacity and career success than MTL. We discuss a number of implications for both theory and practice.

Practitioner Points

- Creating a culture in which errors are constructively managed enhances leadership motivations, leadership capacity (leader behaviour, development, and potential), and career success.
- In managing leadership development and performance, distinguishing between motivation to be a leader and motivation to develop leadership skills is important, both in terms of how these motivations are influenced by error management and aversion and in terms of the how the motivations influence leadership capacity and success. Motive to lead out of a sense of duty is key.

Recent estimates indicate that companies in the United States spend over \$15.5 billion annually in leadership development training (O'Leonard & Krider, 2014). Developing leaders' knowledge, skills, and capabilities, as well as improving the organizational systems that enhance leader and follower effectiveness, can result in positive organizational outcomes (Avolio, Avey, & Quisenberry, 2010; Crook, Todd, Combs, Woehr, &

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Ketchen, 2011). Given its importance to followers, leaders, and organizations, leadership development remains of great interest to academics and practitioners alike (Day, Fleenor, Atwater, Sturm, & McKee, 2014; DeRue & Myers, 2014).

Within the broader concept of leadership development, leader development focuses on enhancing the effectiveness of individual leaders. Leadership, or behaviour intended to influence others, is a behaviourally oriented process whose success depends, in part, on employees' motivation to engage in leadership. Chan and Drasgow (2001) developed a theoretical framework of leader development that explains the leader development process and how it influences leader effectiveness. Central to the theory of leader development is an employee's motivation to lead (MTL). MTL is defined as employees' motivation to assume leadership-relevant roles, responsibilities, and training (Chan & Drasgow, 2001). According to Chan and Drasgow's (2001) theoretical framework, employees' individual characteristics influence their motivation to lead. Employees who are motivated to lead attain leadership effectiveness through improving their leadership skills and increasing personal resources. In essence, their overall capacity for leadership develops as a function of experiential learning (i.e., participating in leadership roles) and social learning (i.e., acquiring social knowledge and skills for leading and leadership). Although this theoretical framework is appealing, several theoretical gaps exist that limit its contribution to the leader development literature.

First, individual traits and characteristics such as cognitive ability, personality, values, leadership self-efficacy, vocational interests, and chronic regulatory focus have primarily been suggested or tested as antecedents of MTL (Chan & Drasgow, 2001; Chan, Rounds, & Drasgow, 2000; Kark & Van Dijk, 2007). This focus may be too narrow if 'MTL can change with leadership experience and training' (Chan & Drasgow, 2001, p. 482); this observation suggests that MTL may be more accurately characterized as malleable and state-like than a stable trait-like motivation. Dynamic situational forces may thus influence leaders' underlying motives to assume leadership roles. In support, Chan and Drasgow (2001) observe that, '[i]f the costs of leading are high relative to the benefits, people may not want to lead, and this could also be detrimental to the group in the long run. Such research on the situational factors affecting decisions to lead may have important sociopolitical implications for the future, especially with increasing demands being placed on public leaders for accountability. . .'; p. 496). Consistent with this idea, Feldman and Ng (2008), note that the social context has received comparatively little attention as a determinant of motivation to engage in work training and career development compared to individual differences. In this study, we investigate the degree to which error management/aversion cultures convey normative situational cues that influence employees' drive to become a leader and to develop leadership skills.

Organizational environments that promote learning from errors or prevent errors through punishment are expected to have substantively different effects on employees' affect, attitudes, and behaviours (Rodriguez & Griffin, 2009). What remains unclear, however, is whether employees' psychological perceptions of the culture influence their personal leadership-relevant motivations. Accordingly, this study's first purpose is to contribute to the theory of leadership development by considering the extent to which MTL is enhanced or inhibited by two social contextual conditions (i.e., error management/aversion culture) that may make leading more or less attractive.

The second gap in the theory of leader development is that the mechanisms through which MTL enhances leader effectiveness and MTL's connection with leader success are not well established. Other than MTL's positive association with leadership potential (Chan & Drasgow, 2001), teamwork behaviours and leadership emergence (Luria &

Berson, 2013), MTL's predictive validity concerning several theoretical tenets underlying the theory of leader development remains equivocal. Hence, the second purpose of this study is to empirically examine processes linking MTL to leader career success. Drawing upon Chan and Drasgow's theoretical framework, this study focuses on employees' motivation to develop leadership skills and leadership capacity as mechanisms through which MTL influences leader career success.

This study aims to contribute to the literature in three ways. First, we investigate the degree to which employee perceptions about error management and error aversion impact employees' leader-relevant motivations. The way that errors are managed within a work unit can influence employees' perceived costs or benefits associated with leading. Punitive environments may cause employees to be more reluctant to learn and develop leadership competencies (Rodriguez & Griffin, 2009). In contrast, positive, constructive learning environments may provide a conducive context to enhancing employees' motivation to lead and offering opportunities that encourage employees to develop leadership skills. In support, Feldman and Ng (2008) suggest that the context influences 'how frequently, how intensely, and how persistently individuals will engage in [developmental] activities' (p. 412). Consistent with these arguments, we suggest that error management/aversion cultures are salient social contextual cues that influence employees' motivation to become a leader or to develop leadership skills. This approach contributes to Chan and Drasgow's theoretical framework by directly addressing situational factors that are relevant to leaders' experiences as they encounter challenges associated with a leadership role.

Second, we contribute to the leader development literature by distinguishing between two leader-relevant motivations: motivation to lead (Chan & Drasgow, 2001) and motivation to develop leadership skills (MTDL). MTDL is derived from the broader training and development literature devoted to understanding individuals' motivation to engage in training and career development (Feldman & Ng, 2008). An abundance of research has investigated employees' motivation to develop by studying training motivation, development activity, and responses to feedback (Hurtz & Williams, 2009; Maurer, Weiss, & Barbeite, 2003; Noe & Wilk, 1993), but a paucity of work has specifically addressed MTDL. MTDL advances the leadership development literature by incorporating insights from development motivation research to further understand employees' leadership-relevant motivations. This study offers evidence of discriminant and predictive validity of two leadership motivations on leadership capacity and career success.

Third, we draw upon Day, Gronn, and Salas' (2004) conceptualization of leadership capacity to examine the extent to which employees exhibit leadership behaviours, acquire leadership skills, and display leadership potential. This concept is broader than leadership potential in that it also incorporates the extent to which employees acquire and display social knowledge and skills for leading – a key process through which MTL is expected to impact leader career success. Evaluating the extent to which MTDL and leadership capacity are mechanisms through which MTL influences leader career success build initial empirical evidence towards understanding the processes through which employees' MTL impacts career success.

In the sections that follow, we build a model of leadership motivation in which we explain why social-normative cues related to errors in the work environment are important sources of information that influence employees' leadership-relevant motivations. We then derive insights from Chan and Drasgow's (2001) theory of leader development to explicate how employees' leadership motivations build leadership capacity and career success. This study offers a unique view into why social-normative

cues are associated with leadership-relevant motivations and how leadership motivations impact important leader-relevant outcomes. Figure 1 depicts the proposed model.

Theoretical background

Leadership-relevant motivations

According to Chan and Drasgow's (2001) theory of leader development, leader development encompasses the process of translating employees' underlying motivations and participation in leadership-relevant experiences into leadership potential. This development process, in turn, affects leadership outcomes. Two leadership-relevant motivations are important to the leader development: the motivation to lead (MTL) and the motivation to develop leadership skills (MTDL). MTL amplifies and intensifies employees' attention towards and desire to assume leadership-relevant roles and activities. Employees have three different motivations to lead (Chan & Drasgow, 2001): affective-identity, social-normative, and non-calculative. *Affective-identity MTL* reflects the degree to which employees prefer leading and perceive themselves as having leadership qualities. *Social-normative MTL* reflects the extent to which employees feel a sense of social responsibility, duty, and obligation to lead. *Non-calculative MTL* reflects the extent to which personal privileges, benefits, or perquisites that employees can gain from a leadership role do not drive their interest in leading others. Taken together, all three components of an employee's MTL contribute towards one's motivation to lead others.

We theorize about each MTL dimension rather than treat MTL as a unitary concept (e.g., Luria & Berson, 2013) because Chan and Drasgow (2001) found that antecedents such as personality, national culture, past leadership experience, and leadership self-efficacy varied in their predictions of the three MTL dimensions such that they predicted some but not all of the motivations to lead. Consistent with this approach, efforts to ascertain the degree to which error culture perceptions have predictive utility for all three MTL dimensions and quantify the relationship between the three MTL dimensions and MTDL has important implications for leadership development theory and MTL research.

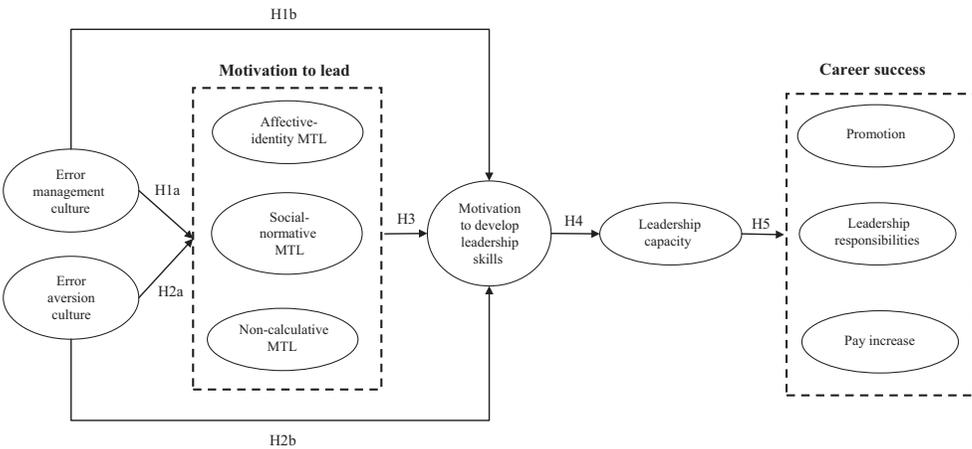


Figure 1. Hypothesized model of leadership motivation.

The second leadership-relevant motivation is motivation to develop leadership skills (MTDL). MTDL is defined as the motivation to improve or develop leadership-relevant task and relational skills, attributes, and competencies through effort. Employees with high MTDL are interested in opportunities to build managerial skills (e.g., planning, organizing, coordinating tasks and processes, and delivering feedback) as well as develop social skills (e.g., team building, listening, seeking input, supporting others, and being trustworthy). Whereas MTL represents an employee's desire to *assume* a leadership role (i.e., desire to be a leader), MTDL represents an employee's desire to *increase proficiency* in leadership-relevant competencies. MTL and MTDL are thus two important leadership-relevant motivations that are instrumental to the process of leader development. Before we enumerate the mechanisms through which MTL is expected to enhance employees' career success, we first consider the extent to which perceived social-normative cues about errors influence employees' leadership-relevant motivations.

Approach to errors as a normative guideline for employees' leadership-relevant motivations

Errors, or unintentional deviations from a goal or standard, are ubiquitous within organizations (Ramanujam & Goodman, 2003). Errors can have deleterious consequences on a work group's performance, reputation, and the well-being of its employees and customers, but they can also be dealt with constructively and positively within organizations. Positive effects of errors include learning, creativity, and adaptive performance (Bell & Kozlowski, 2008). Bell and Kozlowski (2008) postulated that framing errors as something to be punished focuses employees on avoiding failure, attenuating psychological resources devoted to learning and performance. Framing errors as learning opportunities, however, produces positive benefits by focusing employees on developing task competence and proficiency. One way that error framing is conveyed to employees is through a work group's error culture.

Consistent with two types of error framing (i.e., negative and positive), error cultures consist of two dimensions: error aversion and error management. *Error aversion culture* is an avoidant and reactive approach to errors in which errors are covered up or punished, resulting in psychological strain (van Dyck, Frese, Baer, & Sonnentag, 2005). This system of norms encourages employees to avoid punishment by covering up mistakes or refraining from taking risks that might result in errors. *Error management culture*, conversely, is a positive, proactive approach to errors that encourages detecting, communicating, sharing about, analysing, and correcting errors (van Dyck *et al.*, 2005). Error management culture emphasizes employees' learning, communication, and development as a result of errors. When errors and mistakes are handled constructively, people are expected to take more risks, experiment, learn, improve processes and product quality, and reduce future errors, resulting in higher performance (van Dyck *et al.*, 2005).

Error cultures consist of norms about how employees should communicate about, detect, analyse, and correct errors (van Dyck *et al.*, 2005). Norms describe what most people do (e.g., descriptive norms) and what behaviours are approved or disapproved (e.g., injunctive norms) (Cialdini, Kallgren, & Reno, 1991; Jacobson, Mortensen, & Cialdini, 2011). Norms are more visible and readily observable than less discernable aspects of an organization's culture such as underlying values, beliefs, and assumptions (Schein, 2010). As a result, norms are more likely to generate reliable individual perceptions about how errors are or should be handled and, in turn, be more proximal predictors of employee behaviour. To be clear, our focus is not to objectively establish that an error culture exists (i.e., based upon the agreement that exists in shared perceptions

among multiple organizational members). Instead, we focus on the extent to which individual employees' subjective experience of normative procedures and practices (Restubog, Zagenczyk, Bordia, Bordia, & Chapman, 2015) influence their resulting individual motivations, behaviour, and outcomes. This psychological approach offers unique insight into how employees' perceptions of error management and error aversion within their organization prescriptively influence their leadership-relevant motivations, behaviour, and career success.

Error management perceptions and leadership-relevant motivations

Error management reduces negative and even promotes positive consequences associated with errors. Error management encourages employees to think creatively and proactively as new challenges and unclear situations arise. Such a situation encourages learning through communication to promptly identify errors, develop shared awareness, and promote collaborative efforts to remedy errors so that all employees are able to benefit from them (Cannon & Edmondson, 2005). Error management's constructive and proactive approach to errors also encourages experimentation. Workers tend to take risks when they feel psychologically safe or are confident they will not be blamed or ridiculed when errors happen (van Dyck *et al.*, 2005; Edmondson, 1999). Error management encourages individuals to explore and experiment, resulting in a high degree of personal initiative. This initiative may enhance the degree to which employees aspire to leadership positions and take interpersonal risks associated with developing leadership skills.

A supportive environment characterized by reduced negative consequences for errors, empathy surrounding errors, and viewing errors as management resources, rather than events to be punished, creates a context within which individuals can experience a motivation to lead. That is, a constructive error management culture increases the degree to which employees participate in identifying and communicating about errors resulting in a sense of heightened leadership responsibility (social-normative MTL), feel that the process of leading others can be enjoyable (affective-identity MTL), and seek leadership responsibilities for the benefit of the collective, not for personal gain (non-calculative MTL). Likewise, motivation to develop leadership skills should also be higher in a high error management culture because learning, experimentation, innovation, growth and risk taking create a conducive context for employees to develop and grow their leadership competencies and capabilities. In support, cultures that promote positive feedback and continuous learning impact employees' motivation to engage in training and career development as well as proactively search for additional developmental opportunities (London, 1993; London & Smither, 1999). Taken together, an emphasis on constructive error management should create an environment more conducive for cultivating employees' leadership aspirations and competencies.

Hypothesis 1a: Error management perceptions will relate positively to motivation to lead (i.e., affective-identity, social-normative, and non-calculative MTL).

Hypothesis 1b: Error management perceptions will relate positively to motivation to develop leadership skills.

Error aversion perceptions and leadership-relevant motivations

Error aversion involves the extent to which workers cover up, are afraid of, and experience strain from errors because errors tend to be punished and not accepted,

creating additional cognitive demands and coping-related problems. In organizations with high error aversion, individuals focus on the punitive consequences (e.g., social disapproval & performance consequences) of an error, along with the negative self-image that can be experienced with errors (Edmondson, 1999; Zhao & Olivera, 2006). Employees in these punitive cultures tend to ignore or cover up errors because the psychological, emotional, and material costs are perceived to be less than the costs associated with admitting or taking responsibility for errors (van Dyck *et al.*, 2005; Zhao & Olivera, 2006).

A social environment that punishes mistakes may adversely affect employees' leadership-relevant motivations because the leadership role and the process of leading (i.e., learning, developing, applying leadership skills) requires taking risks and increases opportunities to be held accountable for mistakes. The romance of leadership theory purports that followers attribute outcomes to leaders as part of a sense-making process to explain organizational events (Meindl, Ehrlich, & Dukerich, 1985). This attribution can have a destructive effect on an employees' self-image when errors are detected and attributed to them (Cannon & Edmondson, 2005). Even more, individuals may be less willing to lead in an environment where followers cover up errors for one another, potentially exacerbating the negative repercussions from the errors when they are eventually discovered. Taken together, an error averse environment is expected to negatively impact employees' personal enjoyment of leading (i.e., affective-identity MTL) and felt obligation to lead (i.e., social-normative MTL). An error aversion culture also creates a situation in which employees become more calculative about their motivation to lead (i.e., non-calculative MTL). That is, they are more inclined to lead when the personal benefits from the leadership role outweigh the perceived costs of leading. These arguments suggest that high error aversion will result in a lower likelihood that employees will be motivated to lead.

Error aversion cultures are further expected to discourage employees' motivation to pursue leadership-relevant learning and development. Punishment, according to the theory of operant conditioning (Skinner, 1948), imposes a negative consequence to decrease an undesirable behaviour. Reinforcement theory suggests that punishment is an aversive stimulus that has an inhibitive effect on employees' behaviour. For example, employees who conceal errors in punitive environments are more likely to avoid dealing with the error and its consequences (Meurier, Vincent, & Parmar, 1997). Punishment that is prevalent in an error aversion culture is thus expected to attenuate employees' MTDL by making them more reluctant to take risks, accept assignments with stretch goals, and pursue activities related to the development of leadership skills. Taken together, perceptions of error aversion compel employees to avoid negative sanctions by complying with social cues to avoid errors. These normative cues are predicted to have negative consequences for employees' MTL and MTDL.

Hypothesis 2a: Error aversion perceptions will relate negatively to motivation to lead (i.e., affective-identity, social-normative, and non-calculative MTL).

Hypothesis 2b: Error aversion perceptions will relate negatively to motivation to develop leadership skills.

MTL and MTDL

It stands to reason that employees who are motivated to lead are more likely to be motivated to prepare themselves for an aspirational leadership role or improve their

competency for a current leadership role by developing leadership skills and abilities. According to the theory of planned behaviour (Ajzen & Fishbein, 1977), an employees' motivation towards a behaviour emanates from their attitudes towards the behaviour, subjective norms, and perceived behavioural control. Employees possessing motivation to lead are likely to have a favourable evaluation (i.e., attitudes) about developing behaviours required for success in the leadership role. Employees are also likely to feel social responsibility (i.e., normative social pressure) to develop leadership skills and abilities to effectively perform in a leadership role. Finally, employees who are motivated to lead also should feel more capable of learning, improving, and demonstrating leadership competencies (Chan & Drasgow, 2001). In sum, employees who are motivated to lead are more likely to conclude they want to, should, and can develop leadership skills, thus enhancing their MTDL.

Hypothesis 3: Motivation to lead (i.e., affective-identity, social-normative, and non-calculative MTL) will relate positively with motivation to develop leadership skills.

Linking leadership-relevant motivations to leadership capacity

In a review of the team leadership literature, Day *et al.* (2004) alluded to the concept of leadership capacity as an outcome of team-relevant processes focused on learning and development that occurs during performance episodes. Applying their conceptualization to the individual, leadership capacity can be considered a resource that employees develop through relational and task-oriented performance episodes such as influencing others and improving one's human capital (i.e., knowledge, skills, and abilities). Leadership capacity thus emerges from leader development processes such as leadership motivation, prior leadership experiences, and leadership training (Chan & Drasgow, 2001).

Although it is helpful to understand how leadership capacity emerges, the extant literature is less clear about stipulating what leadership capacity *is*. We define leadership capacity as a resource that reflects an employee's ability to influence others (perform as leaders), acquire leadership skills (develop as leaders), and exhibit future leadership potential. This definition integrates three interrelated aspects of leadership behaviour – leader performance, development and potential (Bass, 2008; London, 2002; McCauley & Van Velsor, 2004) – and is consistent with the 'leadership-as-outcome perspective' (Day *et al.*, 2004).

There are important theoretical reasons to believe that MTDL will be a more proximal predictor of leadership outcomes than MTL. Whereas those who are motivated to lead are more likely to *participate* in leadership roles and training (Chan & Drasgow, 2001) as an expression of their desire to exert influence, employees who are motivated to develop leadership skills are more likely to emphasize *learning* from leadership-relevant activities and *applying* the acquired lessons to their leadership development. According to Chan and Drasgow's (2001) theoretical framework, MTL builds employees' leadership capacity indirectly through seeking opportunities to participate in leadership roles and training and subsequently gaining social knowledge and skills for leading. Employees' MTDL is expected to have a direct influence on their leadership capacity because they focus more concertededly on developing leadership-relevant skills, abilities, and competencies. This developmental focus enhances employees' attentiveness to learn from their experiences and apply the knowledge with a focus on improving their leadership capacity. In sum, MTL increases an employees' exposure to and acquisition of leadership-relevant skills and

experiences, but MTDL focuses more explicitly on the application and integration of leadership-relevant skills and competencies into employees' behavioural repertoire. Therefore, we posit that MTDL will be positively associated with leadership capacity.

Hypothesis 4: Motivation to develop leadership skills will relate positively to leadership capacity.

Leadership capacity and career success

Career success is defined as the favourable occupation-related outcomes an employee achieves as an outcome of his/her work experiences and development (London & Stumpf, 1982). In line with extant career success literature (Boudreau, Boswell, & Judge, 2001; Judge, Cable, Boudreau, & Bretz, 1995; London & Stumpf, 1982), we examined the following three indicators of leadership-relevant career success: ascendancy (promotions), financial rewards (pay increases), and increased leadership responsibilities. Promotions and pay increases are well-recognized objective measures of career success that reflect an individual's functional influence on organizational outcomes. Increased leadership responsibilities are also important measures of career success because they indicate an increased level of relational and managerial influence in the organization. Promotions, pay, and increased leadership responsibilities are thus viewed as complementary components of leadership-relevant career success.

Leadership capacity influences career success because employees are more likely to be rewarded as they develop their knowledge, skills, and abilities. Human capital theory suggests that employees invest in their own human capital (Becker, 1975). Those who invest greater time, effort, and money in training, experience and education are expected to reap the rewards of such investments because they reflect a concern with being involved with improvement and self-development, leading to increasingly effective and capable employees. Likewise, the contest-mobility model of career success (Turner, 1960) posits that employees who are willing to put in the most time and effort into developing their knowledge, skills, and abilities will attain more favourable career outcomes. That is, employees who develop greater leadership capacity and skill mastery enhance their own value to the organization and should accrue benefits over time. In support, Tharenou, Latimer, and Conroy (1994) reported that attendance at training events and conferences were associated with managerial level and salary. Other human capital investments, such as formal educational attainment, political skills, and social capital are also positively related to career success outcomes like salary progression and promotability (Bretz & Judge, 1994; Ng, Eby, Sorensen, & Feldman, 2005; Sheridan, Slocum, & Buda, 1997; Stroh, Brett, & Reilly, 1992). Taken together, we hypothesize:

Hypothesis 5: Leadership capacity will relate positively to career success (i.e., promotions, pay increases, and leadership responsibilities).

Method

Sample and survey administration

Consistent with prior studies' data collection strategies (Maurer, Lippstreu, & Judge, 2008; Piccolo & Colquitt, 2006), data were collected from respondents in the United States who were recruited to participate in a survey through a professional research organization, StudyResponse. StudyResponse is a commercial organization that pairs researchers to research participants who are receptive to receiving solicitations for studies (Weiss & Stanton, 2003). Its pool of participants includes over 50,000 members with a wide variety

of demographic and occupational backgrounds. Respondents received small monetary incentives to participate in these surveys. For purposes of the present study, the recruiting service provided a sample consisting of respondents and their supervisors ($n = 151$ pairs).

Data were collected at two points in time over a period of 1 year. At Time 1 (T1), respondents completed the first survey containing the culture and motivational measures. The respondents were employed in a variety of occupations and reported being within one of 20 broad occupational categories, with the top five representing the following occupations: office and administrative support, 15.4%; education, training, and library, 12.1%; management, 9.4%; sales and related, 9.4%; business and financial operations, 7.42%. The mean age in the sample was 40.28 ($SD = 10.50$) years, 86% were Caucasian, and 34% were male. The mean work experience was 19.74 ($SD = 10.10$) years with the mean years at a present job of 7.70 ($SD = 8.02$). 70% of respondents reported having formal leadership/supervisor experience. The mean number of years of supervisory experience was 5.15 ($SD = 6.52$).

One year later at Time 2 (T2), respondents' supervisors completed a survey about the respondents' leadership capacity and career success. Supervisors' mean age was 45.92 ($SD = 9.91$) years 51% were male, and 87% were Caucasian. They had supervised their subordinate (the respondent in this study) for a mean of 5.02 ($SD = 5.06$) years.

Regarding recruiting strategy and response rates, a trade-off is that even with a smaller response rate from a population that is very broad, the results from a diverse sample of workers are more generalizable than a larger response rate from respondents that come from one job, one organization, or a population of students (Gosling, Vazire, Srivastava, & John, 2004). Further, collecting data independently of respondents' employers significantly reduces respondents' concerns about how the data would be used and its accessibility to their respective employers, thus reducing response bias. Given this strategy, we examined how response rates compared to prior employee development and leadership research using this type of approach. At T1, the recruiting organization contacted 10,739 people with work experience who were registered in their database; 1,299 participants responded. This initial response rate of 12.1% is generally consistent with Maurer *et al.* (2003) in which a similar mode of recruiting was used: a random digit dialling and mailing strategy in which 14.7% responded. Approximately 1 year later, at T2, a total of 750 participants in the present study who responded to T1 were still active/available in the recruiting organization's database (the average amount of time for a person to remain active in the recruiter's database is 14 months so this results in yearly attrition). At T2, all 750 active respondents who participated in the T1 data collection were sent recruitment notices that asked respondents to solicit a supervisor's participation in a short survey, and interested respondents sent the information to their supervisors. This resulted in 151 completed surveys from the 'supervisor sample'. The response rates by supervisors ($151/750 = 20.1\%$) is higher than the supervisor response rate obtained by Piccolo and Colquitt (2006) which was $217/1491 = 14.6\%$. These response rates compare reasonably with prior research.

Measures

Error management and error aversion perceptions

Error management and aversion perceptions were measured using the scale developed by van Dyck *et al.* (2005). Very good reliability coefficients in the study by van Dyck *et al.* (2005) entered into a Spearman-Brown prophecy formula suggested that a parallel forms

version of their scale via an odd–even split half would yield good reliability in a shorter version of the scale. We followed this approach to save needed survey length. Nine error management scale items and six error aversion scale items were included in the study. Items were answered on a scale ranging from 1 (does not apply at all) to 5 (applies completely). Respondents were instructed to rate the extent to which each item applies to the people in their organization. Sample items for error management and error aversion, respectively, include: ‘For us, errors are very useful for improving the work process’ and ‘Employees who admit their errors are asking for trouble’. Both error management and error aversion scales demonstrated excellent item reliability (.89 and .86, respectively).

Motivation to lead (MTL)

MTL was measured using Chan and Drasgow’s (2001) 27-item measure that captures three dimensions of an employee’s motivation to lead – affective-identity, social-normative, and non-calculative. People may be motivated to lead because they enjoy leading others (affective-identity), they have a strong sense of duty or felt obligation (social-normative), and/or they are focused on the outcomes or benefits associated with leadership. The latter scale has wording to suggest that a respondent is *not* concerned or is not ‘calculative’ relative to gaining special benefits they he/she can attain through leading (non-calculative). Each dimension was measured using nine items. Sample items include: ‘I usually want to be the leader in the groups that I work in’, ‘I feel that I have a duty to lead others if I am asked’, and ‘I would agree to lead others even if there are no special rewards or benefits with that role’, for affective-identity, social-normative, and non-calculative motivations to lead, respectively.

Motivation to develop leadership skills (MTDL)

MTDL was measured using 39 leadership attributes identified by Tett, Guterman, Bleier, and Murphy (2000). Tett *et al.* (2000) developed a taxonomy consisting of 39 leadership competencies that were clearly relevant to at least one leadership style from the leadership literature. The Tett *et al.* (2000) taxonomy offers both breadth and depth and is comprehensively applicable to a wide variety of leadership contexts. Utilizing the leadership attributes from the taxonomy helped ensure that the items were consistent with leadership content models would and would apply to a wide variety of settings.

The MTDL measure involved asking respondents to report their motivation to develop each of the leadership-relevant attributes. Participants read the definition of each attribute and motivation to develop the attribute was assessed when they responded to the question: ‘*To what extent are you motivated to improve this attribute in yourself?*’ Participants used a five-point response scale that ranged from (1) Not at all Motivated to (3) Moderately Motivated to (5) Very Motivated. Example items are ‘Directing: Clearly specifies to subordinates what needs to be done’, and ‘Team building: Identifies and integrates distinct subordinate roles in a spirit of collaboration’.

We examined the degree of variability in MTDL ratings to assess if the variance was due to raters or to the 39 leadership attributes within the scale. We conducted a items \times persons design using the ANOVA approach for generalizability analyses (Shavelson & Webb, 1991). Across the ratings of all 39 leadership attribute items, 52.7% of the variance was accounted for by persons, whereas 2.3% of the variance was accounted for by items. The rating differences are thus a result of differences among people rather than differences among items. This finding suggests that little variance exists across the 39

leadership attributes and that a general composite scale score is a valid representation an employee's overall MTDL.

Leadership capacity

One year after the respondents provided the motivational and culture measure data, the leadership capacity ratings were completed by their respective supervisors. Questions instructed supervisors to focus on their subordinate's leadership behaviour (as opposed to other types of job behaviour or performance) regardless of whether or not the subordinate had a formal leadership role. The instructions stated that, even if the person is not currently in a formal leadership position, it is possible that the rater (supervisor) might have observed some leadership-relevant behaviour by him/her on occasion and therefore the rater could base ratings on what they had observed. This helped to provide a broad range of leadership experience in the sample.

Supervisors rated the respondents' leadership capacity over the past year. Leadership capacity was measured as a composite of the subordinate's *leadership performance*, *leadership development*, and *potential* to be a better leader. Each component was assessed with three items using a 9-point response scale. An example item for the performance dimension is 'This person's past leadership behaviour is as follows' (9 = 'Demonstrated the absolute best leadership behaviour I have ever seen', 5 = 'Demonstrated typical leadership behaviour I have seen', 1 = 'Demonstrated absolute worst leadership behaviour I have ever seen'). A sample development scale item was 'This person's leadership talent or capability has developed or increased as follows': (9 = 'Demonstrated the absolute highest amount of development or increase I have ever seen', 5 = 'Demonstrated a typical amount of development or increase', 1 = 'Demonstrated no development or increase'). A sample item from the potential scale was 'This person's potential for a more significant leadership role than he/she has now': (9 = 'Absolute highest potential for a more significant leadership role', 5 = 'Typical potential for a more significant leadership role', 1 = 'Lowest potential for a more significant leadership role').

Confirmatory factor analysis was done on the nine items to test a three-factor measurement model. The results had good fit for the three-factor model; items formed a performance factor, a development factor, and a potential factor (CFI = .98; RMSEA = .09; SRMR = .02). Although the three-factor model describes the data well, the scale scores from the three leadership capacity dimensions (development, potential, performance) were highly correlated, ranging from .70 to .80. To reduce complexity and to increase parsimony, the three dimensions were combined into a composite leadership capacity score.

Career success

Consistent with prior research on career success (Boudreau *et al.*, 2001; Judge *et al.*, 1995) the supervisors were asked to record career-related achievements the subordinate (i.e., respondent) attained during the past year. First, they recorded how many *promotions* (upward job level changes) the subordinate attained or had been offered during the past year: 0, 1, 2, >2. Supervisors also rated the extent to which the subordinate's *leadership responsibilities* were increased during the prior year whether the subordinate was at the same level of job or at a higher level (i.e., the increase in how many people supervised, team size or department size, etc.). Seven-point scales were used

for responses, ranging from (0) None to (6) An Extreme Amount. Finally, supervisors recorded the amount of *pay increase* in terms of total amount of compensation from the subordinate's job during the prior year (combining salary and bonus, stock options, and any other forms of compensation). Responses in terms of pay raise per cent were in seven different categories: 0%, 1–2%, 3–4%, 5–6%, 7–8%, 9–10%, >10%.

Data analysis

Prior to testing hypotheses and the model, we ran confirmatory factor analyses (CFAs) to verify the discriminant validity among six factors measured by respondents at Time 1: error management, error aversion, three MTL subscales, and MTDL. Because there were a large number of items in the MTDL scale, we used item parcelling. Parcelling involves averaging multiple item scores to construct parcels that are utilized in a CFA. Item parcelling helps to mitigate challenges associated with large numbers of items relative to the sample size and is warranted in studies that are focused principally on relationships among constructs (Little, Cunningham, Shahar, & Widaman, 2002), such as the present study. Item parcelling is a common approach (Bandalos & Finney, 2001) that has been applied in research across disciplines such as organizational research (Bagozzi & Edwards, 1998), marketing (Singh & Rhoads, 1991), education (Cook, Dorans, & Eignor, 1988), and psychology (Russell, Kahn, Spoth, & Altmaier, 1998; Schau, Stevens, Dauphinee, & Del Vecchio, 1995).

Three 3-item parcels served as indicators for error management and two 3-item parcels were used as indicators for error aversion culture. Three 3-item parcels were created as indicators for each of the three dimensions related to MTL (affective-identity, social-normative, and non-calculative). For MTDL, five parcels were created through random assignment of 7–8 items to each parcel and a mean was computed. The five parcels then were used as indicators of a single-factor for MTDL. Confirmatory factor analysis revealed good fit for the 6-factor model (CFI = .95; RMSEA = .07; SRMR = .06). In addition to the six-factor model, we tested a series of nested models to (1) ascertain whether employees' discriminated among their perceptions of environmental cues and their leadership-relevant motivations, (2) evaluate employees' distinction between environmental perceptions and between leadership-relevant motivations, and (3) assess the degree to which employees differentiated among leadership-relevant motivations. The first alternative model tested a one-factor model in which error management, error aversion, MTL and MTDL all loaded onto one factor (CFI = .52; RMSEA = .24; SRMR = .20). The second alternative model tested a two-factor model in which we loaded Error Management and Error Aversion onto the same factor and loaded MTL onto the same factor as MTDL (CFI = .58; RMSEA = .22; SRMR = .19). The third alternative model generated a three-factor model in which MTL and MTDL loaded onto the same factor whereas Error Management and Error Aversion loaded onto their own factors (CFI = .70; RMSEA = .20; SRMR = .16). All three nested models indicated significantly worse fit than the baseline six-factor model. These results support the discriminant validity among error management, error aversion, MTL, and MTDL.

We tested the hypothesized relationships with path analysis using MPLUS 7.2 (Muthén & Muthén, 2014). Each construct's items were averaged to compute a single score. In addition to the default option of allowing the exogenous variables (i.e., error management and error aversion culture perceptions) to covary, the endogenous dimensions of MTL (i.e., affective-identity, social-normative, and non-calculative) were allowed to covary and measures of career success (i.e., pay, promotions, increase in leadership responsibilities)

were allowed to covary because they reflect an employee's broader motivation to lead and career success, respectively.

Results

Table 1 provides the means, standard deviations, and intercorrelations among error management, error aversion, MTL dimensions, MTDL, leadership capacity, and career success (i.e., promotion, leadership responsibilities, & pay increase). The item reliabilities are shown on the diagonal.

Path analysis results

Figure 1 shows the hypothesized model. The fit statistics for the hypothesized model demonstrated good fit to the data, $\chi^2(23, N = 151) = 18.36$, ns; CFI = 1.00; RMSEA = .00; SRMR = .05. These fit indices are in line with recommended levels in the extant literature (Lance, Butts, & Michels, 2006; Marsh, Hau, & Wen, 2004). We examined four alternative models to evaluate the robustness of our hypothesized path model. The first two alternative models assessed alternative relationships between MTL and MTDL. First, we reversed the order of MTL and MTDL whereby MTDL has an indirect effect on leadership capacity through the MTL dimensions. The three MTL dimensions did not have significant direct effects on leadership capacity, resulting in marginally worse fit than the hypothesized model (CFI = .98; RMSEA = .04; SRMR = .06). Second, we investigated whether MTL and MTDL occurred concurrently rather than in the hypothesized causal order. We removed the direct effects from MTL dimensions to MTDL and then correlated their error terms. We then modelled paths from MTL dimensions and MTDL to leadership capacity. As in the first alternative model, none of the three MTL dimensions predicted significant variance in leadership capacity. The second alternative model demanded three additional degrees of freedom but failed to improve upon the hypothesized model's fit to the data, suggesting that the hypothesized model should be retained in favour of theoretical parsimony.

The last two alternative models examined the degree to which mediated paths are partially or fully mediated. The third alternative model tested a model in which MTL dimensions fully mediate the path from error management and error aversion to MTDL. This model had significantly worse fit than the hypothesized model (CFI = .95; RMSEA = .06; SRMR = .06). We tested a fourth alternative model by adding paths directly from MTDL to three measures of career success in which leadership capacity partially mediates the link between MTDL and measures of career success. The paths linking MTDL to measures of career success were not significant. In addition, the alternative model required three additional degrees of freedom but failed to significantly improve upon the hypothesized model, indicating that the partially mediated relationship is less parsimonious than the hypothesized model. Taken together, these findings indicate that the hypothesized model fits the data well and fits better (or is more parsimonious) than alternative models. We thus proceeded to test the proposed relationships within the hypothesized path model.

The significant standardized effects for the hypothesized model are shown in Figure 2. H1a and H1b predicted that error management culture perceptions are positively related to an employee's MTL and MTDL, respectively. Results reveal that error management was positively associated with social-normative MTL ($\beta = .26$, $p < .05$) but not

Table 1. Means, standard deviations, and intercorrelations among culture perceptions, leadership motivations, leadership capacity, and career success

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Error management culture	3.70	0.72	(0.89)									
2. Error aversion culture	3.01	0.88	.06	(0.86)								
3. Affective-identity MTL	3.27	0.72	.06	-.17*	(0.84)							
4. Social-normative MTL	3.50	0.67	.25**	-.08	.51**	(0.87)						
5. Non-calculative MTL	3.34	0.70	.11	-.27**	.38**	.36**	(0.83)					
6. MTDL	3.77	0.81	.40**	-.04	.30**	.44**	.23**	(0.98)				
7. Leadership capacity	6.75	1.35	.16	.16	.01	.08	.06	.23**	—			
8. Promotion	1.64	0.79	.11	.13	-.01	-.01	-.03	.19*	.30**	—		
9. Leadership responsibilities	3.12	1.51	.15	.08	-.01	.04	-.07	.17*	.48**	.31**	—	
10. Pay increase	3.76	2.10	.06	.13	-.07	.05	-.05	.13	.22**	.42**	.38**	—

Notes. *n* = 151. Reliabilities reported on the diagonal in parentheses; MTL = motivation to lead; MTDL = motivation to develop leadership skills. **p* < .05; ***p* < .01.

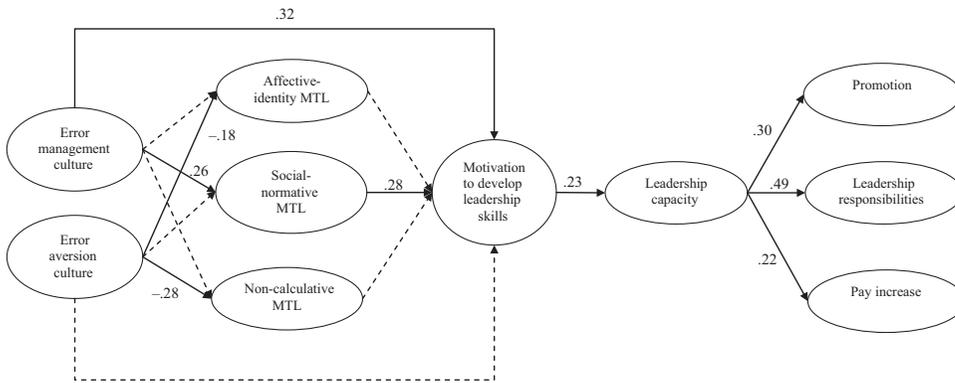


Figure 2. Path model results and standardized effects. Notes. $N = 151$; dotted lines indicate insignificant relationships. All reported coefficients are standardized and significant, $p < .05$.

affective-identity or non-calculative MTL. Consistent with H1b, error management was positively associated with MTDL ($\beta = .32, p < .05$). H1a was thus partially supported; Hypothesis 1b was supported.

Hypotheses 2a and 2b predicted that error aversion is negatively related with MTL and MTDL, respectively. As shown in Figure 1, error aversion was negatively associated with affective-identity ($\beta = -.18, p < .05$) and non-calculative MTL ($\beta = -.28, p < .05$) but was not significantly associated with social-normative MTL or MTDL. Hence, Hypothesis 2a was partially supported, and Hypothesis 2b was not supported.

Hypothesis 3 predicted that MTL is positively related with MTDL. Social-normative MTL had a positive and significant relationship with motivation to develop leadership skills ($\beta = .28, p < .05$) but affective-identity and non-calculative MTL did not. H3 was thus partially supported. Consistent with predictions, Figure 2 reveals that MTDL positively predicted leadership capacity ($\beta = .23, p < .05$), and leadership capacity related positively to all indices of career success (e.g., promotion, increased leadership responsibility and pay increases) ($\beta = .30, p < .05$; $\beta = .49, p < .05$; $\beta = .22, p < .05$, respectively). These significant relationships are in the predicted direction, thus supporting Hypotheses 4 and 5. We note the fact that the leadership responsibilities component of the career success variable seems the most strongly related to leadership capacity is perhaps not surprising given that supervisors probably have more immediate control over this than over the other two measures.

Indirect effects

The indirect effects within the hypothesized model are shown in Table 2. Results reveal that error management perceptions had significant indirect effects ($p < .05$) on MTDL, leadership capacity, and one indicator of career success: leadership responsibilities. Error management perceptions had a marginally significant ($p < .10$) indirect effect on two other indicators of career success – promotion and pay increase. Error aversion perceptions did not have an indirect effect on MTDL, leadership capacity, or career success. Table 2 indicates that social-normative MTL had significant indirect effects on

leadership capacity and leadership responsibilities with a marginally significant indirect effect on promotion. MTDL exhibited a significant indirect effect on two indicators of career success – promotion and leadership responsibilities – and a marginally significant indirect effect on the third indicator of career success, pay increase. The indirect effects of MTDL versus MTL on outcomes such as promotions, pay, and leadership responsibility are generally more than double for MTDL in comparison to MTL, consistent with findings discussed above. Consequently, as expected, MTDL has a larger direct and indirect effect on an employee's career success than does MTL. Overall, the hypothesized model accounted for 9.1%, 23.5%, and 4.6% of the variance in promotion, leadership responsibilities, and pay increase, respectively.

Supplementary analyses

We conducted supplementary analyses using hierarchical linear regression to investigate several *post hoc* questions related to the study's results. First, two of the MTL dimensions did not exhibit significant direct effects on MTDL, but it is possible that interactions between MTL dimensions may account for additional variance in MTDL. We thus tested the interaction effects by centring each MTL dimension and creating three product terms. More specifically, we tested whether MTDL is higher when affective-identity MTL moderated the effect of (1) social-normative MTL or (2) non-calculative MTL and when social-normative MTL moderated the effect of (3) non-calculative MTL. After accounting for the direct effects of error management culture, error aversion culture, and the three MTL dimensions, all three interaction terms failed to predict significant variance in MTDL. Second, we tested the relative incremental variance in leadership capacity explained by MTL dimensions and MTDL. We entered the three MTL variables in the first step followed by the MTDL variable in predicting leadership capacity. We then reversed the order of the motivation variables. In the first model, MTDL predicted an additional 3.3% variance in leadership capacity beyond the variance explained by MTL dimensions. The second model revealed that MTL dimensions failed to explain significantly more variance in leadership capacity beyond variance explained by MTDL.

In addition to the supplementary regression analyses, we conducted relative weights analyses (Miller, Konopaske, & Byrne, 2012; Tonidandel, LeBreton, & Johnson, 2009) using RWA Web (Tonidandel & LeBreton, 2015) to partition the total variance explained in leadership capacity (approximately 5.6%) among leadership-relevant motivations. MTDL was responsible for 86.61% of the total variance explained whereas affective-identity, social-normative, and non-calculative MTL accounted for 3.35%, 4.09%, and 5.94%, respectively. However, the confidence interval tests of significance indicated that only MTDL's relative weight was statistically significant. Taken together, results support the causal order between the leadership motivations in the hypothesized model and suggest that MTDL is a more proximal predictor of leadership capacity than is MTL.

Discussion

Based upon multisource data collected over a period of 1 year, this study makes a number of contributions to theory while also having implications for practice. It contributed to the leadership and leadership development literature by testing and extending ideas embedded in Chan and Drasgow's (2001) theory of leader development. We addressed the call to explore situational factors in relation to MTL; distinguished between two types of leader motivation – MTL (Chan & Drasgow, 2001) and MTDL; integrated and extended

the idea of leadership capacity; and evaluated empirically the extent to which MTDL and leadership capacity are mechanisms through which MTL influences leader career success. Taken together, results highlight theoretical and practical implications that we discuss in detail below.

Relationships between error management/aversion perceptions with leadership motivations

Contrary to our hypotheses, employees' perceptions of error management and error aversion culture do not uniformly influence leadership motivations. Different contextual cues yield different effects on leadership-relevant motivations. Results show that error management culture compels employees to lead out of a sense of duty and responsibility (i.e., social-normative MTL) as well as to develop leadership skills. The proactivity literature supports this finding because a constructive approach to errors creates a supportive and autonomous situational context that motivates employees to adopt a proactive orientation towards work. That is, supportive contextual cues build employees' confidence, perceived control, psychological ownership, psychological safety, and positive affect. These positive psychological states collectively encourage employees to take responsibility for setting, striving towards, and accomplishing goals (Grant & Parker, 2009; Parker, Bindl, & Strauss, 2010). In contrast, a punitive approach to errors appears to increase the perceived psychological costs of leading. Results indicate that employees are less likely to be motivated to lead – when they like to be in charge (i.e., affective-identity MTL) or when they do not see benefits or perquisites associated with leading (non-calculative MTL) – in an error aversion culture. In such a constraining environment, employees may experience low psychological safety, low control over outcomes, and negative affect, diminishing their motivation to lead. These findings imply that significant costs exist to avoiding and punitively reacting to errors.

From a molar perspective, error management culture perceptions exhibited a significant effect on leadership motivations, leadership capacity, and career success whereas error aversion culture perceptions did not. Our results at the individual level parallel those at the organizational level. van Dyck *et al.* (2005) similarly found that error aversion demonstrated a weaker effect on organizational performance than did error management. In sum, this study's findings substantiate the importance of Chan and Drasgow's (2001) call for research into situational factors that influence employees' desires and aspirations to pursue leadership roles and responsibilities.

The relationship between two leadership motivations – MTL and MTDL

In addition to linking error management culture with leadership motivations and career success, this study provided initial support for differentiating MTDL from MTL. Our findings suggest that it is not advisable to assume that all employees are equivalently motivated towards developing leadership skills nor can we assume that people who desire to be leaders will also want to develop leadership skills. Instead, these constructs can be readily differentiated and have somewhat dissimilar empirical results. On the surface, it appears intuitive that a person will possess both MTL along with the MTDL. Upon deeper examination, not all motivations to lead compel employees to develop leadership skills. Results suggest that employees who feel a sense of responsibility, duty, and obligation to lead are more inclined to pursue training and development to acquire or improve leadership skills, abilities, and competencies. Perhaps these individuals are motivated to

develop or to improve skills to better fulfil social-normative expectations associated with the leadership role. However, as our findings demonstrate, it is also possible that an individual may desire to be a leader (e.g., a manager or an executive with significant leadership responsibility), yet not be particularly motivated to develop leadership skills.

Employees with an affective-identity MTL may enjoy and prefer leading, but this does not compel them towards developing leadership skills – perhaps enjoyment alone is not reason to work towards development and improvement. Also those with a non-calculative MTL may be unmotivated towards leadership for personal benefits and therefore are not motivated to personally develop themselves for the role. Overall, it appears that it is the employee who is driven out of a sense of duty and social obligation, not enjoyment or dynamics around personal benefit, who will be motivated to develop and improve leadership skills. Considering the effects of error management culture on leadership motives discussed earlier along with the effects of motivation to lead on motivation to develop being discussed here, this study underscores the importance of normative social and cultural influences. Cultural norms involving constructively managing errors affect perceived social-normative obligations towards leadership – these sociocultural normative influences drive leadership motivation, leader development, and career success. Stated simply, a culture that emphasizes norms, policies and procedures dealing with errors in a constructive way results in higher motivation to lead because of social-normative expectations and obligation and this results in higher motivation to develop leadership, greater leadership capacity, and higher career success.

Given the central role that affects, intrinsic enjoyment and thoughts about benefits or rewards often play in motivational literature, it is interesting that it was the social-normative dimension of motivation to lead rather than the affective or non-calculative dimensions that had significant effects on motivation to develop. Although this seems counterintuitive, in an area of behaviour such as leadership it may not be surprising that motivations to fully develop and improve one's capabilities would be driven by a sense of duty and obligation to others and to the organization. Hannah, Jennings, Bluhm, Peng, and Schaubroeck (2014) suggest that there are shortcomings in relying too much on individualistic cognitive-calculative motivations and a need to examine concepts such as duty and obligation in understanding leadership phenomena. Hannah *et al.* define 'duty orientation' as 'an individual's volitional orientation to loyally serve and faithfully support other members of the group, to strive and sacrifice to accomplish the tasks and missions of the group, and to honor its codes and principles' (p. 220). Based on the 'psychology of obligation' (Schwartz, 1983) and 'deonance' theory (Folger, 2012), employees sometimes pursue actions based upon obligations and perceived moral responsibilities and group expectations that supersede self-interest. Hannah *et al.* (2014) state that 'duty-related concepts, such as loyalty, honor, and code, are grounded in a commitment to the ethics of one's community in which individuals conceive of themselves as office holders with certain obligations and responsibilities to the larger group' (p. 221). While the research by Hannah *et al.* did not link such orientation with motivation to lead, this idea aligns very well with a social-normative motive to assume leadership roles because it is the right thing to do in order to serve an organization or followers.

In duty orientation, one feels compelled to 'expend effort, accept personal sacrifices or risk or loss, and otherwise strive to support the accomplishment of the group's tasks and missions' (p. 222). While research on duty orientation has not explicitly targeted leadership development motives as outcomes, leadership and leadership development can involve personal sacrifices that enhance the effectiveness of others and the organization. Striving to improve and develop leadership skills may result in personal

risk and challenge, but to the extent that one is driven by a sense of duty or obligation, leadership development motives may be activated. Further supporting these ideas, other research literature has suggested that self-development can be driven by a motive to serve others and/or an organization (cf. Maurer, Pierce, & Shore, 2002). As stated by McEnrue (1989), ‘the process of self-development requires employees to sacrifice their own time, energy, and other resources both on and off the job’ (p. 58). Hannah *et al.* (2014) further suggested that duty orientations can be activated based upon the situational circumstances present in a given context. In fact, other research has linked organizational support perceptions with duty orientation and organizational citizenship behaviour or behaviours intended to benefit and organization (AlKerday, 2014). Similarly, in a context where constructively managing errors to enhance organizational effectiveness is emphasized, taking on the responsibility to lead and problem solve out of a sense of duty and obligation may be more likely, resulting in a motive to develop and improve leadership capability. Thus, research literature on duty orientation, development in order to serve an organization, and situational influences on these processes reinforces the findings of the present study – that a context in which productively learning from and managing errors towards organizational effectiveness enhances a sense of duty and obligation to lead and this compels one to strive and develop one’s leadership capability, resulting in greater leadership capacity and ultimately success.

Clues for explaining the link between culture and performance

To date, the mechanisms linking error management culture with firm performance remain equivocal (van Dyck *et al.*, 2005). Although our study was focused at the individual level, our findings reveal one set of mechanisms through which error management culture influences leader career success – an outcome with the potential to generate beneficial effects for the larger organization’s performance. Evidence suggests that human capital investments improve organizational performance. Meta-analytic results, incorporating 66 studies examining the relationship between human capital and firm performance, suggested that investments in strategic human resource practices – such as ongoing training and development – enhance human capital and subsequently improve firm performance (Crook *et al.*, 2011). Furthermore, contextual and individual factors can contribute to ROI in leadership development (Peters, Baum, & Stephens, 2011). Consistent with these findings, our results show that organizational culture perceptions can positively or negatively influence employees’ MTL or MTDL and thus capitalize (or fail to capitalize) from the full value of their human capital in terms of leadership capacity and leader career success. In sum, our results reveal that employees’ culture perceptions, leadership motivations, and leadership-relevant outcomes within organizations may shed insight into the link between error management culture and firm performance.

Practical implications

Organizational leaders must be attentive to the effect of error culture on leadership development programs. Organizations challenge their employees with stretch goals, or assignments that are outside of their comfort zone. These demands may involve stimulating creativity and innovation as well as developing their leadership capacity. A frequent cause for concern for employees adopting stretch goals is the risk/reward trade-off. Especially in high-performance organizations, participants may ask: ‘What if I fail?’ (Kerr & Landauer, 2004). In companies where there is a great emphasis on reducing risk

and avoiding failure, the punishment for failure (e.g., termination, lost promotions, budget reductions and lost decision rights) overshadows the perceived benefit of succeeding (Kerr & Landauer, 2004). Organizations can attenuate this anxiety by managing errors constructively (van Dyck *et al.*, 2005). Organizations can create an environment that is 'failure-tolerant' (Farson & Keyes, 2002) to help employees overcome their fear of failure by encouraging intelligent risk taking. Managers can promote 'productive mistake making' by pursuing a reflective approach to failures. This supportive contextual environment for learning contributes to employees seeking challenges and taking risks, being motivated by social obligation towards leading others, which results in the development of new skills and capabilities and enhancing motivation for leadership and leadership development. Implementing a supportive culture for risk taking and 'productive mistake making' may thus be essential to enhance leadership motivations, leadership capacity, and career success.

Supportive cultures for risk taking can assist executives in their efforts to build leadership capacity within the organization and facilitate leader career success through enhancing employees' MTDL. Our results suggest that efforts to increase employees' MTDL in human resource policy and interventions may be more beneficial than developing employees' motivation to lead alone. At the same time, human resource executives should make developmental opportunities available and accessible for existing and future leaders to build their leadership capacity. These targeted efforts promise to help organizations meet the growing demand to develop leadership talent (The Conference Board, 2005).

Limitations

As is the case with all research, this study has several limitations. First, our study's design collected error management/aversion and leadership motivations concurrently from the same source (i.e., employees). Questions thus remain about the causal ordering between culture perceptions and leadership-relevant motivations. Theoretically, culture and social cognition theory cumulatively suggest that culture is an environmental cue that influences employees' cognitive processes and perceptions (Fiske, 1993; Ostroff, Kinicki, & Muhammad, 2013). Motivation is an implicit response to those perceptions. Therefore, employees' individual perceptions are essential to understanding their motivations (McEnrue, 1989). Although theory supports the hypothesized link between error management/aversion culture and leadership-relevant motivations at a conceptual level, we are unable to definitively rule out the potential for reverse causality between an individual's culture perceptions and leadership-relevant motivations. Future research can lend clarity to this relationship by measuring error culture as a shared contextual cue that reflects agreement among multiple respondents about values, beliefs, attitudes, and assumptions within a unit. This approach positions error culture as a more objective component of a unit's social context that subsequently influences an individual's psychological motivations.

A second limitation is that we did not collect organizational level performance and error management data. Rather than detailing organizational mechanisms linking error management and performance, the focus of the present study was on individual perceptions, individual leadership motivations, and outcomes (i.e., behaviour). Our focus offers unique insight into how employees' perceptions affect their underlying motivations and subsequent behaviour. As such, our findings have indirect implications for understanding the link between error management and firm performance.

Finally, we collected data from a sample with diverse demographics and occupational backgrounds. This feature of the data enhances the overall generalizability and variance among respondents and their organizations compared to what could be expected among respondents from a single organization or one type of job. Despite these benefits, diverse organizational conditions create error variance in measures of career success because they are likely to be influenced by company policies, industry and occupational norms, and local conditions. Despite these limitations, this study's research design is offset by a number of significant strengths including data collected over 1 year from multiple sources and a demographically and occupationally diverse sample of respondents focusing on novel issues that are valuable to theory and practice. We hope that future research builds on these findings to further elucidate the effects of the key constructs investigated here on individual, leader, and organizational effectiveness.

Acknowledgements

This article was presented at the Annual Conference of the Academy of Management, OB Division, Boston, August 2012. This article is based, in part, on research conducted under contract #W74V8H-05-K-0001 for the U.S. Army Research Institute for the Behavioral and Social Sciences, Arlington, VA, and as reported to that sponsor in technical report #1275. Note that the focus of the present study is based upon supplementary data collected as part of a larger effort for that sponsor that does not overlap entirely with the present work. The view, opinions, and/or findings contained in this article are those of the authors and should not be construed as an official Department of the Army position, policy, or decision.

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Received 22 March 2016; revised version received 16 May 2017

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