Thinking style and emotional intelligence: An empirical investigation

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ABSTRACT

The purpose of this paper was to empirically examine the conceptual links between thinking styles and emotional intelligence. The paper reviews pertinent literature about thinking styles and emotional intelligence. Findings from the literature review suggest that thinking styles can be conceptualized as right-brained, left-brained, or whole-brained and can be measured with the subscales of the MBTI. Findings also revealed that although emotional intelligence has been measured a number of ways in the extant literature; the key processes of management and awareness are most closely related to thinking styles. Based on the review of literature, a number of specific hypotheses about the pattern of relationships between thinking styles and emotional intelligence concepts were tested. Analytical findings revealed that both left and right-brained thinking styles are related to emotional intelligence variables in conceptually expected directions.

Keywords: Emotional Intelligence, Thinking Style, Leadership

INTRODUCTION

There is a narrative circulating in many management circles that starts with the idea that highly technical people typically arrive at the top of their given area of expertise through intense focus on logical analysis, problem resolution, technical terminology understanding, and proficiency in specific areas of their chosen field. Another key feature of this narrative is that academia has also followed course by focusing its educational programs in these areas. This learning process is typically reinforced in their careers by continued learning of the exact same skills via company financed conferences, seminars and various forms of advanced discipline education. As the person becomes more of an expert, they are generally more respected and regarded by their management and peers bringing about a certain, possibly incorrect, aura of referent and expert leadership and management qualities. Once they reach the top of the non-management hierarchy, the normal course of action is many times to automatically assume them for promotion into a frontline management position. Typically, both the employee and their managers expect this as a natural progression up the corporate ladder. This "work hard and keep moving up" idealism is in itself an ingrained part of general business culture and expectations.

To the extent that this narrative exists in the real world, it follows that while this model may work in many traditional non-technical occupations, the highly technical person often times falls short showing an incredible lack of emotional intelligence, which is a major factor in management and leadership success (Bradberry & Greaves, 2009). They struggle with their inability to relate to people, their lack of understanding personal inter-relationship intricacies, and failure to be an empathetic encourager, mentor and leader to their staff and teams. More simply put, many times in the case of the technical professional desiring to move into management, as Goldsmith (2007) says, "What Got You Here, Won't Get You There", (Goldsmith, 2007). While interpersonal skills are necessary to manage in any discipline, the highly technical person often times has the intrinsic, erroneous belief that his or her expert technical knowledge and ranking, alone, automatically makes them good managerial candidates. Goldsmith (2007) says:

> It's not that these people don't know who they are or where they're going or what they want to achieve. Nor is it that they don't have an adequate sense of self-worth. In fact, they tend to be very successful (and their self-esteem can often be excessive). What's wrong is that they have no idea how their behavior is coming across to the people who matter - their bosses, colleagues, subordinates, customers, and clients….They think they have all the answers but others see it as arrogance. (Goldsmith, 2007, p.7).

Prior to this transformation from technical superstar to management-leader, time must be spent to ensure this is the proper course of advancement for the individual involved because oftentimes the reason that individuals struggle so much in management and leadership roles may be a result of their thinking style (i.e. brain dominance). While no firm empirical evidence could be found for this narrative, it illustrates the importance of personal characteristics such as thinking style and emotional intelligence for the successful leader.

The goal of this manuscript, therefore, is to develop a theoretical and empirical link between individual thinking style, discussed as brain dominance, and emotional intelligence. Drawing from previous research, the constructs of "sensing" or "intuition" and "thinking" or "feeling" from the Myers-Briggs type indicator are discussed as proxy measures for left, right,

and whole brain thinking styles. A theoretical connection between thinking style and the concepts of emotional intelligence awareness and emotional intelligence management from the emotional intelligence literature is then proposed.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Brain Hemisphere Dominance

Left and right brain hemispheric distinctions have been long reviewed and debated among scientists and academic scholars. Some of the earliest documented research in brain lateralization came from nineteenth century French physician and surgeon Pierre Paul Broca. Broca discovered through his medical practice, a link between brain hemispheres and speech and other cognitive skills. According to Venita (2002), "The first cortical localization that became widely accepted linked fluent articulate speech to the frontal lobes. Cortical localization of speech was a much debated issue...before Broca's epoch presentation in 1861", (Venita, 2002, p. 1). These findings, in turn, created an area of research that evolved into defining specific traits, characteristics of thought processes, and emotions as localized to the two distinct hemispheres of the brain.

A leading researcher in this area was William E. "Ned" Herrmann. Hermann's research developed and popularized the left and right brain model of actions, thought processes and personality. The brain hemisphere dominance theorem was further refined by Herrmann, and others, into a model of whole brain thinking which identified four distinct areas of brain thought: (1) Rational self, (2) Experimental Self, (3) Safekeeping self, and (4) Feeling self. (Herrmann, 1996). This new model was embraced and enhanced again by many researchers including Clayton and Kimbrell (2007) who state:

> The model is quadripartite in that two types of dominance are designed for each [brain] hemisphere: (1) Cerebral left: the analytical, logical, problem-solving person; (2) Lower left: the reliable, organized, controlling, conservative person; (3) Cerebral right: the creative, conceptual, synthesizing person; (4) Lower right: the interpersonal, emotional, sensitive, musical person. (Clayton & Kimbrell, 2007, p. 924).

After Herrmann's death in 1999, his daughter, Ann Herrmann-Nehdi, among others, has continued his work. Herrmann-Nedhi (2010) states:

> The first critical takeaway from whole brain thinking that we need to understand is that we are designed to be whole. The brain is specialized, and the degree of specialization affects how we think and what we pay attention to. We do not function with "half a brain" as the terms "left brained" and "right brained" imply. In fact, the brain's very design gives us the opportunity to think in terms of 'and' versus 'or'. This is not new information, although the advent of popular books, such as Daniel Pink's The Whole New Mind, which focuses on the power of right brain thinking, has contributed a new level of general awareness to the subject. But as Pink himself recently said to me, "Left brain approaches haven't become obsolete. They've become insufficient. What people need today isn't one side of the brain or the other, but ... a whole new mind." (Herrmann-Nehdi, 2010).

However, many researchers and scientists consider the left, right, and whole brain school of thought non-conclusive at best, and faddish pseudoscience at worst. According to Genovese (2005):

> Hemispheric cognitive style remains controversial. Some researchers have disputed the taxonomy itself. Riding and Rayner (1998) asserted the existence of separate visual-verbal and holist-analytic dimensions, which are uncorrelated. Epstein (1994) proposed the existence of two processing systems--intuitive and experiential. Others have claimed that the connections between these styles and actual hemispheric functioning have been exaggerated and often border on pseudoscience (Harris, 1985; Murdoch, 1995). Some of the instruments that purport to measure hemispheric cognitive style have been shown to have low reliability and questionable validity (Hartman & Hylton, 2000; Nestor & Safer, 1990; Zalewski, Sink, & Yachimowicz, 1992). (Genovese, 2005, p.468).

Left and Right Brain Thinking Styles

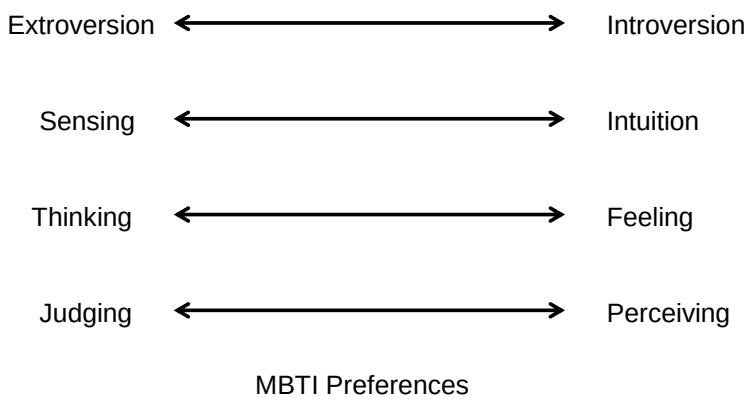
Although some researchers are skeptical regarding the validity of the brain dominance theory, in general, it is believed that the left and right hemispheres of the brain perform different functions. Individuals, who are considered to be right brain dominant or 'right-brained' thinkers, are considerably different than 'left-brained' thinkers. Previous research suggests that this may be due to the kind and way information is processed in the right region of the brain in comparison with the left region of the brain. According to Hanna, Wagle, and Kizilbash (1999), the left hemisphere of the brain is superior in regard to "reading, speaking, analytical reasoning, and arithmetic" while the right hemisphere of the brain is superior at "spatial tasks, recognizing faces, music" and can be considered more "spatial, holistic, and simultaneous in nature" (p. 20). Simply put, the left hemisphere "treats stimuli serially" while the right hemisphere treats stimuli "as a gestalt", (Clayton & Kimbrell, 2007, p. 923). In a large study of graduate management students, McAdam (2006) found empirical evidence that individuals with occupations generally considered to be 'technical' in nature (such as engineering, finance, accounting, and law) were left brain thinkers. Likewise, individuals who reported occupations such as counseling, training, and sales were right brain thinkers (McAdam, 2006). Horton (1995) found evidence that parents held their children in their left arm considerably more than their right arm. Horton's (1995) research indicated that there is a "right lateralization of the substrate that is specific to comforting behavior", and ultimately, the "evidence suggests greater right hemispheric activation with emotional tasks" (p. 5).

Thus, individuals with a left-brain thinking style are normally more likely to have a greater ability to analyze, develop processes, and coordinate action (i.e. manage). Consequently, individuals with a right-brain thinking style are normally more likely to possess a greater ability to recognize cognitions, emotions, and discernment (i.e. awareness). As a result, the association of the highly technical individual with left-brain thinking and the more creative, emotional, or artistic individual with right brain thinking has become widespread and even pervasive in modern culture (Bryden, 1990).

Myers-Briggs Type Indicator as a Proxy for Thinking Style

Previous research has examined the relationship between the constructs of the Myers-Briggs type indicator (MBTI) and thinking style. The constructs of the MBTI are on a continuum and generally considered a preference towards a particular style of thinking (see Figure 1).

Figure 1



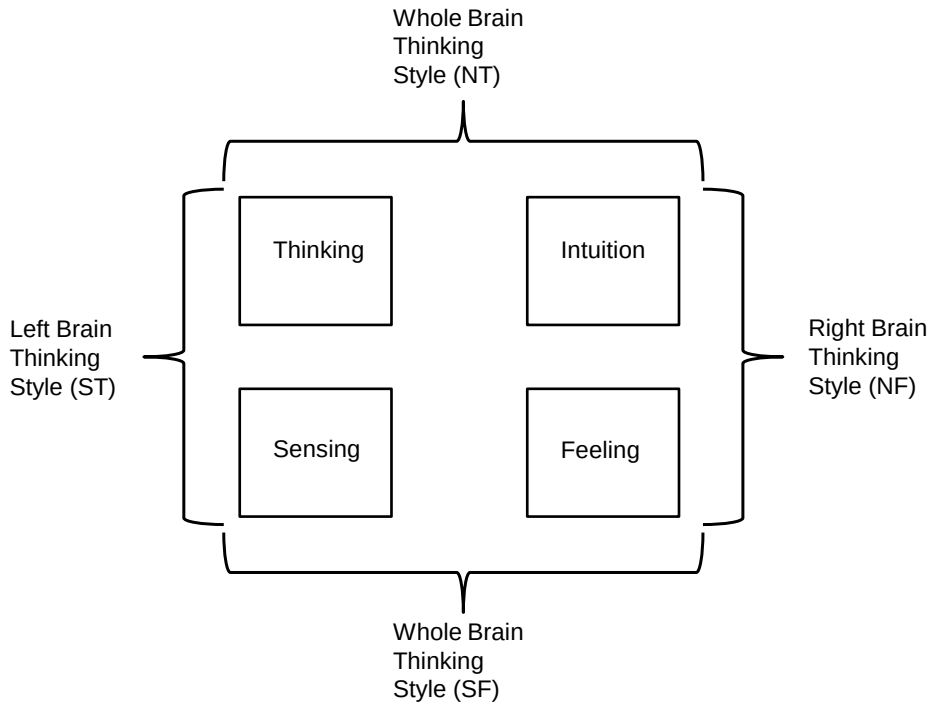
While there are sixteen different combinations of the four letter designation for the constructs of the MBTI, only the "sensing"(S) or "intuition" (N) and "thinking" (T) or "feeling" (F) constructs are considered proxies for thinking style (Clayton & Kimbrell, 2007). For example, an individual who focuses on the raw information they take in would have a "sensing" preference while an individual who preferred to not only take in information but then interpret and add meaning to it would have a preference towards "intuition". Likewise, an individual that makes decisions primarily through logic and linear thinking would have a preference for "thinking" while an individual who makes decisions by first considering the gestalt or context would have a preference towards the "feeling" construct. Thus, individuals with preference combinations of ST are generally considered to have a left brain thinking style, individuals with preference combinations of NF are generally considered to have a right brain thinking style, and individuals with either NT or SF preference combinations are generally considered to have a whole brain thinking style (Power & Lundsten, 1997; Power, Kummerow, & Lundsten, 1999; McAdam, 2006; Clayton & Kimbrell, 2007). Having thus established that the MBTI is a proxy measure for thinking style, it is important to understand how thinking style relates to emotional intelligence among leaders (see Figure 2).

Emotional Intelligence

The highly technical person in a management role may have very low emotional intelligence awareness and emotional intelligence management (major components of emotional intelligence in most measures) and may get caught up in a continuing cycle of repetitive beliefs. This issue was addressed by Darling and Shelton (2001) who state:

> Hence, managers' beliefs reinforce their perceptions and their perceptions reinforce their beliefs. Consequently, individuals in managerial roles often function in a paradigm that is based on a continuous cycle of repetitiveness…not because opportunities are limited, but because perceptions always are….However, managers can learn to become more aware of their intentions and as they learn to change these intentions, their perceptions change accordingly and leadership is enhanced. (Darling & Shelton, 2001, p.266).

Figure 2



This observation by Darling and Shelton (2001) is supported by a growing body of literature, which suggests that emotional intelligence is a strong component of superior leadership, which according to Colfax, Rivera, and Perez (2010) consists of cognitive intelligence (IQ), personality, and emotional intelligence (EQ). According to Bradberry and Greaves (2009, p. 17), "emotional intelligence is your ability to recognize and understand emotions in yourself and others, and your ability to use this awareness to manage your behavior and relationships". Although numerous definitions and measures of emotional intelligence can be found in the extant literature and only partial intersubjective certifiability has developed for the notion of emotional intelligence, its importance is nonetheless underscored succinctly by Kuepers and Weibler (2006). According to Kuepers and Weibler (2006) in order for leaders to engage in intellectual stimulation of followers, it is necessary to have a modicum of empathy. Empathy can be defined as "the intellectual identification with or vicarious experiencing of the feelings, thoughts, or attitudes of another" (Dictionary.com). Thus, empathy, according to the authors, goes deeper than simply understanding the emotions of followers, however, and involves challenging the followers to "accept responsibility for their moods and emotions, and how to take action to shift themselves into more productive emotional spaces, thus getting themselves out of the victim mentality that goes with some emotional experiences" (Kuepers & Weibler, 2006, p. 376). This statement by Kuepers and Weibler, although not specifically

speaking to the notion of emotional intelligence, articulates the overarching theme of emotional intelligence awareness and emotional intelligence management.

Additionally, Leary, Reilly, and Brown (2009) studied the direct overlap between some dimensions of the MBTI and a measure of emotional intelligence (EQ-I) in a sample of $N = 529$ managers and supervisors at a large manufacturing facility in North America. The EQ-I, utilized by Leary et al. (2009) consists of five scales, namely intrapersonal, interpersonal, adaptability, stress management, and general mood. The authors note that their approach to measuring emotional intelligence with the EQI is consistent with a "mixed-model" approach that examines both traits and social competence. This differs from the "ability models" that focus on both "intelligence", loosely defined, and emotion (e.g. see Bradberry & Greaves, 2009 for a popular iteration of this approach). This is important to note in the current paper because the "abilities" approach to measuring emotional intelligence seems to be more popular among practitioners. In fact, the "abilities" approach often subdivides emotional intelligence into two separate "competencies", namely personal competence and social competence. Similarly, in the current paper emotional intelligence is being subdivided into awareness (which includes both personal and social) and management (which includes both personal and social).

Emotional Intelligence and Thinking Style

To be clear, it is the specific combination of the MBTI types as a measure of thinking style that is of interest in the current paper. More specifically, the combination of the NF type has been established as a strong proxy for right-brain thinking style and the ST type has been established as a strong proxy for left-brain thinking style. Although not considered in this study due to an insufficient sample size, the NT and SF combinations have been established as proxies for whole-brain thinking styles. Although Leary et al. (2009) utilized the MBTI for its conceptually derived purpose, namely to measure personality traits, other researchers have utilized combinations of underlying dimensions of the MBTI as a proxy for thinking style (Clayton & Kimbrell, 2007).

The challenge is to link thinking styles that have been measured in this manner with emotional intelligence. While no studies could be located that had measured this relationship specifically, some studies point the way for future research in this area. Nutt (1986) and Kirby (1997), for instance, found that dominant left-brain thinkers (i.e., ST on the MBTI) had trouble relating to and being flexible with people who had other thinking styles, particularly in group settings. In fact, Kirby (1997) found that individuals who have a thinking style that differs from the rest of the group might have trouble coping with the thinking styles of the majority of people in a group, to the point of actually attempting to disguise their own thinking style. This could suggest that an individual with a strong left-brained thinking style might have little awareness of their own emotions and how they are communicated to others and little awareness of the emotions of others and what they are communicating and, ultimately, difficulty managing those interactions. Taken together, this could suggest that having a strong left-brained thinking style is associated with having less emotional intelligence awareness and less emotional intelligence management, and ultimately, low total emotional intelligence. Based on these findings, it is possible to develop specific hypotheses about the relationship between the left-brain thinking style, as measured by the MBTI, and emotional intelligence awareness, emotional intelligence management, and total emotional intelligence.

Hypothesis #1a: Left-brained thinking style will be negatively and significantly related to emotional intelligence awareness.
Hypothesis #1b: Left-brained thinking style will be negatively and significantly related to emotional intelligence management.
Hypothesis #1c: Left-brained thinking style will be negatively and significantly related to total emotional intelligence.

Whereas hypotheses about the right-brain thinking style and emotional intelligence can be developed by drawing upon the conceptual literature, it has been traditionally difficult to evaluate due to a very small sample size. Following the theory asserted in this manuscript, using constructs from the MBTI as proxy measures for thinking style and their relationship to emotional intelligence may prove to be much more realistic. Given this limitation, however, there is conceptual agreement among many researchers that the right-brain thinking style is positively related to emotional intelligence awareness and emotional intelligence management (Higgs, 2001; McAdam, 2006; Clayton & Kimbrell, 2007; Leary et al., 2009). For example, Nutt (1986) found that individuals with right brain thinking styles were very adept at interacting with others who had a different thinking style from their own. This alludes to right brain thinkers' awareness of the interactions of emotions between people and their ability to manage those interactions. Likewise, Leary, Reilly, and Brown (2009) found evidence of a significant and positive relationship between the 'Feeling' dominance associated with a right brain thinking style and an interpersonal emotional intelligence scale. Thus, the following hypotheses are asserted:

Hypothesis #2a: Right-brained thinking style will be significantly and positively related to emotional intelligence awareness.
Hypothesis #2b: Right-brained thinking style will be significantly and positively related to emotional intelligence management.
Hypothesis #2c: Right-brained thinking style will be significantly and positively related to total emotional intelligence.

METHOD

Sample

To test the hypotheses developed above, $N = 127$ respondents were asked to complete an online survey. Respondents were provided unique URLs for the survey, via an email, to help ensure anonymity and only one response per respondent. The research pool was comprised of alumni from a chamber of commerce adult leadership group who were all professionally employed individuals.

MEASURES

Demographics

Respondents were asked to indicate their gender by answering the following question: "What is your gender?" (e.g., Male, Female). Respondents were also asked about their age, their

ethnicity, how many years of education they had attained, how many years they had been employed in their current position, and how many employees they individually supervised. In order to use the gender variable in regression-based analyses, the gender item was converted into two separate dichotomously coded variables labeled "male" and "female", wherein a value of "1" indicated the presence of that variable and a "0" indicated the absence of the variable. This allowed the researchers to treat gender (i.e., initially a categorical variable) as two separate continuous variables for the purpose of regression based analyses (e.g., partial correlations).

Frequency analyses revealed that the respondents had completed an average of 5 years of post-secondary education, and were an average age of 44 years. Respondents also had an average of 9 years tenure in their current jobs and currently supervised an average of 6 employees. Approximately 58% of respondents were male and 42% were women, while 96% were Caucasian, 3% were Hispanic/Latino, and 1% were Native American.

Myers-Briggs Type Indicator Status

Respondents were asked to either identify their individual MBTI "type" (e.g., INTJ) or were given a link to take a shortened version of the MBTI online in order to obtain their individual "type". Researchers used the self-identified types in order to then code respondents' thinking styles as left-brained (i.e., ST), right-brained (i.e., NF), or whole brain (i.e., SF or NT). Researchers then created separate dichotomously coded variables for each of the three thinking styles, wherein a "1" indicated the presence of the variable, whereas a "0" indicated the absence of the variable. This allowed the researchers to include these otherwise categorical variables in regression=based analyses (e.g., partial correlations), which are designed for use with continuous variables. Because of the small sample size, the decision was made to only use left or right-brained thinking styles in subsequent analyses.

Emotional Intelligence

Emotional intelligence (EQ) was measured with a 33-item likert-type scale, which was developed by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim (1998). The measure asked respondents' to identify whether or not they agreed with each of the 33 items (i.e., see below for a complete listing of the items). Response choice options were "1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree". In order to examine the underlying factor structure of the measure, researchers computed a series of principal components analyses with Varimax rotation. Initial inspection of the results of these analyses suggested eight components with eigenvalues greater than 1; the model explained 62.14% of the cumulative variance among the 33 items. Because published research utilizing this measure had suggested four overall components and because this made more conceptual sense in light of the extant literature, the decision was made to utilize a four-factor solution. In order to develop this solution, the rotated component matrix was examined in order to identify items with moderate cross-loadings across multiple components. This ultimately resulted in eliminating 13 items and retaining 20 of the original items (e.g. see below for final items). The results of the principal components analyses on the final 20 items revealed a four-component solution (i.e., eignenvalues greater than 1), which explained 58.5% of the cumulative variance among the items.

Emotional Intelligence Scale items from Schutte et al. (1998):

1 * I know when to speak about my personal problems to others.
2 When I am faced with obstacles, I remember times I faced simliar obstacles and overcame them.
3 I expect that I will do well on most things I try.
4 * Other people find it easy to confide in me.
5 * (r) I find it hard to understand the non-verbal messages of other people.
6 * Some of the major events of my life have led me to re-evaluate what is important and not important.
7 When my mood changes, I see new possibilities.
8 Emotions are one of the things that make my life worth living.
9 * I am aware of my emotions as I experience them.
10 I expect good things to happen.
11 I like to share my emotions with others.
12 When I experience a positive emotion, I know how to make it last.
13 I arrange events others enjoy.
14 * I seek out activities that make me happy.
15 * I am aware of the non-verbal messages I send to others.
16 I present myself in a way that makes a good impression on others.
17 * When I am in a positive mood, solving problems is easy for me.
18 * By looking at their facial expressions, I recognize the emotions people are experiencing.
19 * I know why my emotions change.
20 * When I am in a positive mood, I am able to come up with new ideas.
21 I have control over my emotions.
22 * I easily recognize my emotions as I experience them.
23 * I motivate myself by imagining a good outcome to tasks I take on.
24 * I compliment others when they have done something well.
25 * I am aware of the non-verbal messages other people send.
26 When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
27 When I feel a change in emotions, I tend to come up with new ideas.
28 * (r) When I am faced with a challenge, I give up because I believe I will fail.
29 * I know what other people are feeling just by looking at them.
30 * I help other people feel better when they are down.
31 I use good moods to help myself keep trying in the face of obstacles.
32 * I can tell how people are feeling by listening to the tone of their voice.
33 * (r) It is difficult for me to understand why people feel the way they do.

* Item was included in the final model; (r) item was reverse-coded prior to further analyses

The first component labeled “social awareness”, consisted of eight total items, had an eigenvalue of 6.64 and explained 32.82% of the variance in the model. Internal reliability analyses revealed a Chronbach’s alpha of .88, thus suggesting strong internal consistency among the items. Based on these analyses, the social awareness variable was created using respondents’ mean scores across the eight items.

The second component labeled "self-awareness" consisted of four total items, had an eigenvalue of 2.29 and explained 11.44% of the total variance. Internal reliability analyses revealed a Chronbach's alpha of .78, suggesting strong internal consistency across the four items. Based on these analyses, the self-awareness variable was created by using respondents' mean scores on the four items.

The third component labeled "self-management" consisted of four total items, had an eigenvalue of 1.55 and explained 7.76% of the total variance. Internal reliability analyses revealed a Chronbach's alpha of .67, thus suggesting adequate internal consistency across the four items. Based on these analyses, the self-management variable was created by using respondents' mean scores across the four items.

The fourth component labeled "relationship management" consisted of four total items, had an eigenvalue of 1.28 and explained 6.42% of the total variance. Internal reliability analyses revealed a Chronbach's alpha of .70, suggesting adequate internal consistency across the four items. Based on these analyses, the relationship management variable was created by using respondents' mean scores across the four items.

In order to complete hypothesis testing, respondents' scores on items within the self and relationship management variables were averaged in order to create a variable labeled "Total Management". Respondents' scores on items within the self and social awareness variables were averaged in order to create a variable labeled "Total Awareness". Finally, respondents' scores on all 20 items were averaged in order to create a "Total EQ" variable.

RESULTS

Prior to specific hypothesis testing, zero-order bivariate correlations between the demographic and conceptual variables were examined. Results of these analyses are presented in Table 1. The results of these analyses suggested that the male, female, and age variables were each related to a number of the conceptual variables and that these relationships were statistically significant (see Table 1).

Table 1

Bivariate Intercorrelations Among Select Demographic and Conceptual Variables.

	Left-Brained	Right-Brained	Male	Female	Age	Total Management	Total Awareness	Total EQ
Left-Brained		-.392**	.029	-.015	.205*	-.076	-.22*	-.196*
Right-Brained	-.392**		-.115	.081	.132	.273**	.212**	.269**
Male	.029	-.115		.984**	-.069	-.125	-.23**	-.223*
Female	-.015	.081	.984**		.066	.10	.217*	.203*
Age	-.205*	.132	-.069	.066		-.039	-.085	-.08
Total Management	-.076	.273**	-.125	.10	-.039		.449**	.74**
	-.22*	.212*	-.23**	.217*	-.085	.449**		

Total Awareness							.933**
Total EQ	-.196*	.269**	-.223*	.203*	-.08	.74**	.933**

Note. * p < .05; ** p < .01

Based on this knowledge, the decision was made to use partial correlations controlling for the effects of age and gender in order to evaluate the hypotheses. This would allow researchers to understand the relations between thinking styles and emotional intelligence while controlling for age and gender, which were each statistically significantly related to many of the study variables. The results of the partial correlation analyses are presented in Table 2. Results of each specific hypothesis test are described below.

Hypothesis #1a: Left-brained thinking style will be negatively and significantly related to emotional intelligence awareness.

This hypothesis was supported. After controlling for gender and age, left-brained thinking style and emotional intelligence awareness were negatively related and the relationship was statistically significant (i.e., r = -.244, p < .01).

Hypothesis #1b: Left-brained thinking style will be negatively and significantly related to emotional intelligence management.

This hypothesis was not supported (i.e., r = -.077, ns).

Hypothesis #1c: Left-brained thinking style will be negatively and significantly related to total emotional intelligence.

This hypothesis was supported. After controlling for gender and age, left-brained thinking style and emotional intelligence management were negatively related and the relationship was statistically significant (i.e., r = -.215, p < .05).

Hypothesis #2a: Right-brained thinking style will be significantly and positively related to emotional intelligence awareness.

This hypothesis was supported. After controlling for gender and age, right-brained thinking style and emotional intelligence awareness were positively related and the relationship was statistically significant (i.e., r = .202, p < .05).

Hypothesis #2b: Right-brained thinking style will be significantly and positively related to emotional intelligence management.

This hypothesis was supported. After controlling for gender and age, right-brained thinking style and emotional intelligence management were positively related and the relationship was statistically significant (i.e., r = .254, p < .01).

Hypothesis #2c: Right-brained thinking style will be significantly and positively related to total emotional intelligence.

This hypothesis was supported. After controlling for gender and age, right-brained thinking style and total emotional intelligence were positively related and the relationship was statistically significant (i.e., $r = .256$, $p < .01$). The implications of these results are discussed in the following section.

Table 2

Partial Correlations Between Thinking Style and Emotional Intelligence Variables.

	Total Awareness	Total Management	Total EQ
Left Brained	-.244**	-.077	-.215*
Right Brained	.202*	.254**	.256**

Note. Partial correlations controlling for male, female, and age. * p < .05; ** p < .01; *** p < .001

DISCUSSION

The purpose of this investigation was to examine the relations between thinking style, as measured by the Myers-Briggs Type Indicator test and emotional intelligence. The findings from the paper suggest that consistent with previous research, thinking styles (i.e., right vs. left-brained) are indeed related to emotional intelligence in conceptually expected directions. More specifically, results indicated that left-brained thinking was negatively related to both total awareness and total EQ but was not related to total management. At first glance, these findings would suggest that in this particular sample those individuals who were identified as having a left brain thinking style had some difficulty with their emotional intelligence awareness, but there does not appear to be any deleterious effects of having a left brain thinking style on emotional intelligence management. Thus, these findings may highlight one of a couple of issues. Contrary to the face value of these findings, logically, an individual who has a left brained thinking style that has little emotional intelligence awareness may not realize there is anything to manage. Simply put, do these individuals manage what they are unaware of? Alternatively, in light of the fact that the sample consisted of individuals who were self-identified leaders in their organizations, they may have found ways to compensate for their lack of emotional intelligence awareness along the way.

It remains to be seen, however, whether or not left brained thinking style would be related to emotional intelligence management in a larger sample; future studies should investigate this possibility.

In contrast to left-brained thinking styles, right-brained thinking styles were positively and significantly related to total awareness, total management, and total EQ suggesting that having a right brain thinking style was an asset in both emotional intelligence management and emotional intelligence awareness. In addition, there seems to be a substantial amount of agreement among leadership scholars that emotional intelligence is at a minimum a large

component of leadership effectiveness. As a result, the findings of this study are very important because they suggest that in groups where the leader has a right brain thinking style, the overall management climate will be more participatory than a group with a leader who has a left brain thinking style. The findings of the current study are supported by earlier research performed by Allison, Armstrong, and Hayes (2001). They studied leaders with a 'Cognitive Style' associated with right brain thinking style, as conceptualized in the current study, and found evidence that right brain thinking style leaders are liked and respected more by their followers. They attributed the positive relationship between leader and follower to the leader's ability to be more nurturing. Emotionally intelligent leaders would certainly be more nurturing because they would be more aware of their emotions and the emotions of others and more able to manage those emotional interactions.

Finally, the findings of the current study may not completely account for the narrative circulating in management circles regarding the apparent inability of many technical superstars to be effective and emotionally intelligent leaders. The findings do, however, indicate that those left brained technical superstars may struggle when put into a leadership role in comparison with an individual with a right brain thinking style.

Although some interesting findings have been presented it is also important to discuss the limitations to the current investigation. The respondents were purposefully chosen due to their leadership positions, however, the fact that this was a convenience sample means that the results may not be generalizable to contexts beyond the business organization setting.

The small sample size was also a limitation of the current study. Future studies should examine these concepts utilizing larger samples of leaders, and more importantly, a larger sample size of the varying thinking styles.

Although clear precedent for using the MBTI as a proxy for thinking styles were cited, obviously this method of identification has limitations, particularly given the ex post facto dichotomous coding scheme that was utilized in order to create the thinking style variables. A better approach would be to identify a measure of thinking styles that measures key dimensions of thinking styles on a continuous basis. This would allow for true inferential analyses between thinking styles and emotional intelligence. Future studies should implement such an approach as well as measure possible additional covariates might affect the relationship between thinking styles and emotional intelligence.

CONCLUSION

Although there is agreement among researchers that most everyone can increase their emotional intelligence, not everyone is capable of becoming a highly emotionally intelligent leader of others because they may in fact not be able to develop the full spectrum of skills necessary to do so. As this study has outlined, successful emotionally intelligent leadership is comprised of emotional intelligence awareness and emotional intelligence management skills and may demand a right brain thinking style that is in the minority of society. Obviously, future studies will be needed to adequately address the hypothesized relationships. In addition, the next logical step in this particular research endeavor will be to obtain additional data in order to empirically test the hypothesized relationships with perhaps a more powerful statistical technique. Also, while whole brain thinking style was not included in the current study due to an insufficient sample size, its relationship to the constructs of emotional intelligence should be

empirically examined. The addition of whole brain thinking style to the discussion may prove to further elucidate the concept of emotional intelligence.

In closing, it is important to point out that effective and emotionally intelligent leaders of the future must build and depend more heavily on their own social skills and personal interactions (i.e. right-brain thinking style), in addition to their technical and analytical skills (i.e. left-brain thinking style), to successfully lead people and companies to new levels of business evolution and growth.

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