33 Leadership Intelligence

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Leaders matter to organizational performance and adaptability. Effective leaders matter the most in a dramatic and positive manner. Possibly owing to the power and magnetism or fear and suspicion about leaders, scholars have sought to identify the characteristics that distinguishes distinctive leaders. This search has gone on for millennia, from the ancient Greek and Chinese philosophers to legions of management and leadership researchers today. The search for a missing factor that could account for a significant amount of the variance in any outcome variable about leadership effectiveness has left scholars arguing, methodologists scampering for more and more precise measures, and practitioners vulnerable to fads. Although these projects have provided ample employment for many professors, internal and external consultants, and gurus, the research evidence suggests a more prosaic conclusion.

The "trait theory" of leadership, or what was called the great man theory from a misogynist perspective, was the quest for the illusive characteristic that defined and predicted who among those who became leaders were effective. Although never consistently confirmed in rigorous research, cognitive intelligence was often thought to be the determining variable. After about 2,000 years of searching, this approach gave way to approaches that claimed leadership was determined not by a characteristic of the person but by an interaction of a person's capability and style with characteristics of the situation. In research, this meant looking for interaction effects of individual and situational variables. Research in the last twenty-five years has focused on the study of followers (Riggio, Chaleff, & Lipman-Blumen, 2008; Tee, Ashkanasy, & Paulsen, 2013) and the relationship of leaders with those around them (Graen & Uhl-Bien, 1995).

Regarding capabilities of a person, all of the proposed and hypothesized forms of intelligence in this handbook seem relevant to leadership effectiveness in varying proportions. But most likely they need to be considered in some balance and in their context of each other and of the quality of the relationships among the leader and the people around them. If applied to research, this contribution suggests including variables and measures to ensure interaction effects are examined and various forms of intelligence are accounted for (covaried). In application, this contribution suggests a multilevel, more holistic approach to developing leaders.

Leadership Intelligence or Intelligent Leadership

The clearest answer to the question of whether leadership constitutes an ability and therefore could be claimed to be a form of intelligence would be, "no." Although neural processes are involved in the fulfillment of a leadership role, no serious researcher to date has provided evidence or even a theoretical framework within which to claim that there is a neural region or network that is the "leadership intelligence," or LI network.

The American Psychological Association's Task Force on Intelligence (APA Public Affairs Office, 1997) reported that predicting real-life outcomes is an important part of the standard against which we should judge an intelligence. It went on to add that there should be a consensus within a field as to the definition. Since no one is claiming that LI is a specific form of intelligence, we can discard that argument. But the exploration of the variety of neural networks invoked when a person engages in leadership activities and role enactment does suggest that there are multiple forms of intelligence that are relevant and used during the exercise of leadership and possibly effective leadership.

In an effort to establish emotional intelligence (EI) as a form of intelligence, Mayer, Salovey, and Caruso (2000) claimed that three criteria define an intelligence: (1) it should reflect a "mental performance rather than preferred ways of behaving" (pp. 269–270); (2) tests should show positive correlation with other forms of intelligence; and (3) the measures should increase with experience and age. Boyatzis and Sala (2004) claimed that, to be classified as an intelligence, the concept should be:

> (1) Behaviorally observable; (2) Related to biological and in particular neural-endocrine functioning. That is, each cluster should be differentiated as to the type of neural circuitry and endocrine system involved; (3) Related to life and job outcomes; (4) Sufficiently different from other personality constructs that the concept adds value to understanding the human personality and behavior; and (5) The measures of the concept, as a psychological construct, should satisfy the basic criteria for a sound measure, that is, show convergent and discriminant validity. (Campbell & Fiske, 1959)

This chapter is really about the role of intelligence in leadership, not the claim that the capability to be an effective leader is a distinct individual characteristic or a type of intelligence. Intelligent leadership, therefore, is leadership in which a person uses many forms of intelligence – cognitive, emotional, and social. Yet that might not help with a comprehensive theory or practical approach to leadership development. Not to claim we can complete the picture but we can add some important dimensions; we must examine some other components of the person and even personality if broadly defined.

Cognitive Intelligence

The argument about cognitive intelligence and leadership is between academics who wish to promote the idea that being classically smart is both necessary and sufficient

for leadership effectiveness and those that believe it is necessary but far from sufficient. Research confirms that various measures of general mental ability are highly related (Frey & Detterman, 2004). Various scholars have shown that the SAT (formerly called the Scholastic Aptitude Test and then the Scholastic Assessment Test) is significantly predictive of general cognitive ability (*g*) and both are highly correlated with grade point average (GPA). As Frey and Detterman (2004) explain, the SAT was originally seen as an IQ test but then diverged in the 1940s as a test of reasoning.

Another of the standardized tests is the Graduate Management Admissions Test (GMAT), which is for management school admissions, like the Medical College Admissions Test (MCAT) for medical school, the Law School Admissions Test (LSAT) for law school, and the Graduate Record Examination (GRE) for a variety of graduate schools. The GMAT was shown to predict grades in the first year of an MBA program only (Crooks, Campbell, & Rick, 1979), with no relation to actual managerial performance. Years and many studies later, the GMAT was found to be even more valid as a predictor of first-year GPA on an MBA program and also the entire GPA for the MBA program. It may provide evidence of perseverance (Oh et al., 2008). O'Reilly and Chatman (1994) showed that GMAT scores and motivation predicted early career success among MBAs within three to four years after graduation but that the separate measures of GMAT and motivation did not support the conclusion that cognitive ability is necessary but not sufficient for managerial or even leadership success or effectiveness.

Cognitive intelligence emerged over the years as having several crucial components, such as fluid and crystalized intelligence. Fluid intelligence is the ability to think logically and solve problems, especially in new situations (Cattell, 1963). Meanwhile, crystalized intelligence is a person's knowledge base about the world and learned operations such as using specific mathematical formulae (Cattell, 1967). Working memory is often seen as the third leg of the cognitive ability stool. It is seen as a system for processing that simultaneously stores and manipulates information, even when distractions or alternate competing ideas occur (Nisbett et al., 2012). As Nisbett and colleagues (2012) explained, working memory also incorporates verbal and spatial problem-solving, arithmetical reasoning, and abstract reasoning. They claimed that working memory is more closely assessed by tests like the SAT than are other elements of cognitive ability. They also claimed that fluid intelligence is closer to what most contend is general cognitive ability, or *g*, than other components.

Successful and Practical Intelligence as a Broader Concept

An alternative approach to cognitive intelligence were part of a "triarchic theory" by purporting that, internally, a person has "meta-components, and knowledge-acquisition components" (Sternberg, 1985, p. 59). This encompasses the analytic processes involved in thinking about life. Sternberg (1985, 2011) went on to propose that the application of these intelligences to everyday life constituted a "practical intelligence" (Sternberg & Hedlund, 2002), which he later refined to be "successful intelligence" (Sternberg, 1999).

Instead of focusing on analytic processes, speed, and working memory, Sternberg's (2011) theory postulated that such analytic processes were only one aspect of a person's ability to "adapt to the environment and learn from experience" (Sternberg & Detterman, 1986). Successful intelligence was the overarching concept that included the quest for goals in life and work. This incorporated crystalized and fluid intelligence components of the traditional cognitive intelligence theories and added elements from what was later to be called emotional intelligence (see the next section). In particular, practical intelligence was the formulation and use of tacit knowledge gained from one's experiences. This was directly related to the performance of leaders in management simulations (Sternberg, 2011) and leadership effectiveness while controlling for *g* (Hedlund et al., 2002; Sternberg & Hedlund, 2002).

One of the many contributions of this approach was bringing intelligence into the behavioral realm. People could now talk about, theorize, and study how individuals applied their internal capability and how it looked to observers. This raised the question as to whether there are forms of intelligence and neurologically based processing that might be more closely related to life and work outcomes and leadership than traditionally defined cognitive intelligence.

The challenge to the role of cognitive intelligence was further questioned in comprehensive studies. Grossman and colleagues (2013) showed that wise reasoning, which they defined as pragmatic analysis in social settings, especially within emotional and conflict events, predicted well-being, career and life satisfaction, and longevity. Their results showed that various measures of cognitive ability, like the WAIS comprehension assessment or processing-speed scale, were negatively related to wise reasoning and well-being. They went further to claim, as shown in prior research, that cognitive abilities such as crystallized intelligence, processing speed, and working memory showed no systematic, positive relationship to well-being (Grossman et al., 2013). These claims suggest wise reasoning is closely related to Sternberg's (1985) concept of practical intelligence.

Emotional and Social Intelligence

In addition to the expansion of intelligence from Sternberg (1985, 2011), among the seven forms of intelligence conceptualized by Howard Gardner (1983) were intrapersonal and interpersonal intelligence. Today, these closely correspond to what are called emotional and social intelligence (ESI), respectively. Although often classified as variations of EI, they have distinctly different neural networks as origins and different behavioral outcomes. The call for a behavioral approach first came with McClelland's (1973) key article in the *American Psychologist*, which sought to understand competencies and not just traditional intelligence. First labeled as an intelligence by Peter Salovey and Jack Mayer (1990), a flurry of research, opinion essays, theory articles, and practitioner pieces emerged. Daniel Goleman's (1995) book *Emotional Intelligence* brought the ideas into the mainstream of practice within organizations and education. Critiques followed (Matthews et al., 2006) and the research became increasingly rigorous.

By 2005, the research, definitions, and measures of EI were said to fall into three streams (Ashkanasy & Daus, 2005). Stream 1 was a direct measurement of how a person handled emotional information, as exemplified by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) model and measure (Salovey & Mayer, 1990). Stream 2 measures used the MSCEIT model but were based on self-assessment (Schutte et al., 1998; Law, Wong, & Song, 2004). Stream 3 comprised all other measures (Bar-On, 1997; Petrides & Furnham, 2000, 2001). By 2014, Amdurer and colleagues (2014) put forward a four stream, which comprised models with behavioral measures as examined in detail by Boyatzis (2009, 2017) and differed from Stream 3 in that the source of the information was from coded audiotapes of work samples, videotapes of simulations, or others' observations from 360° assessments. Behavioral ESI is likely measuring many of the components of practical intelligence but is clustered to reflect neural networks more closely.

A series of meta-analyses confirmed that all of these measures and approaches were significantly related to job performance. They included leadership effectiveness (Joseph et al., 2014; O'Boyle et al., 2011); leadership job satisfaction and satisfaction of their subordinates (Miao, Humphrey, & Qian, 2016); authentic leadership (Miao, Humphrey, & Qian, 2018a); and subordinates' task performance and organizational citizenship (Miao, Humphrey, & Qian, 2018b). Without the benefit of Stream 4 as a separate category, these meta-analyses all found that EI assessed in any stream was significantly predictive of the outcomes but that Stream 3 measures were more strongly related to the outcomes. Joseph and colleagues (2014) criticized Stream 3 measures' impact on outcomes in their own and others' meta-analyses because of the contamination of self-assessment measures with personality. Further work documenting Stream 4 measures has shown unique variance in the outcomes from the behavioral EI measure separate from the effect of the Big Five personality traits.

Several research studies have shown that behavioral measures of ESI demonstrate unique variance in several effectiveness measures (Boyatzis, Good, & Massa, 2012; Boyatzis, Rochford, & Cavanaugh, 2017). In these studies, measures of cognitive intelligence and personality in terms of the Big Five traits did not show significance in predicting effectiveness. This helps to confirm that ESI is distinct from cognitive or traditional intelligence and should be included in any model of intelligence explaining leadership. Another study had similarly shown unique and significant variance explained by EI (Cote & Miners, 2006) in academic performance, in contrast to cognitive intelligence. Using a Bayesian analysis, Boyatzis, Batista, and colleagues (2015) showed how behavioral ESI competencies showed no relationship to cognitive ability as measured by the GMAT in a large sample of MBAs.

Successful intelligence (Sternberg, 2011) would appear to be closely related to specific EI competencies, such as achievement orientation, emotional self-control, and adaptability. In the subset of successful intelligence framed as practical intelligence, Sternberg (2011) labeled a further subset as social intelligence (SI). This latter category has considerable overlap with specific SI competencies such as influence and the full range of competencies enabling people to build relationships with others.

Certainly the strong indications are that leadership effectiveness can be better understood by incorporating cognitive and ESI into the model of how intelligence relates to leadership.

Opposing Neural Domains and Cognitive vs. Social/Emotional Networks

To understand the differences between neural networks associated with traditional cognitive intelligence, practical intelligence, and ESI, we must turn to an explanation of the opposing domains of specific neural networks (Jack et al., 2012). The opposing domains are two important neural networks that affect our daily lives and functioning as leaders: the Task Positive Network (TPN) and the Default Mode Network (DMN).

The TPN is activated and enables a person to solve problems; analyze people or situations, especially data or financial information; focus on a task; focus on details and be somewhat resistant to change; and engage in abstract thinking. For leaders, the TPN is engaged in any analytic problem-solving, such as analyzing financial performance. It is a form of convergent problem-solving (Friedman et al., 2015). When activated, the TPN is seen as creating a psychological distance between the leader and others. The TPN consists primarily of the dorsal attention system (Fox et al., 2005); the frontoparietal control network (Vincent et al., 2008); the ventral attention network; and the dorsal anterior cingulate cortex (Jack et al., 2012; Martin & Weisberg, 2003; Prabhakaran et al., 1997).

The DMN activates and enables a person to scan the environment and be open to perceiving new ideas, notice and be open to people and their emotions, and be considerate of moral concerns (i.e., not the good or bad distinction that is more analytic or TPN but the sense of something as either fair and just or unfair and unjust). For leaders, the DMN enables brainstorming and more holistic, global thinking (Friedman et al., 2015). It consists primarily of the medial parietal and dorsal medial prefrontal cortex (dMPFC), the ventral medial prefrontal cortex, the right temporoparietal junction, the posterior cingulate cortex, the orbitofrontal cortex, and the nucleus accumbens (Buckner, Andrews-Hanna, & Schacter, 2008; Decety & Batson, 2007; French & Jack, 2014; Jack et al., 2012; Jack, Boyatzis et al., 2013; Van Overwalle, 2010).

Traditional cognitive intelligence is a product of a person activating and applying the TPN (Jack et al., 2012; Jack, Dawson, & Norr, 2013; Prabhakaran et al., 1997). Social, emotional, and practical intelligence is a product of a person predominantly activating and applying the DMN (Buckner, Andrews-Hanna, & Schacter, 2008; Jack et al., 2012).

The distinctive importance of these two networks is that they have almost no overlap and suppress each other (Fox et al., 2005; Jack et al., 2012). This antagonistic relationship helps to explain why leadership styles and behavior have been divided into task and social dimensions for so long (Boyatzis, Rochford, & Jack, 2014). It also explains why so many developmental efforts at management and leadership education and training fail to produce improvements in the desired behavior that last more than a few weeks or months (Boyatzis et al., 2014) because of the curricular

focus on abstract and analytic processes. Subjects taught in MBA programs such as finance, accounting, economics, statistics, supply chain, and operations research are usually taught through formulae, problem sets, and predominantly analytic thought processes. It also helps us understand why the focus on goals, measurement, and dashboards in organizations repeatedly activates the TPN, to the exclusion of the DMN, which may result in expedient but unethical decisions and actions (Rochford et al., 2016), not noticing or valuing people in the organization, and not noticing competitors' actions or changes in market demand.

While it has been conjectured that people may have individual dispositions toward using one or the other of these networks (Epstein et al., 1996), Jack and colleagues (2012) note that the toggle rate between the two networks may be as brief as thousandths of a second. Some leaders may be thought to be using both networks at the same time but they are adept at switching below the conscious threshold that others might notice or they might be self-aware. It is also hypothesized that effective leaders are more attuned to activating a network as appropriate to a situation, for example the TPN in addressing a financial variance issue or the DMN in understanding a shift in customers' preferences. Effective leaders need both networks but they also need to be adept in moving back and forth between them.

While this appears at first glance to be similar to Kahneman's dual-process theory (Kahneman, 1992, 2011), it actually refines it considerably. In Kahneman's (1992, 2011) theory, System 1 thinking is automatic, fast, and seemingly effortless. Meanwhile, System 2 thinking is slow, deliberative, reflective, and controlled. According to Friedman and colleagues (2015), opposing domains explain how both the fast and the slow circuits of the dual-process theory have analytic and social dimensions. That is, the opposing domains can map onto the dual processes and the result is four clusters of consequences. But the opposing domains explain the neural functioning more precisely. For example, for leaders, controlled or slow processes in the social and empathic network (i.e., DMN) would manifest as autobiographical recall, emotional regulation, and the telling of social narratives. While the controlled or slow processes in analytic networks (i.e., TPN) would manifest as any goal-driven logic, analytic and especially empirical analysis of budget variances, and often as a more competitive attitude (Friedman et al., 2015). For the dual-process fast and automatic processes, the analytic network, or TPN, would be activated with practiced actions (i.e., habitual) and rapid calculations. In contrast, fast processes with the empathic network, or DMN, would manifest as emotion-driven statements and involve aspects of social stereotyping as well as brainstorming (Friedman et al., 2015).

EI and SI appear to be primarily in the arena of the DMN (Buckner et al., 2008; Boyatzis, Rockford, & Jack, 2014; Fox et al., 2005; Jack et al., 2012, 2013; Martin, & Weisberg, 2003;). Except for those aspects of EI and practical intelligence involving emotional self-control and adaptability, which are more likely within the domain of the TPN, all other aspects would require activation of the DMN. To understand the conflicts among the different forms of intelligence, more research is needed to examine the battle in the brain for mindshare.

Orientation and Dispositions to Leadership

Leadership Motive Profile and the Role of Need for Power

Leadership requires influencing others (McClelland, 1975, 1985; Yukl, 1998; Yukl & Van Fleet, 1990). It is about having an impact on others and making things happen. Of the many attempts to understand or explain a person's motivation for being in a leadership position, perhaps the most illuminating was that of McClelland and his colleagues. They studied the underlying disposition to want to influence and have an impact on others. McClelland (1975, 1985) called this the Need for Power, defined as an unconscious drive or motive in which the person wanted to have an impact on others. It was assessed through a conscious/unconsciousness projective test, the Thematic Apperception Test (TAT). McClelland showed repeatedly that self-assessment measures assessed valuing power but not the motive. Valuing power is how people answer self-report measures or surveys about their own power needs. McClelland (1985) showed with repeated studies that such self-assessment statements reflect a person's values but not their actual behavior. Because of the assessment method, a person's self-assessment of their power needs and desires is a measurement of their values or attitudes about power. Meanwhile, a projective test like the TAT has been shown to get beneath the self-attribution level and reflect deeper, predominantly unconscious drives. As a result, the self-assessment of the motive did not predict expected outcomes and behavior but rather attitudes (McClelland, 1985). Assessment based on the TAT measures provided a more accurate measure of the drive (McClelland, 1985) and the expected behavior and outcomes than self-report surveys of a person's power needs.

The Need for Power was shown to predict a variety of life and job outcomes (McClelland, 1985). Yet, when the need for power was accompanied by a relatively low need for affiliation (being friendly and caring toward others) and a relatively high unconscious desire for self-control, the combination was called the Leadership Motive Profile (Fontana et al., 1987; Jenkins, 1994; Jacobs & McClelland, 1994; McClelland, 1975; McClelland & Boyatzis, 1982). This pattern of combined motives showed the most consistent positive relationship to leadership effectiveness. A related form of a high Need for Power with relatively low self-control was associated with more "personalized power" and what Winter (1973) called the Don Juan Syndrome. People with this pattern of power drive in leadership positions tended to be self-serving, narcissistic, and more concerned about their own reputation and impact than the greater good of the organization and its many stakeholders.

In later work, McClelland applied the concept of the Need for Power to Stewart's developmental stage model of personality (see McClelland, 1985) and classified a high power drive with self-control as "socialized power" and a high power drive with relatively low self-control as "personalized power." These were two forms of Stewart's Stage 3 in personality development. The unconscious drive for self-control of a person's impulses and urges emerged in studies as a form of sacrifice of the person for the good of the organization or group (i.e., family, relationships).

The *leadership motive pattern* was shown to predict increased health problems because of the power stress invoked in leadership roles. The increased demand for the exercise of influence and power was repeatedly shown to activate the sympathetic nervous system (i.e., the human stress response), which compromises a person's immune system and leaves them vulnerable to disease agents and processes. In an interesting anthropological insight, McClelland (1975) showed that countries with this leadership motive pattern in their popular literature and myths had higher rates of cardiovascular disease per capita than those with lower such drives.

Meaning and Purpose

Ancient philosophers claimed that a sense of purpose, or "telos," helped to drive one's behavior (Ross, 1925). In an early stage of American pragmatism, Benjamin Franklin said that people had it within their own power to become more virtuous through intentional actions (Franklin, 2012). In psychology, William James (1890) claimed that a person can exert conscious volition or will in framing and determining their actions in life. The articulation of one's intention or will can be seen as a vision or a dream of a desired future. It has been recognized as a driving force behind sustained, desired change (Boyatzis & Akrivou, 2006; Higgins, 1987). The contrast of the ideal self to the real self or the ought self suggested that a sense of purpose provides meaning for a person (Boyatzis & Akrivou, 2006; Higgins, 1987). When called on in teams or organizations, a shared vision may excite, engage, and inspire others (Boyatzis, Rochford, & Taylor, 2015).

Being able to articulate and remind those involved of their collective sense of purpose, if not their noble purpose, appears to be a well-recognized feature of effective leadership (Bennis & Nanus, 1985; Berg, 2015; Greenleaf, 1970/2015). Research linking vision, purpose, or calling to leadership has taken many forms (i.e., calling, legacy, noble purpose) and only appeared in the last fifteen years in journals. A set of articles showed the potency of shared vision in a special issue of *Frontiers in Psychology* in 2015. Shared vision affected leadership in predicting succession of daughters in family businesses (Overbeke, Bilimoria, & Somers, 2015); financial health over time of family businesses (Neff, 2015); effectiveness of next-generation leaders of family businesses (Miller, 2014); effectiveness of physician leaders (Quinn, 2015); effectiveness of IT managers (Pittenger, 2015); increased corporate social responsibility (Thornton, 2015); and success of mergers and acquisitions when experienced by leaders (Clayton, 2014). In other studies, perceived shared vision in knowledge-worker teams in consulting and manufacturing (Mahon, Taylor, & Boyatzis, 2014), among engineers in project teams (Boyatzis et al., 2017), for community college president's effectiveness (Babu, 2016), and in stimulating innovation in high-tech firms (Kendall, 2016) has moderated and amplified the impact of ESI on engagement.

While Bennis and Nanus (1985) described how an effective leader would focus the attention of others through vision. Kantabutra and Avery (2010) explained more deeply why a sense of vision and purpose helped people organize their collective actions. One study showed that it is possible to help a person build a more

comprehensive and compelling personal vision (Mosteo et al., 2016). Another study showed how even thirty minutes of coaching about a person's personal vision activated many of the components of the person's DMN but, specifically, the lateral visual cortex, which allows a person to dream and imagine (Jack et al., 2013).

Whether it is the elicitation of hope from repeatedly being reminded of an organization's shared vision or the focus created by talking about the shared sense of purpose, leaders appear to activate engagement, citizenship, and innovation by others when they remind the people around them of this essence of why they are together. Movements have emerged to foster shared vision among CEOs. Conscious Capitalism is a worldwide association of CEOs committed to develop others, our communities, and a noble purpose through work organizations. They want business leaders to expand their mission to include moral and responsible dimensions within their organizations (see www.consciouscapitalism.org).

Values and Style

The search for the impact of values on effective leadership has continued. The results have been inconsistent. It appears that separate values do not consistently predict the behavior of leaders but that value orientation, which has been called operating philosophy, does (Boyatzis, Murphy, & Wheeler, 2000).

The study led by Bernard Bass (2008) on the characterization of leadership styles as transformational versus transactional produced a major stream of research. The leader using the transformational style emphasizes the big picture, vision and purpose, and the desire to innovate. The leader using the transactional style emphasizes exchanges and quid pro quo approaches to motivation and engagement. Prior to that, in reaction to world events, in the 1940s, leadership styles of democratic, authoritarian, and laissez-faire organizations were studied (Lewin, Lippitt, & White, 1939). The democratic style involved others in decision-making and encouraged a view that the leader was also one of the people in the organization. The authoritarian style involved a concentration and exercise of power coming from the leader onto others who were less potent in any situation. The laissez-faire style appeared as less involved and being more permissive – going along with whatever was occurring. In the 1960s, Theory X and Theory Y were contrasted as a mechanical approach focused on instrumentality and efficiency versus a human approach (MacGregor, 1960).

The transformational leadership style was shown to predict effective leadership in many settings (Avolio, Bass, & Jung, 1999). The transactional style was less effective. Later studies showed that both were useful but in different settings. The transactional style was effective when the work was routine (Bass, 2008). In one study, behavioral ESI (i.e., as seen by others) was strongly related to the use of a transformational style of leadership (Bajaj & Medury, 2013).

In taking a more relational approach, resonant versus dissonant leadership styles were examined in terms of neural activation. The resonant leadership style was the experience of the leader and the people around them as being in sync or in tune with each other. It was often characterized as involving the experience of hope through

vision or purpose, caring through compassion and authenticity through mindfulness. The dissonant leadership style was the experience of distance and separation of the leader and the people around them. It was often experienced with leaders who micromanaged others, were negative, controlling, even at times nasty and demeaning to others. Boyatzis and colleagues (2012) examined neural activation in executives in reaction to listening to brief statements about moments each person had with specific resonant and dissonant leaders in their past. Memories of resonant leaders activated many elements of the motor neuron network and the social network within the DMN. Meanwhile, memories of specific moments with dissonant leaders suppressed motor neuron networks and two-thirds of the time suppressed elements of the DMN activated with recollections of moments with resonant leaders. This suggested that both leadership style and the nature of the relationship between the leader and their people around them were important in helping to stimulate more openness.

Eighty years of research depicting leadership styles as different orientations to tasks versus social- or people-oriented was clarified as primarily emerging from two dominant neural networks discussed briefly earlier in this chapter, the TPN and DMN (Boyatzis et al., 2014). These neural networks helped to explain why these two styles were so often seen by scholars and practitioners as alternatives, with the best leadership being the use of both – but that was an elusive aspiration.

The Dark Side of Leadership

Unlike the other forms of intelligence and possible moderators and mediators of effective leadership, there are some characteristics, often called traits or even styles, that have been associated with the dark side of leadership, namely authoritarianism (Adorno et al., 1950), which has also been called Machiavellianism (Christie & Geis, 1970), and narcissism (i.e., ego-centrism or self-centeredness). Along with psychopathy, they have been called the dark triad (Paulhus & Williams, 2002). The choice in framing this chapter was to focus on the characteristics that positively affected leadership. Yet we would be remiss in not declaring that there have been traits and styles that have consistently been associated with less effective leadership or, at best, unevenly associated with leadership effectiveness.

Narcissism does appear related to self-perceived leadership effectiveness but has no relationship to other-perceived effectiveness (Grijalva et al., 2015). It also shows no consistent relationship in either direction to leadership effectiveness with other measures but does suggest a curvilinear relationship in which some of it might be useful but not too much (Grijalva et al., 2015). Similar relationships to leadership effectiveness have been noted with an authoritarian or Machiavellian personality in leaders and even with psychopathology (LeBreton, Schiverdecker, & Grimaldi, 2018).

Quality of Relationships as the Context of Leadership

As statistical methods have become more sophisticated and theories more detailed, the study of leadership has become increasingly complex and subtle. While

an observer would likely admit that anyone's individual capabilities, including various forms of intelligence, may appear in any situation in life, the observed behavior is likely to be modified by the situation. Although role clarity, structure, and culture may affect a leader's behavior, it is the quality of one's relationships that might have the most immediate and direct impact on the transformation of their individual abilities. This leads to a need to contemplate and invoke moderators and mediators in leadership research (Fischer, Dietz, & Antonakis, 2017; Miao, Humphrey, & Qian, 2017).

The concept of leadership relationships on which the most academic articles have been published was created by George Graen and called the Leader-Member Exchange (LMX) (Graen & Uhl-Bien, 1995). From this literature, we know that a person's relationship to their immediate supervisor often mediates or moderates the impact of individual characteristics on leadership effectiveness and engagement.

To examine the role of relationships, one, more recent, approach has looked at the degree of shared vision, shared compassion, shared positive mood, and later energy in the relationships. Among knowledge workers in consulting and manufacturing research and development teams, shared vision within the teams moderated the positive impact of average EI as observed by teammates on their engagement (Mahon, Taylor, & Boyatzis, 2014). In family businesses, shared vision between a daughter and her father moderated the relationship of the daughter's self-efficacy on likelihood of succession to the CEO position (Overbeke, Bilimoria, & Somers, 2015). Miller (2014) found that shared vision, among other family climate variables, moderated the impact of behavioral ESI (i.e., as seen by others) on next-generation leader effectiveness. Among physician executives in hospitals, Quinn (2015) showed that shared vision mediated the impact of ESI on leader organizational citizenship, while Pittenger (2015) showed a comparable mediation of ESI on engagement of IT managers and professionals. The effect of philosophy and values on the corporate social responsibility of leaders was mediated by the degree of shared vision (Thornton, 2015). Meanwhile, Neff (2015) found it to be one of the five factors in the business climate among family businesses that predicted multiyear financial success. The perceived degree of shared vision among engineers in project teams contributed 27 percent of the unique variance in their own engagement, suggesting that relationship quality may not just be a moderator or mediator of effectiveness but may instead be another key variable.

Conclusions

While we contend that there is no specific part of the brain and focused ability that constitutes an LI, there are many networks within the brain and personal capabilities that contribute to a person being able to demonstrate intelligent leadership. This appears in the form of effective leadership with the capability of leveraging one's relationships and opportunities toward collective purpose and goals. When used ethically, this composite of a person's talent motivates the human spirit and leads.

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