

Learning disability and leadership: Becoming an effective leader

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Summary

This study investigates learning disability (LD) as an individual-differences variable predicting leadership emergence, role occupancy, and effectiveness. We hypothesize that individuals with LD are less likely to occupy leadership roles, and that informal group processes (leadership emergence) will mediate the relationship between LD and leadership role occupancy. We also hypothesized that, among leaders promoted and selected for leadership training, there would be a negative relationship between LD and effective leadership. We first checked for LD in a sample of 1076 soldiers, measuring cognitive ability with a geometric-analogies test as a control. Some months later, during the soldiers' basic training, we measured leadership emergence. We then identified those who were selected for leadership training, recording, and measuring their effectiveness according to supervisory and peer evaluations. Leadership emergence was found to mediate the negative relationship between LD and leadership role occupancy. There were no significant differences among leaders ($n = 308$) with and without LD in regard to leadership effectiveness. Copyright © 2013 John Wiley & Sons, Ltd.

Keywords: learning disabilities; leadership emergence; leadership role occupancy; leadership effectiveness

Introduction

Learning ability is particularly important for leadership. Learning is considered as central to leadership role, and leaders were found to value learning and to provide intellectual stimulation for their followers in order to facilitate learning (Brown & Posner, 2001). Developing as a leader involves complex learning activities from classroom education (Day, 2001) to lived experience (Kempster, 2006). Thus, it is possible that individuals who have difficulties in performing will, in some learning activities, be less likely to emerge as leaders.

Learning disabilities (LD) are defined as follows: "A heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities" (The National Joint Committee on Learning Disabilities (NJCLD), 1985). Data from the US National Health Interview Survey demonstrated that LD prevails in 16.8 percent of the sampled population (Boyle, Decoufle, & Yeargin-Allsopp, 1994; see also a more recent US sample Altarac & Saroha, 2007). Most of the LD literature focuses on children, but it has been established that LD affects individuals throughout their life (Gajar, 1992), and there are cases in which some of its symptoms become worse over time (Gerber et al., 1990). Thus, LD is relevant to personnel and to organizational psychology because almost one-fifth of employees may have LD that may influence their performance

Nonetheless, a growing number of stories in the popular press indicate that some of the most successful managers and company founders of our time had LD, among them, such as Steve Jobs (Apple), Henry Ford (Ford), John Chambers (Cisco), Ted Turner (Broadcasting), and Bill Hewlett (Hewlett Packard) (Love, 2011). Some managers and entrepreneurs claiming to have LD even attribute their success to that characteristic (Coppola, 2007; Love, 2011).

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So, is LD detrimental to leadership emergence and performance, or does it enhance performance, as the popular press suggests? People with LD are endemic to all organizations and can play an important role in “leadership pools”. The relationship between LD and leadership thus has wide ramifications regarding leadership capabilities in organizations, which are crucial to organizational success (James & Burgoyne, 2001; Lowe & Gardner, 2001).

Most studies concerning what makes leaders effective (Foti & Hauenstein, 2007; Nystedt, 1997; Yukl, 2002) focus on variables, including the following: personality (Judge, Bono, Ilies, & Gerhardt, 2002), dominance (Bentz, 1990), individual motive (Chan & Drasgow, 2001), cognitive ability (Lord, Foti, & de Vader, 1984), and even physical strength (Kalish & Luria, 2012). However, it has been noted (Zaccaro, 2007; Zaccaro, Gulick, & Khare, 2008; Zaccaro, Kemp, & Bader, 2004) that many studies on the antecedents of leadership do not consider the *processes* in which these antecedents predict leaders’ emergence, nor do they examine future leadership assignments and effectiveness. Hogan, Curphy, and Hogan (1994) differentiated between emergence and effectiveness in the conceptualization and measurement of leadership (see also Lord, De Vader, & Alliger, 1986). Others have differentiated between informal leadership emergence within a group of peers and formal leadership roles within organizations (Mumford et al., 2000). We propose the highly relevant variable of LD and test a mediation process with informal and formal leadership outcomes in a longitudinal study.

Learning Disability and Leadership Emergence

The process by which potential leaders demonstrate leadership skills is known as leadership emergence. Emerging leaders are those who exert significant influence over other members of the group to which they belong, although no formal authority has been assigned to them (De Souza & Klein, 1995).

Existing measures of leadership-emergence are based on study participants’ responses to questions about whom they perceive as a potential leader in their group (Goktepe & Schneier, 1989; Neubert & Taggar, 2004; Taggar, Hackett, & Saha, 1999). In other words, a group member viewed by many others in his group as a potential leader will receive a high leadership-emergence score.

Can people with LD emerge as leaders similarly to those without LD? The few attempts that have been made in this regard offer different predictions—the popular press suggests that LD actually motivates individuals to emerge as leaders and highlights famous success stories (Coppola, 2007; Love, 2011). Recent research (Logan & Martin, 2012) on entrepreneurship compared the proportion of individuals with LD in the general population with the proportion of entrepreneurs with LD and found that entrepreneurs are much more likely to have LD than other individuals. Logan (2009) found that entrepreneurs with LD develop coping strategies and business skills to enable them to compete against those without LD. However, even though entrepreneurship and leadership are similar in many respects, they are, nonetheless, distinct fields (Cogliser & Brigham, 2004; Vecchio, 2003).

Conversely, other studies that cross LD with various outcomes relevant to leadership have demonstrated that LD is a drawback to performance. Although we found no studies investigating the relationship between LD and leadership emergence, we did find studies investigating the relationship between LD and social functioning. Researchers have shown that individuals with LD find it difficult to establish and maintain social relationships (Kavale & Forness, 1996; Ochoa & Olivarez, 1995; Swanson & Malone, 1992; Tur-Kaspa, 2004), are less accepted by their peers (Gresham & Reschly, 1986; La Greca & Stone, 1990; Valas, 1999), and often sense peer rejection (Tur-Kaspa, 2002).

Many studies attempting to understand the role of LD in social functioning used Crick and Dodge’s (1994) social-information processing model of the cognitive processes involved in social relationships, that is, encoding of social cues and mental interpretation that result in a desired outcome. According to their goals, people construct or search for possible responses and then evaluate the consequences of each response. The studies demonstrated that individuals with LD differ from those without LD on some measures of the Crick and Dodge model (see Tur-Kaspa, 2002 for a review). Bryan (1991) demonstrated that individuals with LD have lower social cognition ability and levels of social perception. It is therefore possible that the social difficulties of individuals with LD derive from their lower levels of social

behavior and ultimately lead to difficulties in social adjustment (Dodge, 1986). We suggest that because interpersonal ability (which includes social ability) in the leadership emergence process may be lacking for individuals with LD (Hogan & Kaiser, 2005; Misiolek & Heckman, 2005; Pescosolido, 2002), they may be less likely to emerge as leaders.

Another theory of why peers might not select individuals with LD as potential leaders is the implicit leadership theory; according to which, individuals rely on prototypes that are abstractions of the most widely shared features or attributes of specific categories (Lord et al., 1984). Implicit leadership theory studies have demonstrated that group members share a prototype of “the leader”—a set of attributes and behaviors associated with leadership (Lord & Maher, 1991). In other words, as Rubin, Bartels, and Bommer (2002) noted, individuals share common understandings about leader characteristics and make their choice accordingly. Previous research (e.g., Judge, Colbert, & Ilies, 2004; Lord et al., 1984; Rubin et al., 2002) found that general intelligence was a constant attribute of a leader. Individuals with LD were perceived as less intelligent by their peers (May & Stone, 2010; Molloy & Nario-Redmond, 2007; Rubin et al., 2002) and were therefore less likely to be classified as informal leaders.

Cognitive ability itself is a known leadership antecedent. It has been shown to predict leadership ability and performance (Judge et al., 2004; Kirkpatrick & Locke, 1991; Lord et al., 1986; Schmidt & Hunter, 1998; Stogdill, 1974; Taggar et al., 1999) and to be related to social functioning in general. Individuals with high cognitive ability also have high information-processing ability (Schmidt, Hunter, & Pearlman, 1981) and flexibility (Steiner, 1972). Other studies have shown that the cognitively abled individuals adapt better to new situations and develop better interactions with other group members (Hollenbeck, Lepine, & Ilgen, 1996).

Cognitive ability also plays a role in the early stages of leadership. Lord and colleagues (1984) found that general intelligence and context-specific cognitive ability are associated with emerging leaders. Lord et al. (1984), for example, found that general intelligence is a recurring attribute of a leader. It is important to note our assumption that cognitive ability is *not* the reason why individuals with LD are less likely to emerge as leaders. Therefore, our study is aimed at testing whether LD predicts leadership emergence while controlling for cognitive ability.

In reviewing the literature about LD in order to build our hypotheses, we found that most of the empirical research on LD predicts negative outcomes in many areas of performance and conflicts with the myth promoted in the popular press. We therefore decided to build our hypothesis on the research literature and to hypothesize a negative relationship between LD and leadership.

Hypothesis 1: Learning disability will be negatively related to leadership emergence.

Learning Disability and Leadership Roles

Most reviews of leadership (e.g., House & Aditya, 1997; Zaccaro, 2007) define leadership as the ability to influence others. For example, Mumford et al. (2000) included both informal leadership outcomes (leadership emergence) and formal organizational leadership outcomes (leadership role occupancy); that is, leadership role occupancy is defined as formal recognition as a leader in an organization by management, with other organization members assigned as subordinates. Formal organizational leadership differs from the informal in that it is associated with formal power such as the ability to reward or punish and with formal recognition (e.g., title) by management. Conversely, people perceived by their peers as informal (i.e., emergent) leaders may not be perceived by the management of the organization as fit to formally occupy a managerial role (and vice versa).

Previous research of LD concentrated on children and their performance at school (Bender, 2008). Today, an increasing number of studies focusing on adults with LD after leaving school (Lehman, Davies, & Laurin, 2000; Levine & Nourse, 1998) indicate that LD individuals find post-school transition difficult. They tend to have problems in adjusting to life and work, and a significantly lower percentage of LD individuals attend college (Wagner, Blackorby, Cameto, Hebbeler, & Newman, 1993). Emotional and social differences are also evident, presenting such problems as

lowered self-esteem, poor locus of control, delinquency, depression, lower levels of social activity, and higher suicide rates (Beitchman, Wilson, Douglas, Young, & Adlaf, 2001; Bender, Rosenkrans, & Crane, 1999; Benz, Lindstrom, & Yovanoff, 2000; Dickinson & Verbeek, 2002; Quinn, Rutherford, Leone, Osher, & Poirier, 2005).

Information about the effects of LD offers a negative prognosis for vocational success of young adults. There is evidence that individuals with LD entering the workplace after high school are frequently employed in minimum-wage jobs, receive fewer promotions, or are promoted less frequently than individuals without LD (Benz et al., 2000; Dickinson & Verbeek, 2002; Johnson, Stodden, Emanuel, Luecking, & Mack, 2002). Furthermore, it appears that employers have more negative reactions to hiring people with LD than to hiring employees with other disabilities (Minskoff, Sautter, Hoffmann, & Hawks, 1987).

Zaccaro (2007) argued that leadership derives from an integrated set of cognitive abilities and social capabilities. We argue that the effect of LD on everyday performance and interpersonal behavior may also affect leadership.

On the basis of the aforementioned findings, we predict that individuals with LD are less likely to be promoted to leadership roles in organizations.

Hypothesis 2: Learning disability will be negatively correlated with leadership roles; hence, fewer individuals with LD will be appointed as leaders than those without LD.

Mumford et al. (2000) suggested congruence between leadership emergence and leadership role occupancy. More recently, Zaccaro (2007) and Zaccaro et al. (2004) suggested a need to investigate how these criteria relate to each other. We also examine potential relationships between these two leadership outcomes, as well as explaining *how* they are related to LD.

Our premise is that leadership emergence mediates effects of LD on leadership role occupancy, that is, individuals with LD are less likely to be perceived by their peers as leaders and are consequently less likely to be appointed to formal leadership roles.

Derue and Ashford (2010) explained that reciprocal social recognition occurs between someone seeking leadership and potential followers. In such “claiming-granting” processes, individuals internalize leader or follower identities that are collectively endorsed within the organizational context (Derue & Ashford, 2010). Thus, we expect that individuals with LD will tend to be followers rather than leaders and consequently will be less likely to be selected for supervisory positions. In sum, we predict the following:

Hypothesis 3: Leadership emergence will mediate the negative relationship between LD and formal leadership role occupancy.

Learning Disability and Leadership Effectiveness

Leadership effectiveness differs from leadership emergence, in that the latter applies to whether a non-leader is perceived as a leader by those with limited information about his/her leadership performance. Leadership effectiveness, on the other hand, focuses on evaluating the performance of someone in a leadership position, that is his/her supervisors; peers and subordinates do have such information (Judge et al., 2002). Such evaluations have been shown to predict objective measures of group performance (Hogan et al., 1994).

Our hypothesis is based on the literature concerning both outcomes of LD in populations of non-leaders and about prototypicality and leadership.

Because LD related negatively with social and performance aspects, we hypothesized a negative relationship with leadership-emergence and role-occupancy. Foti and Hauenstein (2007) indicated that variables related to leadership emergence and role occupancy are also related to effective leadership. Hence, individuals with LD are not only less likely to emerge as leaders or to occupy leadership roles; they will also be less effective as leaders than those without LD.

Another theory regarding the link between LD and leadership effectiveness derives from social identity and self-categorization (Ashforth & Mael, 1989; Hogg & Abrams, 1988; Tajfel & Turner, 1986); according to which, there is an in-group prototype that is a cognitive representation of similarities between its members (Van Knippenberg & Hogg, 2003a). Group members who are more prototypical than others and are more representative of the group and of the ideal group member were found to exert greater influence and attraction (Hogg, 1992; van Knippenberg, Lössie, & Wilke, 1994), and these qualities were related to leadership effectiveness (Hains, Hogg, & Duck, 1997; Hogg, 2001; Van Knippenberg & Hogg, 2003b). Individuals with LD are stereotyped negatively (May & Stone, 2010); they are not perceived as prototypical or as effective leaders.

Hypothesis 4: Leaders with LD will have lower leadership-effectiveness scores than those without LD.

Method

Context

For this longitudinal field study, we selected a military setting in which all individuals participate (unlike organizations in which employers systematically exclude individuals with LD) and are given equal chances of promotion. Military service is obligatory in Israel. All 18-year olds are drafted and, if medically sound, are usually assigned to infantry units in which they first undergo about six months of basic training. In which they learn military discipline, basic military maneuvers, how to use and operate weapons and tools, and undergo physical training to build the needed strength. Some of them are selected by their commanders for intensive commander training courses of approximately four months, in which they are trained and tested for leadership in combat. All trainees participate in activities that allow their peers and supervisors to evaluate their effectiveness as leaders, while they improve their leadership skills. These are the future non-commissioned officers, and it is from this select group that those who perform well are chosen as commissioned officers.

The setting provided a unique opportunity for investigating LD and conducting a “controlled comparison” between individuals with LD and without LD. The sample was quite homogeneous: young soldiers of similar age, in the same organizational setting, and performing relatively non-academic tasks. We interviewed officers in charge of personnel selection and training in the infantry unit under research. In all interviews, the officers indicated that field commanders do not consider LD when making their decisions, and that many of them do not even know who had previously been diagnosed as LD.

Sample

The study comprised 1076 infantrymen from 32 platoons and 18-year-old male recruits to the Israeli military. Of these, 237 were assessed as having LD. Our analysis of leadership effectiveness focused on 308 out of the total sample who were selected for commander training (50 of them with LD).

Procedure

Cognitive ability and LD were measured before the soldiers were recruited with a series of cognitive tests. Leadership emergence was measured 10 weeks later from peer evaluation during the basic training period. About eight months later, the research team was informed as to which of the soldiers had been appointed to formal leadership, that is, had graduated from commanders’ course. We then followed these 308 leaders, testing leadership effectiveness during training, based on peer evaluations (more than six months after the first measurement of leadership emergence) and on their final grades in the course (about one year after being drafted). During the training, the

soldiers lived and learned with their peers and supervisors, interacting with them continuously, which gave peers and supervisors ample opportunity to evaluate each soldier's potential leader qualities and their effectiveness. It is important to note that LD is not a consideration in this course. However, it is very likely that the instructors will become aware of the disability. For instance, soldiers with LD may require more time for reading instructions or other material and share this and other problems with peers and supervisors. Because leadership-effectiveness scores in the commander course were based only on a small group of soldiers who became commanders, we did not enter it in the mediation model but tested its relationship with LD in a separate model.

Measures

Learning disabilities

Soldiers were formally assessed as having LD at an assessment center approved by the Israel Ministry of Education (see similar criterion in Tur-Kaspa, 2002). Criteria in Israel are based on comprehensive psychological and educational assessments, including the following: (i) failure to gain achievements commensurate with age and ability in one or more learning processes; (ii) marked discrepancy between intellectual ability and academic achievement; and (iii) average IQ. Soldiers are asked to present these assessments when enlisting, for the approval of a professional committee of the Army Medical Corps. Soldiers with LD are entitled to benefits (extra time and exemption from certain tests), which mitigate their difficulties during the initial cognitive testing, so they tend to report their LD in order to better succeed in the selection processes. The score in this study was binary—with LD/without LD.

Leadership emergence

(During basic training)—was measured according to existing procedures (Goktepe & Schneier, 1989; Neubert & Taggar, 2004; Taggar et al., 1999). Participants were asked to indicate those they perceived as potential leaders in their group. We gave no specific definition of leadership. Higher scores indicated that more people viewed these individuals as having leadership qualities. We used a percentage of the total number in the group in order to control for group size. The measure ranged from “0” (not selected) to “1” (selected by all members). Data were obtained from participants during basic training (i.e., about 10 weeks after being drafted).

Leadership role occupancy

We used a binary scale—1 for those who completed the course successfully and 0 for those who did not finish, or were not selected for, the course. Overall, some 29 percent of the soldiers attained leadership. We tested whether individuals with LD had higher rates of not completing the course in order to eliminate the possibility that the course itself was an obstacle for them. We found that only one of the 17 who did not complete the course (6 percent) had LD (i.e., lower rates of not completing the course than soldiers without LD).

Leadership effectiveness was measured according to supervisors' and peers' opinions, aligned with effectiveness measures in earlier studies (Yukl, 2002). Supervisors' evaluation was measured according to the formal grade given to each soldier in the training course, which is a function of officers' evaluations and the tests related to military command during training. The grade was validated and was found to predict leadership success and is also used in selecting commanders for promotion to officer ranks. Grades ranged from 56 to 95.

Leadership effectiveness was also measured by means of peer evaluation during training. Peer assessments provide information complementary to supervisor evaluation (Borman, 1974; Zammuto, London, & Rowland, 1982), and are stable (Smith, 1967), offering accurate judgments of co-workers' behavior (Kane & Lawler, 1978; Lewin & Zwany, 1976; Murphy & Cleveland, 1991; Wexley & Klimosky, 1984). Predictive validity studies have shown that peer assessment accurately predicts job performance (Kane & Lawler, 1978; Mayfield, 1970; Reilly & Chao, 1982), so the participants in the course were asked to evaluate all their peers according to suitability to become officers, on a Likert-scale ranging from 1 (not suitable) to 6 (highly suitable). The mean score of all evaluations

of suitability, ranged from 1.7 to 5.8. It is important to note that supervisors and peers based their evaluations on months of interaction with each commander. Measures of leadership effectiveness by peers and supervisors were positively correlated ($r = .47, p < .001$), indicating reliability of the measure.

Cognitive ability (control)

Cognitive ability was measured with a 30-item geometric-analogies test constructed specifically for this purpose. All items present a 2×2 matrix problem in which there are two apparent relationships for which analogical similarity must be calculated. For each problem, four possible answers are presented, of which only one is correct. An example of a geometric analogy: “small triangle: large triangle: small circle: ?”, to which the correct answer is “large circle”, out of four geometric shapes. Score is calculated as percentage of correct answers. Such tests have been proven valid for evaluation of cognitive ability (Mulholland, Pellegrino, & Glaser, 1980; Sternberg, 1977). We employed this test, because it is relevant to the commander’s role; army maneuvers are planned and discussed before a maneuver, which is also followed by debriefing in order to facilitate learning. Commanders and soldiers must understand and be able to mentally transpose the material (presented in these discussions on maps and small models) to real life situations. The geometric analogies test captures this important mental ability well, and it was also selected because of its suitability for individuals with LD. Geometric analogies measure reasoning more purely than verbal analogies, because little vocabulary or specific knowledge is required to solve them (Hosenfeld, Van den Boom, & Resing, 1997). This is especially relevant to comparisons between individuals with and without LD.

Results

Descriptive statistics

Descriptive statistics and correlations of all variables are presented in Table 1. LD was negatively correlated with the following: leadership emergence ($r = -.16, p < .001$) and leadership role occupancy ($r = -.9, p < .01$).

Statistical analysis for testing hypotheses

Because our sample was comprised individuals nested in platoons, which are themselves nested in units, we used the hierarchical linear and nonlinear model, applying level-nested random intercept-effect models (Little, Milliken, Stroup, & Wolfinger, 1996) to control for nesting.

Table 1. Means, standard deviations, and correlations.

Variable	N	Mean	SD	1	2	3	4	5	6
1. Learning disability (LD)	1076	0.22	—	1	—	—	—	—	—
2. Leadership emergence	1076	0.44	0.28	−0.16***	1	—	—	—	—
3. Leadership role occupancy (LRO)	1076	0.28	—	−0.09**	0.36***	1	—	—	—
4. Leadership effectiveness (peers)	308	0.40	0.08	−0.06	0.36***	—	1	—	—
5. Leadership effectiveness (supervisors)	308	77.66	5.76	−0.05	0.18***	—	0.47***	1	—
6. Cognitive ability (control)	1076	71.34	19.06	−0.12***	0.23***	0.18***	0.26***	0.13*	1

Note: * $p < .05$; ** $p < .01$; *** $p < 0.001$. For the binary variables (learning disability and leadership role occupancy) we report proportion.

Table 2. Results of mediation regression analysis.

Variable	<i>B</i>	<i>SE</i>
Model 1 (predicting leadership emergence—H1)		
Learning disability	−0.09***	0.02
Cognitive ability (control)	0.003***	0.0004
Model 2 (predicting leadership role occupancy—H2)		
Learning disability	0.45*	0.2
Cognitive ability (control)	0.03***	0.004
Model 3 (predicting leadership role occupancy—H3)		
Learning disability	−0.16	0.18
Leadership emergence	2.87***	0.28
Cognitive ability (control)	0.01***	0.00

Note: * $p < .05$; ** $p < .01$; *** $p < 0.001$. *B* = unstandardized regression coefficient; *SE* = standard error; H = hypothesis models 2 and 3 are logistic regression. The range of bootstrap estimates for the indirect effect in model 3 = −0.41 to −0.15.

Hypothesis 1 predicted that LD would be negatively related to leadership emergence. As shown in Table 2, the results supported the hypothesis, demonstrating negative relationship between LD and leadership emergence ($B = -.098$, $p < .001$) after controlling for cognitive ability.

Hypothesis 2 suggested that LD would be negatively related to leadership role occupancy. As shown in Table 2, the results supported the hypothesis ($B = -.451$, $p < .05$) after controlling for cognitive ability.

Hypothesis 3 suggests that leadership emergence will mediate the relationship between LD and leadership role occupancy. We selected a mediation model on the basis of Edwards and Lambert's (2007) bootstrap procedure to test the size of the indirect effect (Edwards & Lambert, 2007; MacKinnon, Fairchild, & Fritz, 2007; Preacher, Buckner, & Hayes, 2007). This non-parametric procedure estimates effect size and constructs CI from 1000 random samples. Conditions for mediation are the following: (i) the independent variable (LD) will predict the mediator (leadership emergence); and (ii) after controlling for the independent variable (LD), the mediator (leadership emergence) will significantly predict the dependent variable (LRO). Results presented in Table 2 indicate that LD predicted leadership emergence while controlling for cognitive ability (Model 1), and that when both LD and leadership emergence were entered in the same model (Model 2), LD was not related to leadership role occupancy (no direct effect was found) and leadership emergence was related to leadership role occupancy (indirect effect/mediation effect). Range of bootstrap estimates (from −.41 to −0.15) excluded zero, indicating significant indirect/mediation effect. We also conducted Baron and Kenny's (1986) mediation test, using hierarchical linear and nonlinear model regression models to control for nesting effect and obtained similar results.¹

Hypothesis 4 suggests that leaders with LD are less effective than other leaders. The results are presented in Table 3. We found no expected differences and no significant differences in the leadership-effectiveness measurements of supervisors and peers.² Therefore, Hypothesis 4 is not supported.

Discussion

The aim of this study was to investigate the role of LD in predicting leadership. We found that individuals with LD are less likely to emerge as informal leaders, and that their leadership-emergence scores mediate the negative relationship between LD and leadership role occupancy. However, we found no significant differences between leaders

¹Available from the authors on request.

²We also tested the average of the two measures of leadership-effectiveness and found similar non-significant results. In the table, the separate results of peer evaluations and supervisors evaluation are reported in order to provide more information. However, results of the aggregated analysis are available from the authors. We thank an anonymous reviewer for this suggestion.

Table 3. Hierarchical linear and nonlinear model regression analysis of the relationship between learning disability and leadership performance (leadership emergence and leadership effectiveness).

Variable	Leadership emergence		Leadership effectiveness	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Learning disability	-0.169	1.325	-0.567	0.909
Cognitive ability	0.143***	0.029	0.041*	0.02

Note: * $p < .05$; ** $p < .01$; *** $p < 0.001$. *B* = unstandardized regression coefficient; *SE* = standard error.

with and without LD in regard to leadership effectiveness; that is, individuals with LD *not* selected for leadership are less likely to become leaders, whereas those who *are* selected for leadership perform as effectively as those without LD.

This seems to be the first research investigating relationships between LD and leadership outcomes. This is surprising due to the known close relationship between leadership and learning. Learning to lead is suggested to be a complex task in which one needs to be engaged continually throughout his or her lifespan (Day, 2001, 2011). In order to achieve organizational success, organizations need to identify and develop leadership capability within their workforce (Fulmer & Wagner, 1999; James & Burgoyne, 2001). The results of this study demonstrate that the investments in leadership development may be effective for all the potential leaders including individuals with LD. This investigation is important not only because of the high rates of LD in the population (almost 20 percent) but also for integrating people with disabilities in the workforce. Many countries have undertaken policy reforms aimed at integrating disabled individuals into the labor market (OECD, 1992, 2003), and their integration and promotion are of great social importance.

Our study not only investigates the integration of disabled individuals in organizations. It also goes a step further in checking their promotion into leadership roles. Other studies have shown that leadership is an aspect of identity and personality, known as “motivation to lead” (Chan & Drasgow, 2001; Kark & Van Dijk, 2007; Luria & Berson, 2012; Van Iddekinge, Ferris, & Heffner, 2009), “motivation to manage” (Miner, 1993), or “motivation to influence and achieve” (e.g., McClelland, 1975). All these studies demonstrate that leadership is a vocational goal, denial of which can influence their quality of life. That no differences were found in leader effectiveness in individuals with and without LD suggests (according to our sample) that precluding individuals with LD from leadership is not justifiable.

The results concerning negative relationships between LD and leadership emergence/leadership role occupancy are in line with the literature (e.g., Beitchman et al., 2001; Bender et al., 1999; Benz et al., 2000; Dickinson & Verbeek, 2002; Quinn et al., 2005). However, some individuals with LD did emerge as informal leaders and even became formal leaders, and no difference was found in their leadership effectiveness (in both the supervisors’ and peers’ assessments). In the small group of soldiers that did not complete the course, there were fewer *with* LD as compared with those without LD, which aligns with stories of highly successful leaders and entrepreneurs with LD (Logan, 2009; Love, 2011). This suggests that, among individuals with LD, there are also potential leaders who can contribute to organizational success.

We believe that these specific leaders with LD were able to correct for their disability. Benz et al. (2000) demonstrated that work-related performance problems of individuals with LD can be improved, and that those who had participated in vocational programs had better post-school transition (see also Johnson et al., 2002).

Boundary conditions that make the difference between people with and without LD emerging as leaders need to be further investigated, how and which of the individuals with LD overcome this challenge. We suggest some variables that should be investigated in future studies as moderators in the mediation process described in this paper, including the following: self-monitoring (Day, Schleicher, Unckless, & Hiller, 2002; Rubin et al., 2002; Zaccaro, Foti, & Kenny, 1991); self-efficacy (Chemers, Watson, & May, 2000; Foti & Hauenstein, 2007; Smith & Foti, 1998), motivation to lead (Chan & Drasgow, 2001; Van Iddekinge et al., 2009), emotional intelligence, and social skills (Pescosolido, 2002). For example, we hypothesize that individuals with high self-efficacy and high motivation to lead will continue to make efforts to become leaders regardless of their LD.

It is also possible that we did not find differences in leadership effectiveness between individuals with and without LD because of the highly mechanistic nature of the military organization and because these commanders operate in the field and not in the office. It may be easier for individuals with LD to correct for their disability in a stable work setting and to be more effective when commanding outdoor infantry drills than in a complex and dynamic environment where more academic knowledge is required. It is also possible that detailed analysis of leadership effectiveness performance may reveal differences in some specific aspects of leadership effectiveness. Katz (1974) differentiated between leadership performances dimensions (operational, human, and conceptual skills). If we had analyzed each dimension separately, we might have found that individuals with LD had lower scores on one dimension but had corrected for it with high ability in other dimensions.

This study does not investigate *why* individuals with and without LD differ. Studies focusing on employment problems of individuals with LD identified several problems. Okolo and Sitlington (1986) identified three main reasons, namely lack of interpersonal skills, job-related academic skills, and vocational skills. Brown (1976), investigating the reasons for rejecting job applicants with LD, found that out of the 10 most common reasons, nine related to interpersonal skills. Our study investigated the relationship of LD with leadership among infantry trainees. In such a milieu, it is reasonable to assume that lack of interpersonal skills was the predominant reason for non-emergence of leaders.

There is relatively limited understanding of how leadership antecedents affect leadership outcomes (Zaccaro, 2007). Few leadership studies have followed up individuals from before their involvement in leadership roles to their emergence and performance as formal leaders. Our study presents evidence about leadership processes in natural settings (Neubert & Taggar, 2004; Zhang, Waldman, & Wang, 2012), with results from a non-laboratory setting and non-student population. In addition, this study provides understanding of the leadership formation process using multiple methods of data collection, including paper and pencil tests, surveys, and unobtrusive data and from multiple sources.

We suggest that future studies should try to separate the objective influence of LD on leadership performance from the subjective stereotype that may influence LD sufferers' assessment scores on leadership. Most of the problem may be due to group members' stereotypes regarding individuals with LD, which influence leadership-emergence processes.

Limitations and future research

A limitation of this study is the unique sample, of 18-year-old soldiers. As a group from a specific culture and relatively similar background, this homogeneous sample makes it possible to control for potential intervening variables but also restricts the generalizability of the findings. Future research should extend their examination to include non-military settings.

Another limitation is that cross-sectional design precluded the possibility of determining causality. Although the design was longitudinal, it is important to note that, because this is far from being a controlled experiment, we cannot conclude that LD was the reason these individuals emerged less as leaders and were less likely to occupy formal leadership roles. Furthermore, we could not control for all possible intervening variables. For example, we assumed that interpersonal ability was weak among individuals with LD, and that this affected their leadership-related performance, but we were unable to measure and control for it in this study. It is also possible that individuals with LD invested more efforts in leadership activities in order to correct for their disability. Future studies should test the effect of interpersonal ability on the relationship between LD and leadership outcomes, controlling for efforts invested in leadership activities and development. It is also possible that some individuals with LD develop coping mechanisms better than those who do not achieve role occupancy. Future research should test which mechanisms enable some individuals with LD to emerge as (informal/formal) leaders.

We conducted a real-life study on the basis of measures decreed by the organization. We were given information from the military regarding which soldiers suffered from LD according to referrals from professional assessment centers. Hence, the measure did not include soldiers who did *not* disclose their disability. In addition, diagnosis of LD covers a broad range of categories, and the military reports did not specify the type of LD for each soldier. Further research should include classification of LD and of which types of LD have the strongest or least impact

on emergence, role occupancy, and effectiveness. Furthermore, we relayed on the military peer evaluation procedure to measure leadership effectiveness and were not exposed to the raw data in order to test its agreement between peers. We were able to test the agreement between peers and commanders that demonstrate reliability.

Implications

Individuals with LD are often accommodated in organizations, for example, with more time for completing tests, but we suggest that more can be performed. One obvious implication of this research is the necessity for programs to assist individuals with LD in the workplace and to formulate a range of vocational support approaches (Jahoda, Kemp, Riddell, & Banks, 2008). Our research suggests that people with LD would benefit from training related to social skills even more than those without LD. We believe that it may be possible to train individuals with LD for leadership and/or management—which could be very meaningful for them.

The soldiers who were appointed to leadership and demonstrated leadership effectiveness had no support-system training. They succeeded in correcting their disabilities unaided. We believe that more individuals could develop such abilities and become leaders if such support systems were available. That we found no differences in leadership effectiveness between commanders/leaders with and without LD aligns with the conclusions in the popular press. Our study demonstrates that peers and managers tend not to “see” or select individuals with leadership roles. A different perspective may not only help LD individuals’ integration. It may also prevent the business world from *not* recognizing the “next Steve Jobs”.

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