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David M. Wallace
United States Naval Academy

Stephen J. Zaccaro
George Mason University

WHO WANTS TO BE HERE? Empirically Investigating Motivation and Engagement During Leader Development

Abstract

We present a framework for understanding the relationship between individual differences in leaders' motivations and their engagement in leader development, and we empirically test that framework across three different operationalizations of engagement, demonstrating that the motivation to develop as a leader (MTDL) is distinct from other motivational constructs (specifically, motivation to lead and motivation to learn) and that MTDL differentially predicts engagement in leader development. Finally, we provide evidence that motivation and engagement mutually reinforce each other in a virtuous spiral during leader development.

Introduction

Whether shifting from individual contributor to a leader/manager of others or promoting from junior to more senior leadership positions, leadership transitions require individuals to establish, expand, and augment their competencies into new areas of leadership and also to mature in their self-identities and cognitions of leadership (Lord & Hall, 2005; Maurer & London, 2018; Wallace, et al., 2021). This does not happen passively; individuals need to effortfully participate in the developmental process to achieve this expansion and growth — that is, they must engage in development. Both the quantity and quality of engagement will differ across individuals in any given context.

Several findings from Lacerenza and colleagues' (2017) meta-analysis of leadership training point to the critical need for researchers and practitioners to focus on engagement during leader development and the motivations undergirding individual engagement. First, the authors found that self-administered leader development opportunities are less effective than those that involve trainers. Second, mandatory leadership training produces better organization-level results compared to voluntary programs. Third, such mandatory programs are less effective at the individual level. In other words, organizations should not wait for individuals to develop themselves, rather they should develop and implement leadership education programs as mandatory. At the same time, developers need to reach non-volunteers to help them get more from these

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programs. As such, our purpose here is to explore the motivational underpinnings of engagement in leader development to assist those who educate leaders to better engage and include all leaders and potential leaders.

Previous research has identified various individual differences that influence engagement during leader development. Motivation to lead drives individuals to seek out management training (Chan & Drasgow, 2001). Learning goal orientation may focus leaders on learning as developmental opportunities become more challenging (DeRue & Wellman, 2009). Boyce, et al. (2010) and Maurer and Lippstreau (2010) brought these research lines together by focusing on an individual's self-initiated and self-directed development. Rosch and Villanueva (2016) built on this approach, expanding the model beyond the self-development context to consider the motivation to develop as a leader more generally.

We define motivation to develop as a leader (MTDL) as *the drive to improve leadership knowledge, skills, and abilities*. MTDL, an internal motivational drive, manifests externally in the expenditure of personal resources (e.g., time, money, effort, psychological capital) to engage in leader development (Rosch & Villanueva, 2016). Understanding how, when, and why these resource allocations differ across individuals - that is, understanding individual leaders' motivation to develop into a leader (or better leader) — is critical to understanding how to reach leaders and potential leaders who avoid (or at least do not seek out) leader development or are derailed during the challenging processes that make leader development successful.

Some previous research on leader development has acknowledged the need to consider motivation (e.g., Hannah & Avolio, 2010; Lombardo & Eichinger, 2000), and several researchers have proposed MTDL as a distinct construct (e.g., Maurer & Lippstreau, 2010; Rosch & Viallaneuva, 2010). However, there has been little to no empirical investigation of this construct. Indeed, the empirical literature aournd leaders' motivation has thus far largely focused solely on the motivation to lead (MTLead) as the driving factor behind leaders' engagement in development (e.g., Chan & Drasgow, 2001; Stiehl et al., 2015). Though related, MTDL is distinct from MTLead (a person's desire to take on leadership roles and responsibilities; Chan & Drasgow, 2001). Having a strong motivation to take charge does not necessarily translate directly to allocating attentional resources toward learning *how* to be in charge. Neither is MTDL the same as motivation to learn (a trainee's desire to learn the content of training; Noe, 1986). People who are driven toward learning in general may not be interested in the specific context of developing as leaders. Becoming a leader requires a unique commitment, and investigations around individual differences in leader development should focus on motivational constructs specific to that context.

An empirically grounded understanding of the roots of motivation and how it drives and changes behavior in the leader development context is one key to expanding our understanding of individual differences and processes in leader development. By adopting such an approach, the present research contributes to the science by empirically examining the role of MTDL in engagement in leader development, and we help answer the call for the theoretical and empirical development of motivation in the context of leader development (see, for example, Day & Dragoni, 2015; DeRue & Myers, 2014; Hannah & Avolio, 2010). Additionally, by applying a cross-lagged panel design, we present the most robust empirical evidence to date supporting the theorized virtuous spirals of leader development in which leader development is a self-reinforcing process over time (Day & Harrison, 2007; Lord & Hall, 2005).

Expanding our knowledge of individual motivation in the context of leader development will facilitate the exploration of individual differences in leader development, enable practitioners to improve developmental programs to increase engagement, and help leaders navigate developmental experiences. This, in turn, will make leader development programs more effective, both at the individual and organizational level. Accordingly, we review the conceptual framework of MTDL and its role in predicting engagement during leader development and then empirically examine this framework.

Engagement in Leader Development

To understand the role of motivation in driving engagement of leaders in developmental processes, we must first expound upon what is meant by "engagement." Most activities in which leaders engage

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range in their developmental potential. Certain activities, assignments, or programs (e.g., coaching, job assignments, and action learning) are often referred to as "developmental;" they are deliberately designed to achieve developmental outcomes. While leadership activities that are not so designed may be less effective at bringing about development, that does not make them non-developmental.

At the very least, leader performance episodes represent practice — that is, repeated episodes in which complex skills become automatized and variance of performance is attenuated (Ackerman, 1988). On the other hand, when leaders engage in targeted development, they expend cognitive resources specifically toward improving future performance, partaking in *deliberate* practice, which not only reduces variability in performance but can also increase levels of performance toward expertise (Ericsson & Charness, 1994). Thus, we define engagement in leader development, then as *effortful activity directed toward the goal of improving leader performance*.

Engagement is a consequence of the choice to allocate resources toward learning, understanding, and mastering certain knowledge or skills (Fredricks et al., 2004) and refers to a broad range of behavioral, emotional, and cognitive processes representing participation by students in their own learning, including: interest, attendance, paying attention, concentrating and trying to understand, asking questions and initiating dialog, participating in learning activities outside of coursework, and participating in the governance of learning programs (Finn, 1989; Fredricks et al., 2004; Skinner & Belmont, 1993).

The extrapolation to leader development is straightforward. In the context of leader self-development, in which leaders not only take responsibility for seeking out opportunities to develop but also serve as the primary evaluators of their own development (Boyce et al., 2010; Reichard & Walker, 2016), the role of engagement may be most obvious as it is a definitional prerequisite for the learner. However, even when a leader is being developed (note the passive tense) by others, he or she must still make choices about the allocation of attentional resources toward learning from such developmental attempts. Allocating resources toward a process of active experimentation, feedback seeking, and reflection is essential to learning from experience (DeRue et al., 2012; Kolb & Kolb, 2009). This process is necessary whether the experience is gained through an episode that is designed to be developmental or through an episode that is primarily performance based. Put more succinctly, mere proximity to opportunities for leader development is insufficient — the leader must engage in the developmental process. Thus, across *both* "developmental" and "performance" contexts, engagement in leader development includes a broad variety of activities and cognitive reactions that drive the internalization of leadership lessons. Such activities include setting developmental goals, searching for and finding interest in developmental opportunities, seeking out feedback and mentoring, forming developmental networks, and reflecting on lessons to be learned.

The Role of Motivation in Predicting Engagement

The allocation of cognitive and other resources toward engaging in leader development is a manifestation of motivation. The term motivation describes internal processes that regulate the allocation of personal resources across behavioral options (Naylor et al., 2013). The choices individuals make regarding the expenditure of cognitive effort are the result of self-regulatory processes. Moreover, the amount of cognitive attention available to an individual for allocation is fixed and limited; motivation drives not only the direction toward which a person attends but also the proportion of limited attentional resources applied (Kanfer & Ackerman, 1989). When describing motivation, researchers typically discuss the *direction* of behavioral choices, the *intensity* of action, and the *perseverance* over time or challenges (Kanfer, 1990; Ployhart, 2008). Within the framework of resource allocation, these refer to the direction of attentional effort, the proportion of total attentional capacity allocated, and the continued allocation of attention (Kanfer & Ackerman, 1989). The results of these allocation choices may be observed in leaders' engagement in leader development.

The practice of leadership becomes increasingly complex as an individual develops and takes on greater leadership responsibilities (Mumford et al., 2007). The development of increasingly complex leadership skills requires the application of the same or more cognitive

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attention over time, rather than less (Day & Lance, 2004). Thus, in the context of leader development, attentional effort directed toward engagement must be at least maintained over time.

Additionally, leader development regularly takes place within the context of leader assignments; thus, leaders often must perform and develop simultaneously. The cognitive resources required to perform as a leader demand attentional resources away from engagement in leader development. In this way, the motivational processes that maintain focus on development over time and challenge are of critical concern to leadership educators.

Individual Differences in Motivation to Develop as a Leader. Chan and Drasgow (2001) defined motivation to lead as an individual difference that "affects a leader's or leader-to-be's decisions to assume leadership training, roles, and responsibilities and that affect his or her intensity of effort at leading and persistence as a leader" (p. 482). Here, engagement in leader performance and engagement in leader development are treated equivalently. However, there is a difference between activities of leading and activities that promote learning about leading; this difference mitigates the relationship between motivation to lead and engagement in leader development. To many leaders, goals related to the performance of leadership and goals related to the development of leadership competencies are distinct and in tension with one another. For other leaders, goals related to leader development suggest proximal outcomes tied to more distal leader performance. Thus, highly motivated leaders may be interested in leader development because it relates to leadership, but when engagement in development becomes more challenging, their performance goals may overwhelm their developmental goals, causing them to lose interest. Indeed, empirical investigations have revealed relatively weak correlations between motivation to lead and engagement in leader development (Key-Roberts et al., 2012; Maurer & Lippstreu, 2010).

MTDL is reflected in leaders' choices to engage in leader development, the intensity with which they pursue that engagement, and their perseverance as it becomes difficult, challenging, or resource intensive. MTDL distinguishes those who set developmental goals, seek out leader development opportunities, and continue to engage in development in the face of challenge from those who might avoid or relinquish developmental goals under the same circumstances. This will manifest in the setting of developmental intention, demonstrating interest during leader development activities, and seeking out the feedback needed to grow as a leader. In short, those with a higher MTDL are more likely to engage in leader development, even when accounting for motivation to lead.

Hypothesis 1: Motivation to develop as a leader is positively related to engagement in leader development, controlling for motivation to lead.

Distal Motivational Processes. As with any motivational choice during skill acquisition, the choice to direct and sustain limited resources toward developing as a leader is rooted in the distal motivational processes by which individuals evaluate whether learning a new competency will be valuable in relation to future performance and whether the application of personal resources will result in this learning outcome (Kanfer & Ackerman, 1989). For the developing leader, this means that an individual must determine that (1) leader development will lead to higher levels of future performance, and (2) that the application of attentional resources will result in leader development.

Identity Based Motivation to Lead. Although we have argued for the importance of MTDL as a driver of engagement that is distinct from motivation to lead, we do not discount the importance of MTLead as a driver of MTDL. MTLead is an antecedent of MTDL, not a competing source of motivation. The competing motivational sources are between the motivation to *perform* as a leader and the motivation to *develop* as a leader.

Individuals with a higher MTLead perceive higher levels of leader performance as more attractive, driving the allocation of resources toward achieving those higher levels by expending cognitive and other resources on engaging in leader development. Thus, MTLead drives the motivation to develop as a leader through a valuation

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process, which, in turn, drives engagement in leader development, suggesting that MTDL is the mediating mechanism that links these two constructs.

In their explication of MTLead, Chand & Drasgow (2001) recognized three motivational bases. Affective-identity MTLead reflects that some people enjoy leading seemingly because leadership is a central feature of their social identity; we refer to this aspect as identity-based motivation to leader. Social-normative MTLead reflects that some people feel a duty or responsibility to take charge due to social expectations, rather than an internalized, identity-based desire to lead. Finally, non-caluclative MTLead reflects that some individuals take charge without taking into account the costs associated with the burdens of leadership.

As it applies to leader development, we particularly note the importance of identity-based motivation to lead. Self-identification drives the individual to engage in tasks, activities, and behaviors that align with one's identities. We therefore see leader identity as a driver of learning in leadership. Leader development researchers have established the theoretical positive link between leader identity and engagement in leader development (Day & Harrison, 2007; Lord & Hall, 2005), and empirical research has produced evidence of such a link (Day & Sin, 2011; Hiller et al., 2006; Key-Roberts et al., 2012). In concurrence with this research, we predict a similar relationship.

Hypothesis 2a: Identity-based motivation to lead is positively related to engagement in leader development.

Hypothesis 2b: Motivation to develop as a leader fully mediates the relationship between identity-based motivation to lead and engagement in leader development.

Motivation to Learn. Participation in leader development is fundamentally challenging, takes place over a long term, and typically involves actual leader performance requirements (Day & Halpin, 2004). Leader development is an inherently introspective exercise, requiring maturation in identity and cognitions of leadership (Wallace et al., 2021). The introspective nature of leader development separates learning to be a better leader from simply improving competencies associated with leadership. MTDL encompasses not only engagement during a specific training event (the typical focus of motivation to learn), but also continued engagement in development through experience and reflection while also performing as a leader.

Motivation to learn refers to internal processes that drive individuals to expend personal resources toward learning activities in general, predicting outcomes such as skill acquisition, reactions to training, and training transfer (Colquitt et al., 2000; Colquitt & Simmering, 1998; LePine et al., 2004; Noe & Schmitt, 1986). Although learning goal orientation has been linked to positive leader development outcomes (Day & Sin, 2011; DeRue & Wellman, 2009; Dragoni et al., 2009), there is little scholarly work specifically regarding motivation to learn and leader development. Motivation to learn should be a distal predictor of positive leader development; however, the specificity of the leadership context and the uniquely developmental nature of leadership education likely attenuate the relationship between a general motivation to learn and engagement in leader development activities. In other words, not everyone who is generally motivated to learn will be energized to engage in leader development, even among those who are motivated to lead. For example, academic department chairs rarely engage in leader development, despite continued interest in research and learning (Gmelch, 2004).

On the other hand, individuals who are motivated to lead but who do not value learning may not be interested in participating in leader development. Indeed, in support of this approach, Key-Roberts and colleagues (2012) observed that learning goal orientation moderated the relationship between MTLead and participation in leadership self-development. In concert with this finding, we posit that motivation to learn should interact with MTLead to predict MTDL such that leaders who are lower in motivation to learn will demonstrate a weaker relationship between MTLead and MTLead.

Hypothesis 3: Motivation to learn moderates the positive relationship between motivation to lead and motivation to develop as a leader such that it is more positive for higher levels of motivation to learn as compared to lower levels.

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Spirals of Developmental Engagement

This motivation to seek out, engage in, and persevere through leader development opportunities results in motivation-performance spirals that further promote development. Identity based achievement motivation is a cyclical process: Not only does self-identification drive the individual to engage in tasks, activities, and behaviors that align with one's identities, but successful participation in those tasks, activities, and behaviors in turn reinforce an emerging identity (Eccles, 2009). Scholars in the leadership domain have tied this to leader development, postulating virtuous spirals of development in which leader self-identity will lead to a motivation toward leader development, which will further reinforce the leader self-identity (Day & Harrison, 2007; Day & Sin, 2011; Lord & Hall, 2005). We expect that MTDL is a state-like malleable quality, informed by both an increasing identification as a leader and a growing belief that leadership is a learnable skill. As such, we posit a virtuous spiral of development such that MTDL leads to engagement during a developmental activity which, in turn, leads to an increase in MTDL.

Hypothesis 4: Engagement in leader development is positively related to subsequent motivation to develop as a leader, and motivation to develop as a leader is positively related to subsequent engagement in leader development.

Together, the theory and hypotheses described above describe theoretical framework in which motivation to lead and motivation to learn contribute together to individual differences in motivation to develop as a leader. MTDL drives engagement by leaders in development, which, in turn, drives subsequent states of MTDL (see Figure 1). To empirically explore and confirm this framework, we conducted a series of studies to test these hypotheses across multiple leader developmental settings and multiple operationalizations of engagement in leader development.

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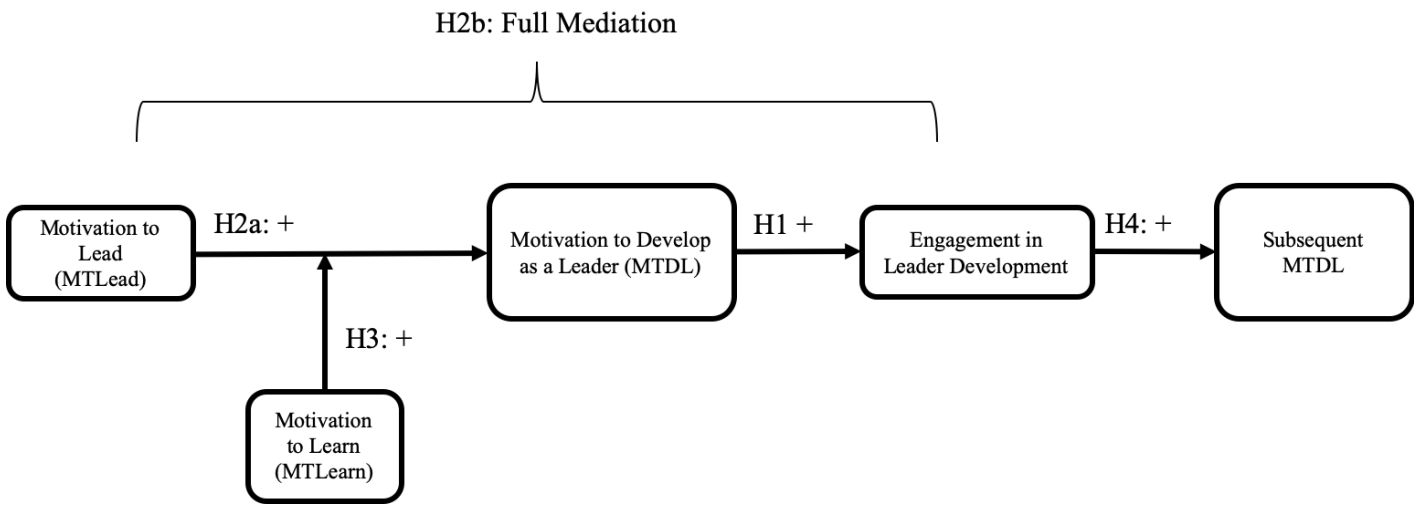

Figure 1. Illustration of hypothesized model

Method

Study 1. Our first study laid the foundation of the model by considering the effects of individual differences in motivation to develop as a leader on engagement during leader development. Engagement in leader development is best conceptualized as a continuum of cognitions and behaviors ranging from merely attending to having interest to active participation in the form of asking questions and seeking feedback. In the present study, we operationalized engagement in leader development as interest during a mandatory leader development activity. Though it may be considered a low-level form of engagement, interest correlates more strongly with deep-level learning than surface-level learning (Wigfield & Cambria, 2010), which is essential in leader development, particularly at advanced levels of leadership (Lord & Hall, 2005). In particular, interest may be an important factor during mandatory leader development activities (i.e., those in which students are required to participate, regardless of interest). While leaders may voluntarily choose to participate in leader development (e.g., as in leader self-development), they are frequently assigned mandatory leadership training events (e.g., lectures, classes, discussion groups, etc.), especially in programs housed in formal educational or developmental settings (e.g., within a leader development program for future exectuives). Lack of choice has been shown to be a negative predictor of training outcomes at the individual level (Baldwin et al., 1991; Hicks & Klimoski, 1987), yet imposing mandatory leader development programs may lead to positive outcomes for the organization as leadership education reaches a broader audience and not only individuals who self-select into leadership training (Lacerenza et al., 2017). The individual differences that drive interest (as a form of engagement) during leader development should be explored to better understand, and therefore promote, deep-level learning in *all* participants in such mandatory programs.

We recruited participants for Study 1 from students at a federal military academy. These students participate in a four-year undergraduate education and immersive leader development program designed to train commissioned military officers. In preparation for senior-year leadership roles (e.g., varsity team captain, president of extra- curricular clubs, or student-body leadership positions), selected students are required to participate in a mandatory weekend-long leadership training event in the Spring prior to their senior year. We recruited 77 participants from one of these events.

Participants. Although participation in the event was mandatory for each participant, participation in the study was voluntary. Out of 77 people invited to participate, 68 completed both surveys (response rate = 88%). Of the 68 participants, 21 (33%) were women, 43 (67%) were men, and four did not report gender. 27 were athletic

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leaders, 35 were student-body or extra-curricular club leaders, and six did not report their leadership category. The ages of the participants ranged from 20 to 23; just under half were 21. The majority of the participants were white, with seven participants identifying as African-American, four as Asian-Pacific Islander, and seven not reporting racial demographic information.

Measures. *Motivation to Develop as a Leader.* Motivation to develop as a leader was measured using a 3-item measure developed for this research program. This survey measured motivation to develop as a leader using a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items were: "In general, I have a strong desire to learn the skills associated with leadership;" "In general, I try to learn as much as I can about leadership;" and "I look forward to leadership training." Data was collected at the start of the weekend (T1) to gauge MTDL. Alpha reliability was .85.

Engagement in Leader Development: Interest. Engagement in leader development was operationalized in this study as interest. This was measured using the utility-value interest scale from Hulleman and colleague's (2008) course topic interest scale, tailored to be specific to the weekend training event. This measurement occurred during data collection at the end of the weekend (T2) to gauge utility-value interest in the developmental opportunity. Alpha reliability was .83.

Analysis and Results. All data analysis for this and the subsequent studies was conducted using R v 3.5.3.

To ensure the distinctiveness of our constructs, conducted a confirmatory factor analysis (CFA), comparing an oblique measurement model in which measures for the two constructs were constrained to loading onto their respective constructs and the latent constructs were permitted to covary to a single factor model in which all measures represented a single construct. The oblique two factor model fit the data significantly better than the single factor model ($\Delta\chi 2$ = 46.1, Δdf = 1, p < .001), providing support to the distinctiveness of MTDL and engagement in leader development (in the form of interest).

To test our hypotheses, we conducted a simple bivariate correlation analysis. In support of Hypothesis 1, that MTDL (measured at predicts engagement in leader development, we observed a positive correlation between MTDL, measured prior to the training weekend, and utility-value interest, measured at the end of the weekend (r = .48, p < .001). In other words, individuals who were motivated to develop as a leaders tended to find the developmental weekend more interesting. Results were not significantly different between leadership categories (i.e., athletic leadership vs. student body leadership).

Discussion. The focus of Study 1 was to test the relationship between motivation to develop as a leader and engagement in leader development. To confirm temporal precedence, we collected data over two waves, measuring MTDL prior to a mandatory weekend with developing leaders and then asking these leaders after the weekend to gauge the utility value of the subject matter — an operationalization of engagement in leader development. Our results supported a positive relationship between MTDL and engagement in leader development. Although relatively simple in design, this study provides the foundation for the follow-on studies that explore the distal motivational processes that influence MTDL, different forms of engagement in leader development, and the hypothesized spirals of motivation and engagement.

Study 2. Using a field study with individuals in a leader development program, engagement in leader development was operationalized as interest in Study 1. In Study 2, we turned to developmental intentions as another form of engagement in a study of the antecedents of motivation to develop as a leader.

Participants. To test our hypotheses regarding the antecedents of MTDL, we recruited 405 participants via Amazon's Mechanical Turk (MTurk) service. Participants were compensated $0.75 for participating in the survey; average completion time was seven minutes. After screening out participants who failed attention checks, failed to complete the survey, or reported unreliable responses (see discussion below), we retained 373 responses (reliable response rate = 92%). Of the 373 participants, 192 (51%) were men, 180 (48%) were women, and one did not report gender. The majority of participants (85%) were white with 24 participants identifying as African-American, 22 as Hispanic, 23 as Asian, and five as American Indian or Pacific Islander. The age of participants ranged from 18

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to 74 with a mean age of 37.2 years and a standard deviation of 11.7 years.

Use of MTurk. Recent research supports the use of Internet crowdsourcing, such as Amazon's Mechanical Turk, in researching behaviors and attitudes (Landers & Behrend, 2015; Paolacci & Chandler, 2014). In comparison to a standard Internet sample, the MTurk sample may include more females, non-whites, and older workers than other Internet samples (Buhrmester et al., 2011; Casler et al., 2013), and is typically more diverse, older, and more likely to be employed than student samples (Behrend et al., 2011). In other words, a sample collected from MTurk is likely more reflective of the general working population than data collected from college undergraduates or other Internet sources such as those from social media postings. Studies on the psychometric properties of MTurk data have been relatively positive. Buhrmester et al. (2011) found MTurk data to meet or exceed psychometric standards concerning both scale and test-retest reliability. Behrend et al. (2011) observed strikingly similar aggregated results between an MTurk sample and an undergraduate sample on personality and goal orientation measures. Rouse (2015) found lower reliability estimates for MTurk samples; however, when participants were asked about their attentiveness during survey completion, reliability estimates improved significantly. Thus, in addition to attention checks, a quality check question was inserted into the current MTurk study based on Rouse's (2015) best practice recommendations.

Measures.

Motivation to Lead. Identity based motivation to lead was measured using Chan & Drasgow's (2001) nine-item measure of affective-identity motivation to lead. This survey measures motivation to lead using a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Alpha reliability was 0.94.

Motivation to Learn. Motivation to learn was measured using LePine and colleagues' (2004) three-item measure. This survey measures motivation to learn in one dimension using a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). A sample item: "In general, I try to learn as much as I can from my courses." Alpha reliability was .92.

Motivation to Develop as a Leader. MTDL was measured as in Study 1. In the present study, alpha reliability was 0.94.

Engagement in Leader Development: Intentions. Engagement in leader development was operationalized in this study as six-month developmental intentions. To quantify intention to develop, participants indicated which of eight leader development activities (from Day's (2000) list of common experience-based leader development practices) they planned to engage in as a developing leader over the subsequent six months, and whether or not such activities were voluntary; if mandatory, we set the response to null. Overall, this represents a conservative approach to determining developmental intentions as it does not account for the availability of opportunities for development, potentially attenuating the relationship between motivations and intentions. The final measure was a sum of all planned activities.

Analysis and Results. The correlations among the variables measured in Study 2 are presented in Table 1.

Table 1

Means, standard deviations, reliabilities, and correlations of Study 2 variables

Variable	*M*	*SD*	1	2	3	4
1. MTLead	4.38	1.42	(.94)			
2. MTLearn	5.86	0.90	.34	(.94)		
3. MTDL	4.76	1.50	.70	.41	(.94)	
4. Int	2.16	2.25	.38	.28	.48	-

Note. M and *SD* are used to represent mean and standard deviation, respectively. Alpha reliabilities are on the diagonal. MTLead = Motivation to Lead, MTLearn = Motivation to Learn, MTDL = Motivation to Develop as a Leader, Int = Six-month developmental intentions. All correlations were significant ($p < .001$).

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To look for evidence of distinctiveness between MTLead and MTDL, we conducted a confirmatory factor analysis (CFA), comparing an oblique measurement model in which measures for the two constructs were constrained to loading onto their respective constructs and the latent constructs were permitted to covary to a single factor model in which all measures represented a single construct. The oblique two factor model exhibited acceptable fit statistics ($\chi 2 = 232$, df =53, $p < .001$, RMSEA = .095, CFI = .96, SRMR = .04, TLI = .95), and fit the data significantly better than the single factor model ($\chi 2 = 726$, df =54, $p < .001$, RMSEA = .18, CFI = .84, SRMR = .07, TLI = .81; $\Delta\chi 2 = 494$, Δdf = 1, $p < .001$), providing initial support to the distinctiveness of MTDL and MTLead. A confirmatory factor analysis (CFA) of all Study 2 measures, in which all items were constrained to load only onto their respective constructs, exhibited acceptable fit ($\chi 2 = 496$, df =224, p < .001, RMSEA = .06, CFI = .95, SRMR = .04, TLI = .95).

Hypothesis 1 posited a positive relationship between motivation to develop as a leader and engagement in leader development over and above identity-based motivation to lead. Hypothesis 2 predicted that motivation to develop as a leader would mediate the relationship between identity-based motivation to lead and engagement in leader development. Hypothesis 3 posited that motivation to learn would moderate the relationship between motivation to lead and motivation to develop as a leader such that this relationship is more positive when an individual is higher on motivation to learn. Altogether, these hypotheses describe a moderated mediation model with first-stage moderation (see Figure 1).

To test this model, we first conducted multiple regression analyses, following the Baron and Kenny's (1986) causal steps approach. In this approach, the proposed mediator is added stepwise to the equation relating the distal predictor(s) to the outcome variable. If the relationship between the predictor(s) and outcome are attenuated with the addition of the mediator variable to the model, mediation can be inferred. In addition, to more directly test the mediation hypotheses, we tested the indirect effects of MTLead on engagement through MTDL for significance using Preacher & Hayes' (2004) bootstrapping method, which directly measures the significance of the indirect regression path in which the predictor variable(s) influences the outcome variable through the mediator.

In the first step, we regressed the outcome variable (engagement in leader development) onto MTLead and then both MTLead and MTLearn, and then finally MTLead, MTLearn, and an interaction variable calculated by centering both predictors and then multiplying them together. This step provides evidence regarding the predictive relationship between distal predictors (MTLead and MTLearn) and the outcome variable, and any incremental variance in the outcome variable explained by adding the interaction variable provides evidence of moderation. In the second step of the causal steps approach, we regressed the mediator (MTDL) onto our three predictor variables (MTLead, MTLearn, and the interaction variable). In the third step we regressed the engagement in leader development onto MTDL to analyze the relationship between the mediator and the outcome variable. Finally, we regressed engagement in leader development onto all three predictors and the outcome variable, observing changes in the relationship between the predictor variables and the outcome variable; changes in these relationships (in particular, a reduction in the magnitude of the predictive weight of the other predictors when the mediator is added to the model) provide evidence of mediation.

Because hypotheses regarding mediation and incremental validity are statistically similar (Weems & Stickle, 2012), this model also provides the opportunity to test the incremental validity of MTDL over MTLead in predicting engagement in leader development. We can do so by observing the coefficient of determination for each equation (i.e., R^2 for the models with and without MTDL); a higher R^2 for the model including MTDL would be evidence of the incremental validity of MTDL over and above MTLead (and MTLearn) in predicting engagement in leader development. Table 2 displays the results of the regression analysis.

Table 2

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Regression results for Study 2 mediated moderation model

Causal Steps Analysis									
Variable	**Equation 1**			**Equation 2**			**Equation 3**		
Step 1 – Effects on Outcome Variable (Developmental Intentions)	b	*p*	R^2	b	*p*	R^2	b	*p*	R^2
Intercept	-.50	.167	-	-2.45	<.001	-	-2.49	<.001	-
MTLead	.61	<.001	.15	.52	<.001	-	.51	<.001	-
MTLearn	-	-	-	.40	.002	.17	.41	.003	-
MTLead x MTLearn	-	-	-	-	-	-	.02	.85	.17
Step 2 –Effects on Mediator (MTDL)	b	*p*	R^2	b	*p*	R^2	b	*p*	R^2
Intercept	1.57	<.001	-	.06	.87	-	.04	.91	-
MTLead	.73	<.001	.48	.66	<.001	-	.66	<.001	-
MTLearn	-	-	-	.31	<.001	.51	.31	<.001	-
MTLead x MTLearn	-	-	-	-	-	-	.01	.84	.51
Step 3 – Effects on Outcome Variable (Developmental Intentions)	b	*p*	R^2	Step 4 – Effects on Outcome Variable (Developmental Intentions)			b	*p*	R^2
Intercept	-1.27	<.001	-	Intercept			-2.54	<.001	-
MTDL	.73	<.001	.23	MTLead			.14	.20	-
				MTLearn			.23	.09	-
				MTLead x MTLearn			.01	.93	-
				MTDL			.58	<.001	.23

Test of Direct and Indirect Effects (10,000 bootstrapped samples)

Direct Effect on Developmental Intentions	Effect Point Estimate	95% CI LL	95% CI UL	Indirect Effect through MTDL	Effect Point Estimate	95% CI LL	95% CI UL
MTLead	.14	-.06	.37	MTLead	.38	.24	.53
MTLearn	.23	-.03	.48	MTLearn	.18	.09	.29
MTLead x MTLearn	0.0	-.18	.18	MTLead x MTLearn	.01	-.05	.06

Note. MTLead = Motivation to Lead, MTLearn = Motivation to Learn, MTDL = Motivation to Develop as a Leader. 95% CI = 95% confidence interval, LL=lower limit of the estimate, UL = upper limit of the estimate

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In Step 1, MTLead (b = .51, $p < .001$) and MTLearn (b = .41, $p = .003$) independently predicted engagement in leader development; however, the interaction between MTLead and MTLearn was not significant and did not add to variance explained. In Step 2, MTLead (b = .66, $p < .001$) and MTLearn (b = .31, $p < .001$) independently predict motivation to develop as a leader, and again the interaction term was not significant. Thus, Hypothesis 3 was not supported. In Step 3, MTDL (b = .73, $p < .001$) was a significant predictor of engagement in leader development. Finally, when all variables were included, MTLead (b = .14, $p = .20$) and MTLearn (b = .23, $p = .09$) were no longer significant predictors of engagement in leader development and MTDL (b = .58, $p < .001$) was, suggesting full mediation of the effects of MTLead and MTLearn on engagement in leader development by MTDL. Finally, using 10,000 bootstrap samples to directly analyze the significance of the indirect effects through MTDL, the 95% confidence interval around the indirect effect of MTLead ranged from 0.24 to 0.53 and the indirect effects of MTLearn ranged from .09 to .29. Since these confidence intervals do not include 0, these results provide evidence of mediation. The direct effects of the predictor variables did not reach significance, suggesting full mediation. Thus, Hypotheses 2a and 2b were supported. In addition, we observed a delta R^2 of .06 when MTDL was added to the models predicting engagement in leader development, providing evidence of incremental validity for MTDL, further supporting Hypothesis 1.

Discussion. Study 2 provided additional evidence supporting our conception of MTDL as an individual difference that predicts engagement during leader development. The data supported MTDL as a separate construct from MTLead and as a mediating mechanism between MTLead and leader developmental intentions. As expected, those who more strongly identified as leaders expressed a greater desire to learn how to lead, and this desire appears to be a driver of engagement in leader development. Additionally, the results of Study 2 support the conceptualization of MTLearn as an additional, independent source of motivation to develop as a leader. However, the hypothesized interactive relationship between motivations to lead and to learn was not significant. Thus, although we observed evidence that MTLead and MTLearn each directly influence MTDL, we did not find evidence that the level of MTLearn has an influence on the MTLead to MTDL relationship.

Study 3. Another example of engagement in leader development is seeking feedback during a leader development activity. Feedback seeking behavior involves attendance to cues of performance and proactive search for such information by asking others, particularly supervisors (Ashford & Cummings, 1983). Within the context of a leader developmental opportunity, the choice to seek out feedback is driven by an individual's motivation to develop as a leader. Hypothesis 4 posited a spiral of development in which individuals are motivated to develop as leaders and then engage in leader development and then, subsequently, are more motivated to develop further. We studied this model with students assigned to a summer leader development program at the same academy as Study 1. This program is an outdoor adventure-based leader development program in which crews of 10 students train together and then sail to ports along the East Coast of the United States. Participation in this program has been associated with increases in leader identity and leader self-efficacy on par with or higher than other leader development opportunities offered by the same institution (Huey et al., 2014), though, in the primary author's experience, participants are often unaware of the training as a leader development opportunity when they volunteer for the program.

Data was collected during each of three sessions of the training program during a single summer. Participants completed self-report surveys of MTDL and feedback seeking behavior (our operationalization of engagement in leader development in this study) at three points during their particular session: following a week of coastal training (T1); following the subsequent week of offshore sailing (T2); and upon return to home one week after that (T3).

Participants. Of the 242 students invited, 172 (71% participation rate) agreed to participate in the study; 139 (81%) were men and 35 (17%) were women. This is closely reflective of the academy's overall gender ratio (Huey et al., 2014). Ages ranged from 18-26 years at the time of the survey; 85% of participants were between 19 and 22.

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Measures.

Feedback Seeking. Feedback seeking behavior was measured using Vandewalle et al.'s (2000) five-item self-report measure of FSB. An example item: "Since the last survey, how frequently have you asked your coach about your role expectations." Alpha reliability across the three waves was .76, .83, and .85.

Motivation to Develop as a Leader. To capture the state-like quality of MTDL for this study, we changed the stem of our previously used MTDL measure from "in general" to "during [this summer training activity]." An example item: "During [this summer training activity], I look forward to learning new skills for leadership." Alpha reliability across the three waves was .93, .94, and .96.

Analysis and Results. As would normally be expected in a longitudinal study with volunteer participants, there was some attrition (survey level missingness) as well as some item and construct level missingness (see Table 3).

Table 3

Response rates by survey for Study 3

Survey	Full Resp	Resp Rate	Partial Resp	Partial Resp Rate	Non-Resp	Non-Resp Rate	Total Resp	Retention Rate
Time 1	170	99%	2	1%	-	-	172	-
Time 2	131	98%	2	2%	39	29%	133	77%
Time 3	119	98%	2	2%	51	42%	121	70%

Note: Full Resp = full respondents (respondents completed every item on the survey); Partial Resp = partial respondents (respondents who completed at least one item on the survey); Non-Resp = non-respondents (participants who did not complete any items on a survey); Resp Rate = response rate (respondents divided by total respondents); Total Resp = total respondents (total of full plus partial respondents); Retention Rate = total respondents divided by total participants (n=172).

As such, we used full information maximum likelihood (FIML) to maximize statistical power and provide the most accurate estimates of parameters and standard errors for use in hypothesis evaluation (Graham, 2003; Newman, 2014).

Table 4 presents the means, standard deviations, reliabilities, and bivariate correlations among the Study 3 variables.

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Table 4

Means, standard deviations, reliabilities, and correlations of Study 3 variables

Variable	M	SD	1	2	3	4	5	6
1. MTDL_T1	4.91	1.59	(.93)					
2. MTDL_T2	4.71	1.47	.76	(.94)				
3. MTDL_T3	4.49	1.62	.70	.88	(.96)			
4. FSB_T1	3.76	1.22	.39	.44	.43	(.76)		
5. FSB_T2	3.83	1.28	.37	.50	.54	.60	(.83)	
6. FSB_T3	3.77	1.38	.32	.61	.58	.57	.76	(.85)

Note. M and *SD* are used to represent mean and standard deviation, respectively. Alpha reliabilities are on the diagonal. MTDL = motivation to develop as a leader; FSB = feedback seeking behavior; T1,T2,T3 represent first, second, and third survey times. All correlations were significant ($p < .001$).

Hypothesis 4 described a mediation model in which engagement mediates a positive relationship between MTDL and subsequent MTDL, suggesting an ongoing spiral of development through engagement. To analyze the data in regard to this hypothesis, we conducted a cross-lagged panel design (Cole & Maxwell, 2003), observing the cross-lagged influences of MTDL and FSB across three time points (T1, T2, and T3). In this analysis, multiple structural equation models, each more constrained than the last, are compared in turn.

The initial analyses of the cross-lagged panel design are conducted to establish that (1) measured items load only onto the latent variables they are designed to measure; (2) variances and covariances of the latent variables are invariant from one wave to the next; and (3) factor loadings onto the latent variables are invariant across waves. In these analyses, the first model evaluated is a baseline model in which all items are constrained to load onto their respective latent variables, all latent variables are free to relate to all other latent variables, and the error variances of all longitudinal items are free to relate to the error variances of subsequent measurements of the same item. There were no significant differences between the baseline (fully free) model and the models that constrained latent variable variances, covariances, and factor loadings to be invariant across waves (see Table 5); thus, our analyses support the basic measurement assumptions of the cross-lag panel.

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Table 5

Fit statistic across models tested in the cross-lagged panel design

Model	χ^2	df	p	$\Delta\chi^2$	Δdf	p	RMSEA	CFI	SRMR	TLI
Measurement Model Testing										
Confirmatory Factor Analysis	386.37	213	<.001	-	-	-	.07	.94	.09	.92
Constrained Variances	391.27	217	<.001	4.9	4	.30	.07	.94	.09	.92
Constrained Factor Loading	410.72	231	<.001	3.23	24.35	.14	.07	.94	.10	.93
Hypothesis Testing										
Saturated Model	392.99	215	<.001	-	-	-	.07	.94	.09	.92
Hypothesized Model	400.21	219	<.001	7.22	4	.124	.07	.94	.09	.92
More Constrained Model	411.68	221	<.001	18.69	6	.005	.07	.94	.12	.92

Note. Change in χ^2 and degrees of freedom is as compared to the baseline model in each case. In measurement model testing, the first model was a baseline confirmatory factor analysis in which all manifest items are constrained to load onto their respective latent variables, all latent variables are free to relate to all other latent variables, and the error variances of all longitudinal items are free to relate to the error variances of subsequent measurements of the same item; the second model was one in which all latent variable variances and covariances were constrained to be invariant across waves; the third model was one in factor loadings onto latent variables were constrained to be invariant across waves. The lack of significant difference in fit statistics observed among these models implies stability of construct validity across waves (Cole & Maxwell, 2003). In hypothesis testing, the first model was a baseline saturated model in which all upstream variables directly influence all downstream variables but cross-wave residual covariances are constrained to zero; the hypothesized model was one in which motivation to develop as a leader (MTDL) and feedback seeking behavior (FSB) directly influenced all constructs at the next time point but not subsequent waves; the more constrained model was one in which MTDL and FSB directly influence subsequent FSB, but FSB does not influence subsequent MTDL. The significant degradation of the model from the hypothesized model to the more constrained model provides evidence of the spiral effect. *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean square residual; TLI = Tucker-Lewis index.

We next examined our hypotheses by comparing a saturated model (all upstream variables directly influence all downstream variables but cross-wave residual covariances are constrained to zero), the hypothesized model (MTDL and FSB directly influence constructs at the next time point, but not subsequent waves), and a more constrained model (MTDL influenced subsequent FSB, but FSB did not influence subsequent MTDL). Comparison fit statistics are displayed in Table 5.

The hypothesized model evidenced similar fit to the saturated model, suggesting that omitted paths in this model are not significant. The more constrained model fit the data significantly worse than these models, suggesting that the paths from FSB to subsequent MTDL, which were omitted in this model, are significant. In support of that conclusion, T3 FSB was significantly related to T2 MTDL (b = .19, SE = .08, *p* = .02) as well T2 FSB. Additionally, MTDL was related to prior FSB (T1-T2 b = .19, SE = .09, *p* = .007; T2-T3 b = .09, SE = .05, *p* = .08), though the T2-T3 relationship did not reach significance at the alpha = .05 level. Overall, hypotheses 4 was partially supported (see Figure 2).

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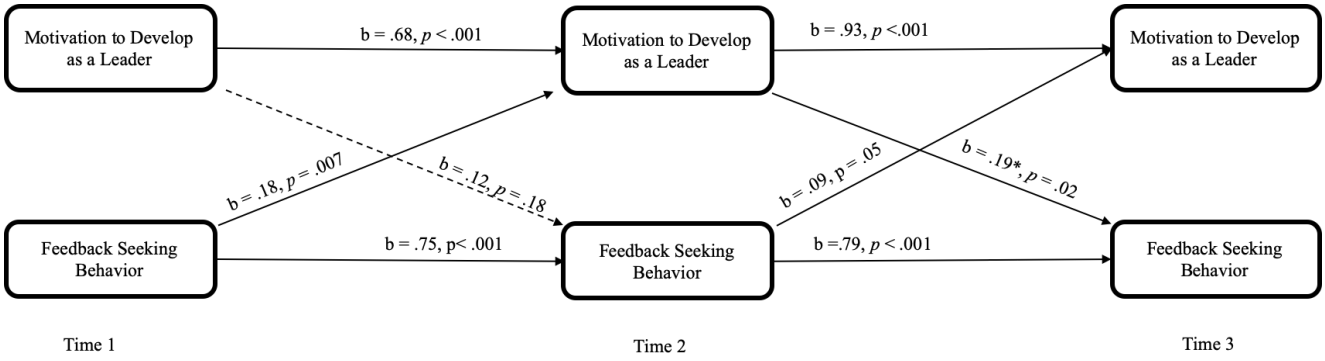

Figure 2. Unstandardized path estimates for cross-lagged panel.

Discussion. Study 3 expands upon the previous studies even further by (a) considering yet a different form of engagement, and (b) examining the longitudinal effects of MTDL and engagement on each other. By following developing leaders over the course of a weeks-long developmental program, we observed that leaders who sought higher levels of feedback became more motivated to seek out leader development, which further increased engagement, providing longitudinal evidence of virtual spirals of leader development. Although other studies have observed covariance among constructs as evidence of these spirals (see, for example, Day & Sin, 2011), this study, to our knowledge, is the first to use a cross-lagged panel design to find such evidence.

General Discussion

Personal agency is an important aspect of leader development (DeRue et al., 2012). If, as has been suggested, leadership must be learned rather than taught (Geneen, 1984), then burgeoning leaders must take an active role in that learning — they must engage. Engagement goes beyond simply showing up; it requires effortful activity directed toward improving as a leader. In the face of the competing demands for leaders' cognitive focus and attention, the effort of engagement requires an underlying motivation to develop as a leader. Our results indicate that those who are more motivated to develop as leaders are more likely to engage during leader development. This finding across three different developmental contexts (i.e., intention identification, a mandatory leader development program, and an adventure-based learning experience) suggests that MTDL is an important indicator of engagement not only in the narrow context of leader self-development but also in leader development more broadly.

There has been a growing call from leader development researchers for empirical investigation of the psychological processes that occur in the context of leader development (Day & Dragoni, 2015; DeRue & Myers, 2014; Hannah & Avolio, 2010). While examinations of motivation to lead and motivation to learn may be helpful (see, for instance, Stiehl et al., 2015), they are insufficient. Motivation to lead is an important psychological construct related to leader emergence, selection, training, and performance (Chan & Drasgow, 2001; Rosch & Villanueva, 2016; Stiehl et al., 2015; Yeager & Callahan, 2016), yet performance-based motivations may stand in the way of such participation in the face of competing attentional demands, suggesting that other sources of motivation may also be important for leaders to stay on track and engaged in their development. Motivation to learn in general can be an important complement to motivation to lead for developing leaders, providing the impetus to direct resources toward skill acquisition, personal development, and training transfer. We conceptualized and demonstrated the influence of motivation to lead and motivation to learn on engagement during leader

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development through the linkage of motivation to develop as a leader. We did not, however, observe an interaction between motivation to lead and motivation to learn; in our analyses they influenced motivation to develop as a leader independently of each other. Thus, it appears that evaluations of the value of learning to be a leader need not arise from MTLead, but rather may arise from other sources as well.

Additionally, leadership researchers have proposed a virtuous spiral of development in which individuals build leader identity following successful developmental opportunities, which in turn drives them to seek out more opportunities (Day & Harrison, 2007; Day & Sin, 2011; Lord & Hall, 2005). The longitudinal data collected here provide evidence to support the theorized positive spirals of development by observing that MTDL led to engagement in leader development, which subsequently led to higher levels of MTDL.

Research Implications. Organizations in the United States spend billions of dollars each year attempting to develop leaders (O'Leonard, 2014), and higher education institutions offer hundreds of graduate programs designed to develop leadership talent (Stork et al., 2015). Despite this work to develop leaders, the science lags; indeed, leader development has been identified as one of the top areas of industrial-organizational psychology in need of continued scientific development (Porr et al., 2016).

Scientists can study the influence of individual differences and situational factors on leader development through the lens of how they impact the individual's motivation. MTDL is a potential criterion for research into antecedents of successful leader development and an antecedent itself in research into how different situations moderate the motivation to engagement and performance relationship in the context of leader development.

Practical Implications. *Developing Leaders.* Practitioners of leader development should recognize the personal agency required by those they would develop. They need to encourage their charges to seek out and engage in developmental experiences, not merely attempting to learn through passive observation or "osmosis" but actively questioning, seeking feedback, and reflecting during experiential activities — that is, engaging in leader development. The present research suggests several paths toward encouraging that engagement.

First, leader developers should help leaders understand how leader development programs can improve their leader performance or reach higher performance goals, thereby potentially strengthening the relationship between their motivation to lead and their engagement in leader development. Such an approach should emphasize that leadership is a skill that can be learned and may include exploring how other successful leaders have leveraged leader development programs or how leader development programs can help meet specific career or skill shortfalls.

Second, leader developers should attempt to tap into students' curiosity and desire to learn. This may be especially important when dealing with those who have not yet discovered a passion for leadership. Perhaps their motivation can be "jump started" by first teaching that leadership can be learned. The results here suggest that as passionate learners develop their leadership skills, their motivation to develop further in leadership will be reinforced, and they will have more desire to seek out and engage in leader development. Theory suggests that this spiral will also increase their identity as leaders and, with that, their motivation to lead (Day & Harrison, 2007).

High Potential Employees. Identifying employees who possess the competencies to perform in key leadership positions in the future is an integral part of strategic talent development (Collings & Mellahi, 2009; Silzer & Dowell, 2009). These future leaders are often referred to as "high potential" employees (or, more colloquially, as "high potentials"). Successful performance in these future positions cannot be demonstrated by past performance alone; rather, the identification of high potential employees centers on identifying those who can and will develop as leaders to be ready to take on more complex and challenging roles in the future (Finkelstein et al., 2017; Lombardo & Eichinger, 2000; Silzer & Church, 2009; Spreitzer et al., 1997). Importantly, identifying high potentials includes identifying those willing to put in the effort necessary to develop as leaders.

Understanding motivation to develop as a leader as an individual difference may help practitioners identify

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individuals who will likely thrive in leader development programs. This may influence selection of participants as well as the tailoring of individual programs to promote motivation as a first step in the development process. The benefit of an ongoing research program into MTDL will be to elucidate best practices in promoting motivation during leader development.

Limitations and Future Research. The methodology we used for this research suggests both strengths and weaknesses. Although studies one and two were cross-sectional studies (though Study 1 did provide some temporal separation between antecedents and outcomes), Study 3 was a longitudinal study, measuring both motivation and engagement at multiple time periods, allowing for a cross-lagged analysis of mediation, and thus providing the strongest evidence to date of the positive feedback spirals in leader development. Despite this strength, however, each of these studies relied on participant self-reports. While self-reports are an important part of understanding self-regulatory processes and some information about engagement may only be available from the participant (e.g., interest levels), future research would benefit from external reports of observed behaviors. Additionally, despite the strength of a longitudinal design in finding evidence to support lines of causality, only experimental designs can prove causal relationships. As research about individual differences in leader development matures, it would benefit from a renewed focus on experimental designs.

Researchers should explore additional manifestations of engagement in leader development (e.g., self-development, adaptive reflection, etc.) as behavioral outcomes of motivational processes. Additionally, we did not consider how perceptions of particular development activities might moderate the relationship between a general motivation to develop as a leader and a situation-specific motivation to develop as a leader. Future researchers should explore how individuals evaluate potential development opportunities (either those formally labeled as developmental or opportunities for development found in the practice of leadership) and how these evaluations differentially influence leaders to engage in development.

Finally, the present study considers motivation and engagement in a way that is divorced from considerations of the abilities of leaders to develop. The ability to develop can be influenced by contextual considerations (e.g., developmental opportunities, organizational support for leader development; Dragoni et al., 2009; Pitichat et al., 2017) and by individual considerations (e.g., self-awareness, cognitive ability; Avolio & Hannah, 2010, Kanfer & Ackerman, 1989). Kanfer and Ackerman's (1989) model of skill development in complex tasks suggests that it is the interaction of ability and motivation that drives skill acquisition. Future research on individual differences in leader development should consider this interaction.

Conclusion

Organizations and individuals spend immense resources on developing leadership talent. A plethora of research around aspects of leader development programs (e.g., challenge, context, and support) has still resulted in a large gap in our understanding of what influences people to succeed or fail differentially in these programs. Our study provides initial evidence that motivation to develop as a leader is an important leading indicator of the engagement required by leaders to see growth. This represents early progress in research around individual differences during leader development, answering the growing call from practitioners and researchers alike for theoretical and empirical exploration of this subject.

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