A Thesis

Submitted to the Faculty

of

Xavier University

in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

by

Robert W. Mumau

May 9, 2013

Approved:

Karl W. Stukenberg, Ph.D., ABPP
Chair, Department of Psychology

Merrill Mullins, Ph.D.
Thesis Chair
Individual Differences in Cultural Intelligence:

Self-Monitoring as a Moderator of the Relationship between Personality and Cultural Intelligence
Thesis Committee

Chair
Morell E. Mullins, Ph.D.
Associate Professor of Psychology

Member
Mark S. Nagy, Ph.D.
Associate Professor of Psychology

Member
Dalia L. Diab, Ph.D.
Assistant Professor of Psychology
Acknowledgements

I would like to thank all the people who helped to support me throughout the duration of this project. The faculty at Xavier University, including Dr. Nicholas Salsman and Dr. Anna Ghee, were very helpful in the initial stages of forming the idea for the project. Dr. Mark Nagy and Dr. Dalia Diab were integral as members of my committee. Dr. Morell Mullins went above and beyond what I expected from my Thesis Chair. I must also recognize my graduate cohort at Xavier University: Daniele Bologna, Leann Caudill, Chris Fromhold, Thomas Geiger, Tara Goodlander, Laura Gormas, and Jamie Small. Finally, I must show gratitude to my parents, Robert and Claudia. Without the help of all these individuals, this project would have never been completed.
Table of Contents

Acknowledgements.................................................................i

Table of Contents...............................................................................ii

List of Tables....................................................................................iii

List of Appendices..............................................................................iv

Abstract.............................................................................................v

Chapter

I. Review of the Literature.................................................................1

II. Rationale and Hypotheses.............................................................14

III. Method..........................................................................................17

IV. Results..........................................................................................22

V. Discussion.......................................................................................25

VI. Summary.......................................................................................33

References...........................................................................................46

Appendices..........................................................................................50
List of Tables

Table                                                                                     Page
1. Descriptive Statistics, Intercorrelations, and Reliabilities of Scales Used........23
2. Hierarchical Regression Results Predicting Overall Scores of CQ.......................24
List of Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Informed Consent</td>
<td>50</td>
</tr>
<tr>
<td>B. References of Measures Used</td>
<td>52</td>
</tr>
<tr>
<td>C. IRB Approval Letter</td>
<td>53</td>
</tr>
</tbody>
</table>
Abstract

This thesis explores the topic of Cultural Intelligence (CQ), which is the capability to function effectively in culturally diverse settings (Earley & Ang, 2003). There are four facets of CQ: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Ang & Van Dyne, 2008). The relationships between CQ, self-monitoring, and personality were examined. Self-monitoring is a theory of expressive control (Snyder, 1974). The Big Five theory of personality was used in this study (Barrick & Mount, 1991). The five personality traits of this theory are extraversion, conscientiousness, agreeableness, emotional stability, and openness to experience. Previous research on CQ suggested examining openness to experience specifically because it was found to be the only personality trait related to all four factors of CQ (Ang et al., 2006). The study used hierarchical regression analysis on 100 participants from Amazon’s Mechanical Turk website. The scales used in this study were the 20 item Cultural Intelligence Scale (Van Dyne et al., 2008), the 18 item Self-Monitoring Scale (Snyder & Gangestad, 1986), and the 50 item scale from the International Personality Item Pool (Goldberg et al., 2006). It was hypothesized that self-monitoring would moderate the relationship between openness to experience and CQ. This hypothesis was not supported. However, there were many statistically significant relationships demonstrated in this study. Self-monitoring was shown to be statistically significantly related to all four factors of CQ. The limitations of the study are discussed. There are also suggestions for future research on CQ.
Chapter I

Review of the Literature

The workplace is changing. As societies become more globalized, organizations need to recognize the importance of understanding the different cultural practices of their employees. Employees from one culture may have different perceptions of their daily experiences at work than employees from another culture. The issue of diversity has been of interest to organizations for a few decades, but there are still many topics that still need a clearer understanding. One construct that has been gaining attention is cultural intelligence. Cultural intelligence (CQ) is the capability to function effectively in culturally diverse settings (Farley & Ang, 2003). CQ can help explain why some employees are better able to function in culturally diverse settings than others. This study examines CQ and the individual differences that can lead to a better understanding of CQ’s effects.

Previous research has demonstrated significant relationships between CQ and individual differences such as personality (Ang, Van Dyne, & Koh, 2006), but it is time to examine these relationships more closely. Individuals who are effective in culturally diverse situations are concerned with how their behaviors are perceived by others. These individuals attempt to control how their behaviors are expressed in order to maximize this perception in a situation characterized by cultural diversity. Such control may be reflective of self-monitoring (Snyder, 1974). Self-monitoring theory is concerned with managing the expression of personal behavior, and may help to clarify the nature of CQ.
CULTURAL INTELLIGENCE

More empirical research must be conducted in order to gain a better understanding of CQ. Personality, self-monitoring, and CQ are all individual differences that are similar to one another, and this study seeks to clarify how these constructs function and how they may interact.

In recent years, organizations have made many attempts to diversify their workforces. Organizations typically deal with diversity in one of two ways, according to the work of Stevens, Plaut, and Sanchez-Burks (2008). The first of these, colorblindness, refers to ignoring cultural differences and instead focusing on individual accomplishments and qualifications. This approach is grounded in the American cultural ideals of equality, assimilation, individualism, and our “melting pot” society. However, evidence suggests that minorities interpret the colorblind approach as exclusionary of their group because it ignores those factors that make them unique or different. The second approach Stevens et al. describe, multiculturalism, addresses the issue by recognizing cultural differences and acknowledging that these cultural differences will benefit the organizations. This approach suggests that it is important for individuals to be able to recognize their cultural differences and move past these differences to work more effectively. In contrast to colorblindness, multiculturalism makes nonminorities feel excluded because they are overlooked because only minority cultures seem to be valued by the organization. As a result, nonminorities may resist multiculturalism diversity initiatives. Stevens et al. (2008) offer an all-inclusive approach that includes both minorities and nonminorities in diversity initiatives. The all-inclusive model (AIM) suggests changing the language of organizational structures and policies to reflect a commitment to diversity. However, simply changing the language of an organization's
mission statement will not necessarily lead to changes in the organization's climate for diversity. Instead, a climate for diversity results from social construction through employee interaction and communication. One way to predict effective employee interaction and communication in a cultural diverse workplace is CQ.

Cultural Intelligence

Schmidt and Hunter (2000) defined general intelligence as the ability to reason correctly with abstract concepts and to solve problems. CQ is a specific form of intelligence focused on an individual's ability to grasp and reason correctly in situations characterized by cultural diversity (Ang & Van Dyne, 2008). Other types of intelligence identified in the literature include practical intelligence (Sternberg et al., 2000) and emotional intelligence (Mayer & Salovey, 1993). The development of CQ was built on an increasing call within the literature for intelligence to go beyond traditional cognitive abilities.

CQ has been described as another complementary form of intelligence that can explain variability in coping with diversity and functioning in new cultural settings (Ang & Van Dyne, 2008). Despite the use of a similar notation for CQ as is used for IQ (the intelligence quotient), it is important to note that CQ does not represent a mathematical quotient. Ang and Van Dyne (2008) also stated that CQ is separate and distinct from other forms of intelligence. Typical measures of cognitive ability do not measure the context-specific nature of CQ and do not measure behavioral or motivational aspects of intelligence. Emotional intelligence differs from CQ because it focuses on the general ability to perceive and manage emotions without consideration of cultural context (Ang et al., 2007). Emotional intelligence does not necessarily translate from one culture to
another. An individual who rates high in emotional intelligence in one culture may not rate the same for another culture. On the other hand, CQ refers to a general set of capabilities that focuses on cross-cultural situations. There is limited research on CQ, with Ang and her colleagues having pioneered research in the field.

Four-Factor Model of Cultural Intelligence

CQ has multiple dimensions based on Sternberg and Detterman’s (1986) framework. This framework states that intelligence involves both mental and behavioral capabilities, and proposed four complementary ways to conceptualize intelligence on an individual level:

(a) Metacognitive intelligence is knowledge and control of cognition (the processes individuals use to acquire and understand knowledge); (b) cognitive intelligence is individual knowledge and knowledge structures; (c) motivational intelligence acknowledges that most cognition is motivated and thus it focuses on magnitude and direction of energy as a locus of intelligence; and (d) behavioral intelligence focuses on individual capabilities at the action level (behavior; p. 4).

The first three dimensions, metacognitive, cognitive, and motivational, are the mental capabilities. The last dimension involves behavioral capabilities. As such, CQ has been examined as a multifactorial and complex construct. It mirrors the previously mentioned theory of intelligence with four facets of CQ: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Ang & Van Dyne, 2008). When transposed onto the Sternberg and Detterman model, metacognitive CQ refers to the mental capacity to acquire and understand cultural knowledge, cognitive CQ refers to general knowledge
and knowledge structures about different cultures, motivational CQ refers to the capacity of an individual to direct energy toward learning about and functioning in culturally diverse settings, and behavioral CQ refers to an individual’s capacity to demonstrate appropriate verbal and nonverbal actions in culturally diverse settings (Ang & Van Dyne, 2008).

**Metacognitive CQ.** Metacognitive CQ is an individual’s level of conscious cultural awareness in situations characterized by cultural diversity. Individuals who rate high in metacognitive CQ question their own cultural assumptions, reflect during cross-cultural interactions, and adjust their cultural knowledge when interacting with individuals from other cultures. These individuals have conscious awareness of cultural practices and cultural norms of different societies before and during interactions (Ang & Van Dyne, 2008). Ang and Van Dyne (2008) illustrated three important reasons metacognitive CQ is a critical component of CQ: First, CQ promoted active thinking about people and situations in cross-cultural interactions; second, CQ initiated active challenges to rigid dependence on culturally bounded thinking and assumptions; third, it drove individuals to adapt and revise their strategies so that they were more culturally appropriate and more likely to achieve desired outcomes in situations characterized by cultural diversity.

**Cognitive CQ.** Cognitive CQ is an individual’s knowledge of the cultural norms, practices, and conventions in different cultures that has been acquired through personal experiences and through education (Ang & Van Dyne, 2008). This cultural knowledge includes knowledge of cultural universals and of cultural differences. The cognitive CQ factor is an important component of CQ, and as Ang and Van Dyne (2008) pointed out,
“Understanding a society’s culture and the components of culture allows individuals to better appreciate the systems that shape and cause specific patterns of social interaction within a culture” (p. 6). Individuals who rate high in cognitive CQ are better able to interact with people from different cultures.

**Motivational CQ.** Motivational CQ is an individual’s desire to direct energy and attention toward learning about and functioning in culturally diverse settings (Ang & Van Dyne, 2008). Individuals who rate high in motivational CQ direct energy and attention toward culturally diverse situations because they are intrinsically motivated to do so, and because they have confidence in their ability to effectively interact with people from a culturally different society (Ang & Van Dyne, 2008). Motivational CQ is an important component of CQ, because it is a source of drive (Ang & Van Dyne, 2008). Motivational CQ activates energy and attention directed toward effectively functioning in cross-cultural settings (Ang & Van Dyne, 2008).

**Behavioral CQ.** Behavioral CQ is an individual’s capability to demonstrate appropriate verbal and nonverbal actions when interacting in situations characterized by cultural diversity (Ang & Van Dyne. 2008). Ang and Van Dyne (2008) added, “Behavioral CQ refers to the extent to which an individual acts appropriately (both verbally and nonverbally) in cross cultural situations” (p. 6). Behavioral CQ is an important component of CQ, because verbal and nonverbal behaviors are the most salient features of social interactions. Consequently, behavioral CQ may be the most critical factor that observers use to assess CQ, because verbal and nonverbal expressions of behavior are especially salient. Individuals who rate high in behavioral CQ are flexible and can adjust their behaviors in culturally diverse settings (Ang & Van Dyne, 2008).
Outcomes of Cultural Intelligence

Research has examined the outcomes of rating high in cultural intelligence. Ang et al. (2007) examined CQ and two outcomes: cultural judgment and decision making (CJDM) and task performance. The study used hierarchical regression analysis to examine the relationships between CQ and the two outcomes employing a sample of 98 international managers from 17 countries participating in an executive development program. The development program emphasized cross-cultural management. Task performance was measured utilizing an extended problem solving simulation with pairs of executives. Peers rated each other on their task performance with three behavior items. CJDM was assessed in a manner that involved managers working individually to complete a case involving a cross-cultural challenge faced by an U.S executive managing a South Korean subsidiary. The results of the study demonstrated that CQ accounted for significant incremental variance in task performance over and above the effects of gender, cognitive ability, social desirability, and experience interacting with people from other cultures in foreign professionals.

The study also examined CJDM and task performance specifically with the four factors of CQ. Metacognitive CQ significantly predicted CJDM ($\beta = .30, p < .05$). Cognitive CQ also significantly predicted CJDM ($\beta = .37, p < .05$). Metacognitive CQ significantly predicted task performance ($\beta = .30, p < .05$), as did behavioral CQ ($\beta = .47, p < .001$; Ang et al., 2007).

Cultural Intelligence as an Individual Difference

The literature on CQ has viewed it as an individual difference, much like other intelligences. Since CQ has been defined in relation to intelligence, it can similarly be
conceptualized as an ability or capability. This is opposed to other individual differences such as personality or interests (Ang & Van Dyne, 2008). Ang and Van Dyne noted that individual differences vary with respect to specificity and stability. CQ is more specific than other individual differences such as general mental ability and personality, because it focuses on specific culturally relevant capabilities. However, it is important to note that although CQ is a specific individual difference, it is not specific to any single culture. CQ refers to culturally diverse settings and not to a single set of interactions. It differs in that respect from personality characteristics, which are stable across time and situations. As Ang and Van Dyne (2008) pointed out, “since CQ is malleable and can be enhanced through experience, education, and training, it is a state-like individual difference” (p. 8). Research is limited on the relationships between individual differences and CQ.

**Personality**

The Five-Factor model (FFM) or Big Five taxonomy of personality is one of the most widely accepted and researched models in psychology (Barrick & Mount, 1991). The labels of the five factors and the traits associated with each factor are as follows:

extraversion (sociable, assertive), emotional stability (calm, well adjusted),

conscientiousness (dependable, responsible), agreeableness (cooperative, tolerant), and openness to experience (imaginative, creative; Barrick, Parks, & Mount, 2005; Morrison, 1997). Many studies have been conducted examining the relationship between personality and job performance (Barrick, Mount, & Judge, 2001; Griffin & Hesketh, 2004; Tett, Jackson, and Rothstein, 1991: Salgado, 1997). Meta-analysis has demonstrated that conscientiousness consistently predicts job performance across occupations (Barrick et al., 2001). Emotional stability has also been shown to predict job
performance across occupations, though less consistently (Barrick et al., 2001). The relationships between the other three personality characteristics and job performance are mixed. Extraversion and openness to experience were shown to be predictive of training performance, and agreeableness was shown to be predictive of teamwork (Barrick et al., 2001). Extraversion has also been shown to be a useful predictor of job performance in managerial and police occupations (Barrick et al., 2001). In a similar meta-analysis, Tett et al. (1991) found agreeableness to be the best predictor of job performance. Surprisingly, extraversion and conscientiousness were the least predictive of job performance. It should be noted that the Tett et al. (1991) meta-analysis was not based on as many studies.

**Relationships between Big Five Personality Characteristics and Cultural Intelligence.** CQ has been conceptualized as an individual difference that is separate and distinct from personality. However, there are relationships between personality constructs and the four-factor model of CQ. Ang and Van Dyne (2008) stated that personality influences how individuals choose behaviors and experiences and that some personality characteristics should be related to CQ. Ang et al. (2006) demonstrated discriminant validity of the four dimensions of CQ compared to the Big Five personality traits (extraversion, conscientiousness, agreeableness, emotional stability, and openness to experience) assessed using the Personal Characteristics Inventory (Mount & Barrick, 1995). CQ was measured using the 20-item Cultural Intelligence Scale (Van Dyne, Ang, & Koh, 2008). Confirmatory factor analysis (CFA) showed that the data in this study were a good fit for the four-factor model of CQ compared to other theoretically possible models. The analysis also assessed the distinctiveness of the factors of CQ relative to the
five facets of personality. The data showed that a nine-factor model was a good fit for the data compared to other theoretically possible models.

Ang et al. (2006) also showed meaningful significant relationships between aspects of CQ and personality characteristics. Controlling for demographic variables (age, gender, and experience interacting with people from diverse cultures), conscientiousness was significantly related to metacognitive CQ ($\beta = .22, p < .001$), agreeableness was significantly related to behavioral CQ ($\beta = .17, p < .01$), extraversion was found to be significantly related to cognitive CQ ($\beta = .18, p < .01$), behavioral CQ ($\beta = .15, p < .05$), and motivational CQ ($\beta = .16, p < .01$), and openness to experience was significantly related to metacognitive CQ ($\beta = .28, p < .001$), cognitive CQ ($\beta = .17, p < .01$), motivational CQ ($\beta = .25, p < .001$), and behavioral CQ ($\beta = .13, p < .05$). The study also demonstrated a significant negative relationship between emotional stability and behavioral CQ ($\beta = -.18, p < .01$; Ang et al., 2006).

**Self-Monitoring**

To date, there is no empirical study that has explored the link between CQ and self-monitoring. Snyder (1974) identified self-monitoring as a theory of expressive control; conveying internal states through facial expressions, hand gestures, body posture, voice texture, and other verbal and nonverbal cues in the absence of the internal states. Self-monitoring theory is concerned with the antecedents and consequences of variation in the extent to which individuals strategically cultivate public appearances (Gangestad & Snyder, 2000). In other words, the theory of self-monitoring involves the differences in the extent to which individuals create and value social images. According to the theory, individuals have meaningful differences in the extent to which they can and do exercise
expressive control. Some individuals are concerned with the social appropriateness of their expressive presentation of themselves. These individuals monitor their expressive behavior and regulate their presentation of themselves for the sake of desired public appearances. The behaviors of these high self-monitors may be highly responsive to interpersonal and social cues of situationally appropriate performance. On the other hand, some individuals do not actively engage in expressive control. These individuals do not possess the same concern for the situational appropriateness of their expressive behaviors. The behaviors of these low self-monitors reflect their own inner attitudes, emotions, and dispositions, and these behaviors are not controlled by deliberate attempts to appear situationally appropriate (Gangestad & Snyder, 2000).

Outcomes of Self-Monitoring

Self-monitoring is especially important in organizational settings. Day, Schleicher, Unkless, and Hiller (2002) examined the potential of self-monitoring for explaining and predicting individual attitudes, behaviors, and performance in organizations. The results of their meta-analysis suggested that self-monitoring significantly affected work-related outcomes associated with job performance and advancement, ability, and leadership behavior and emergence. High self-monitors are more involved in their jobs, perform better on the job, are more likely to become a leader at work, receive better performance appraisals, and receive more promotions than low self-monitors. However, the results are not all positive. High self-monitors have been shown to have lower organizational commitment and higher role stress at work compared to low self-monitors (Day et al., 2002). Given these mixed findings, further research on self-monitoring must be conducted.
Relationships between Big Five Personality Characteristics and Self-Monitoring. Morrison (1997) used a sample of 307 franchise business owners/managers to demonstrate significant bivariate relationships between self-monitoring and personality. Personality was assessed using the Personal Characteristics Inventory (Mount & Barrick, 1995) and self-monitoring was assessed using the 18-item Self-Monitoring Scale (Gangestad & Snyder, 2000). Extraversion ($r = .31, p < .001$) was significantly positively related to self-monitoring. Individuals who score high on measures of extraversion and self-monitoring tend to be gregarious and seek out social stimulation. The difference between extraversion and self-monitoring is that individuals with higher scores on extraversion tend to present the same gregarious image in all situations, while those with higher scores on self-monitoring use their social skills and situational cues to adopt different roles in different situations. Openness to experience ($r = .21, p < .001$) was also significantly positively to self-monitoring. Characteristics such as aesthetic sensitivity, willingness to entertain novel ideas, intellect, creativity, emotional responsiveness, and a preference for variety that have been associated with openness to experience, are similar to the skills necessary for impression management (Morrison, 1997).

Much research has been conducted on the relationships between personality and performance (Barrick & Mount, 1991; Barrick et al., 2001). Research has since begun to examine what conditions facilitate or constrain the influence of personality traits on performance. Barrick et al. (2005) examined self-monitoring as a moderator of the relationships between personality traits and interpersonal performance. The study utilized a sample of 102 employed Executive MBA students. Personality was assessed using the
Personal Characteristics Inventory (PCI) (Mount & Barrick, 2002) and self-monitoring was assessed using the 18-item Self-Monitoring Scale (Gangestad & Snyder, 2000). Interpersonal performance was measured with an item each to assess interpersonal skills, cooperation, communication, and customer service orientation. Results from this study revealed that self-monitoring significantly moderated the relationship between extraversion and interpersonal performance, emotional stability and interpersonal performance, and openness to experience and interpersonal performance.

Conclusion

Although organizations have been attempting to reap the benefits of diversity, a closer examination of factors relating to successful communication among people from differing backgrounds is needed. In order for organizations to gain the most benefit from these interactions, it may be the case that their employees must possess CQ. Self-monitoring theory may shed additional light on the importance of CQ. Openness to experience, the Big 5 personality trait that has been shown to be related to all four factors of CQ (Ang et al., 2006), must be examined more closely. As such, empirical research on the relationships between self-monitoring, openness to experience, and CQ must be conducted to begin to fully understand why certain individuals are better suited than others in situations characterized by cultural diversity.
Chapter II

Rationale and Hypotheses

Cultural Intelligence

Cultural intelligence (CQ) is the capability to function effectively in culturally diverse settings (Earley & Ang, 2003). There are four facets of CQ: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Ang & Van Dyne, 2008). Metacognitive CQ refers to the mental capacity to acquire and understand cultural knowledge, cognitive CQ refers to general knowledge and knowledge structures about different cultures, motivational CQ refers to the capacity of an individual to direct energy toward learning about and functioning in culturally diverse settings, and behavioral CQ refers to an individual's capacity to demonstrate appropriate verbal and nonverbal actions in culturally diverse settings (Ang & Van Dyne, 2008).

CQ is a state-like individual difference that can change over time depending on training and experience. Although personality is more stable over time, it is important to examine the relationships between personality factors and the four factors of CQ. Research has shown that there were significant relationships between aspects of CQ and personality characteristics. Research has also shown that CQ has been linked with performance.
CULTURAL INTELLIGENCE

Self-Monitoring

Self-monitoring is defined as the extent to which individuals monitor, adjust and control their behavior based on how it is perceived by others (Synder, 1974). High self-monitors are situationally guided. These individuals possess a strong desire to project a positive image of themselves in order to impress others. By contrast, low self-monitors are dispositionally guided. These individuals emphasize being true to their own personal core values, and strive to act in accordance to these values. The literature has examined the relationships between personality and self-monitoring. The results of studies investigating the consequences of self-monitoring at work have been mixed. High self-monitors have not only been shown to be associated with better job performance and leadership emergence, but high self-monitors have also been shown to have lower organizational commitment (Day et al., 2002).

Hypotheses

There has yet to be a study that has investigated the relationships between CQ and self-monitoring. Both constructs have been shown to be significantly related to personality characteristics, such as openness to experience. Self-monitoring and CQ have also been linked with performance. Individuals who rate high in self-monitoring are more effective in cross-cultural situations because they have an awareness of their own abilities and can adjust their thinking and behavior in an interaction characterized by cultural diversity. Therefore, it is hypothesized that CQ will be related to self-monitoring.

Hypothesis 1: Self-monitoring will be significantly positively correlated with overall scores of CQ.
Openness to experience has been shown to be significantly related to all four facets of CQ (Ang et al., 2006). Openness to experience has also been shown to be significantly related to self-monitoring (Morrison, 1997). Both of these relationships are expected to be replicated. Therefore, it is hypothesized that openness to experience will be related to all four facets of CQ, and openness to experience will be related to self-monitoring.

_Hypothesis 2:_ Openness to experience will be significantly positively correlated with metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ.

_Hypothesis 3:_ Openness to experience will be significantly positively correlated with self-monitoring.

High self-monitors are highly motivated to adjust their behavior to look good in the eyes of others. Because this motivation is so strong, it outweighs the motivational processes of personality (Barrick et al., 2005). Therefore, the relationship between openness to experience and CQ is hypothesized to be moderated by an individual’s level of self-monitoring.

_Hypothesis 4:_ Self-monitoring will moderate the relationship between openness to experience and CQ, such that when self-monitoring is high, openness to experience will not be related to CQ, whereas when self-monitoring is low, openness to experience will be positively related to CQ.
Chapter III

Method

Participants

This study recruited participants through a posting on Amazon’s Mechanical Turk (MTurk) website. This website allows willing participants to complete human intelligence tasks (HITs), such as the surveys used in this study. Participants were offered $0.75 for completing the surveys. According to Cohen (1991), 85 participants were needed to have 0.8 power to detect a medium effect (.3) with an alpha of .05 using correlational analysis. The sample consisted of 100 participants. There were 50 males and 50 females. The average age of participants was 36.5 years ($SD = 13.39$).

Measures

Cultural Intelligence. Although the construct of CQ is a relatively new one, a scale has been developed to measure it. Researchers interviewed business executives with extensive global work experience and relied on existing literature on intelligence and cross-cultural competencies to develop the CQS (Van Dyne et al., 2008). The CQS is a 20-item scale that contains four items that assess metacognitive CQ, six items that assess cognitive CQ, five items that assess motivational CQ, and five items that assess behavioral CQ. An example of a metacognitive CQ item is, “I check the accuracy of my cultural knowledge as I interact with people from different cultures.” An example of a cognitive CQ item is, “I know the cultural values and religious beliefs of other cultures.”
An example of a motivational CQ item is, "I enjoy interacting with people from different cultures." An example behavioral CQ items is, "I change my nonverbal behavior when a cross-cultural situation requires it." (Van Dyne et al., 2008, p. 20). The CQS is scored on a 7-point Likert-type scale from strongly disagree (1) to strongly agree (7). The average score for each of the four subscales is used in the analysis. Internal consistency reliability estimates in this study ranged from .87 to .92 for the four subscales (see Table 1). Previous research on CQ has only focused on the four factors in the analysis. This study will also use overall scores of CQ in the analyses. The overall CQS had an internal consistency of $\alpha = .95$ for this dataset.

A series of studies by Van Dyne et al. (2008) were conducted to validate the CQS. The four-factor model was assessed using CFA in one of the studies by Van Dyne et al. (2008). The four-factor model of CQ was demonstrated to be a better fit than other theoretically possible models of CQ in the CFA. Thus, the scale reflected the four-factor model of CQ. Research has demonstrated that the CQS is stable across samples, across times, and across countries. In order to measure the generalizability of the CQS across samples, a study by Van Dyne et al. (2008) utilized a similar, nonoverlapping sample. Results from this study extended the results from the previous study and confirmed the four-factor model. A subset of this sample completed the CQS four months later. As previously noted, CQ can be enhanced through experience, education, and training (Ang & Van Dyne, 2008). Therefore, scores on the CQS taken again four months later are anticipated to change over time, depending on experience or training. Results from this study show that the CQS is stable across different times. The CQS was shown to be stable across countries in another study by Van Dyne et al. (2008) that utilized a sample
of Midwestern U.S. undergraduates and a sample of undergraduates from Singapore. Results from this study extended the results from the previous studies. In order to assess the generalizability of the CQS across methods, an observer version of the CQS was developed. Items were changed to reflect observer ratings of CQ such that, “This person checks the accuracy of his/her cultural knowledge as he/she interacts with people from different cultures” (Van Dyne et al., 2008, p. 27). A study designed to measure the generalizability of the CQS across methods used a sample of MBA students. Participants completed the self-report version, and participants completed the peer-report version on one randomly assigned peer from their MBA team. Peer-reported scores of CQ predicted self-report scores of CQ and self-report scores of CQ predicted peer-reported scores of CQ. Thus, the CQS is stable across methods.

Lastly, the CQS has been shown to have discriminant validity compared to cognitive ability, emotional intelligence, and CJDM (Van Dyne, et al., 2008). Discriminant validity was measured using CFA and the results supported the distinctiveness of the four-factors of CQ, cognitive ability, emotional intelligence, and CJDM. The incremental validity of CQ over and above CJDM was tested using hierarchal regression. Control variables (sex, age, and country) were entered in step one, cognitive ability and emotional intelligence were entered in step two, and the four-factors of CQ were entered in step three. Results from the study by Van Dyne et al. (2008) demonstrated that metacognitive and cognitive CQ explained an additional four percent of the variance in CJDM.

**Self-Monitoring.** Self-monitoring was assessed using the scale developed by Snyder and Gangestad (1986). Originally constructed as a 25-item assessment, the
revised version contains 18 items and is scored on a true-false format. Similar to the research conducted by Barrick et al. (2005), this study scored the self-monitoring scale on a 5-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (5). Items include, “In different situations and with different people, I often act like very different persons” and “I have trouble changing my behavior to suit different people and different situations” (reverse scored; Snyder & Gangestad, 1986, p. 137). Barrick et al. (2005) reported a coefficient alpha of .85 for the scale. In a meta-analysis, Day et al. (2002) noted a similar reliability estimate (α = .77) and added that this was better than then dichotomous version, providing further justification for using the 5-point response scale. The reliability estimate in this dataset was α = .82 for the Self-Monitoring Scale. The authors also provided evidence for the construct validity of the self-monitoring scale by showing that self-monitoring was significantly related to work related outcomes such as job performance, leadership behavior, and leadership emergence.

**Personality.** Personality was assessed using the 50 item scale from the International Personality Item Pool (IPIP: Goldberg et al., 2006). Internal consistency estimates range from .79 to .87 for the five factors. Internal consistency estimates ranged from .78 to .92 in this study (see Table 1). The IPIP is scored on a 5-point Likert-type scale from *very inaccurate* (1) to *very accurate* (5).

**Demographics.** In addition to the self-report survey responses on CQ, personality, and self-monitoring, participants were also asked to provide some basic demographic information. Self-report data on age and gender was collected from participants so that the possible effects of these demographic variables on CQ could be controlled for in the analysis. This is to replicate the procedure used by Ang et al., (2006).
The procedure is replicated because the study involves individual differences related to CQ, and these demographic variables may influence CQ. Participants were asked for their age in years. Participants were also asked to identify their gender, either male or female. Other demographic items asked participants to identify their nationality, race or ethnicity, and country of residence.

Procedure

Before the study was conducted, approval from the Xavier University IRB was obtained. The study did not utilize any form of deception, and required that participants complete three surveys, one survey that measures CQ, one survey that measures personality, and one survey that measures self-monitoring. There were also four quality check items randomly dispersed throughout the surveys. These items were used to ensure participants were paying attention. If a participant did not pass the quality check items, the participant was not compensated, and their responses were removed from the dataset. An example quality check items was: “Please choose ‘Strongly Disagree’ for this item.” All of the guidelines set forth by the IRB, including informed consent procedures and the safe storage of data, were strictly followed. The informed consent form is listed as Appendix A. A list of the references to the measures used in the study is included as Appendix B. The IRB approval letter is included as Appendix C. Once approval was granted, a link for the survey was made available on the MTurk website. The survey operated via SurveyGizmo.com and took approximately 30 minutes to complete.
Chapter IV

Results

Table 1 reports the descriptive statistics, correlations, and reliabilities. The first hypothesis in this study predicted that self-monitoring would be significantly positively correlated with overall scores of CQ. The results of this study supported this hypothesis. Self-monitoring was related to overall scores of CQ ($r(98) = .43, p < .01$). The second hypothesis predicted that openness to experience would be significantly positively correlated with metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ. The results of this study supported this hypothesis. Openness to experience was related to metacognitive CQ ($r(98) = .33, p < .01$), cognitive CQ ($r(98) = .27, p < .01$), motivational CQ ($r(98) = .28, p < .01$), and behavioral CQ ($r(98) = .39, p < .01$). The third hypothesis predicted that openness to experience would be significantly positively correlated with self-monitoring. The results of this study supported this hypothesis. Openness to experience was related to self-monitoring ($r(98) = .41, p < .01$). The fourth hypothesis predicted the moderating effect of self-monitoring on the relationship between openness and CQ. The results of this study did not support this hypothesis. Table 2 reports the hierarchical regression results predicting overall scores of CQ. The interaction between self-monitoring and openness to experience in prediction of overall scores of CQ was not significant ($\Delta R^2 = .004, p = .46$).
Table 1

Descriptive Statistics, Intercorrelations, and Reliabilities of Scales Utilized

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall CQ</td>
<td>5.15</td>
<td>1.19</td>
<td>(.95)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2. Self-Monitoring</td>
<td>2.87</td>
<td>.58</td>
<td>.43**</td>
<td>(.82)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3. Extraversion</td>
<td>3.04</td>
<td>.87</td>
<td>.38**</td>
<td>.65**</td>
<td>(.89)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4. Conscientiousness</td>
<td>3.64</td>
<td>.69</td>
<td>.25**</td>
<td>.46**</td>
<td>.32**</td>
<td>(.82)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5. Agreeableness</td>
<td>3.83</td>
<td>.65</td>
<td>.16**</td>
<td>.30**</td>
<td>.38**</td>
<td>(.86)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6. Emotional Stability</td>
<td>3.51</td>
<td>.92</td>
<td>.11**</td>
<td>.28**</td>
<td>.31**</td>
<td>(.82)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>7. Openness to Experience</td>
<td>3.32</td>
<td>.80</td>
<td>.37**</td>
<td>.41**</td>
<td>.24**</td>
<td>.34**</td>
<td>.01</td>
<td>(.81)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8. Metacognitive CQ</td>
<td>5.15</td>
<td>1.16</td>
<td>.36**</td>
<td>.35**</td>
<td>.33**</td>
<td>.28**</td>
<td>.01</td>
<td>.33**</td>
<td>(.87)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9. Cognitive CQ</td>
<td>2.63</td>
<td>1.58</td>
<td>.27**</td>
<td>.22**</td>
<td>.18**</td>
<td>.39**</td>
<td>.22</td>
<td>.02**</td>
<td>.35**</td>
<td>(.82)</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>10. Motivational CQ</td>
<td>4.81</td>
<td>1.18</td>
<td>.30**</td>
<td>.32**</td>
<td>.23**</td>
<td>.27**</td>
<td>.04</td>
<td>.28**</td>
<td>.82**</td>
<td>.5**</td>
<td>(.85)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>11. Behavioral CQ</td>
<td>2.81</td>
<td>1.29</td>
<td>.37**</td>
<td>.39**</td>
<td>.32**</td>
<td>.40**</td>
<td>.03</td>
<td>.39**</td>
<td>.71**</td>
<td>.55**</td>
<td>.8**</td>
<td>(.91)</td>
<td>---</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; values in parentheses along the diagonal are Cronbach's Alpha reliability estimates; n = 100
Table 2: Hierarchical Regression Results Predicting Overall Scores of CQ

<table>
<thead>
<tr>
<th></th>
<th>ΔR²</th>
<th>df</th>
<th>F</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>.229</td>
<td>2.97</td>
<td>14.42</td>
<td></td>
</tr>
<tr>
<td>Openness to Experience</td>
<td></td>
<td></td>
<td></td>
<td>.24</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td></td>
<td></td>
<td></td>
<td>.33*</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>.004</td>
<td>1.96</td>
<td>.540</td>
<td></td>
</tr>
</tbody>
</table>

**Interaction Term** | .069 |

*Note: * = \( p < .01 \); Openness to Experience and Self-Monitoring have been centered by subtracting the mean from each score. The Interaction Term is the product of the centered variables.
Chapter V

Discussion

Cultural Intelligence

Surprisingly, overall scores of CQ were significantly positively correlated with all of the personality variables except emotional stability. Emotional stability had weak correlations with overall scores of CQ and the four facets of CQ ranging from $r = -0.01$ to $r = 0.04$. These results differ from previous research on personality correlates of CQ. As previously noted, other researchers found a significant negative relationship between emotional stability and behavioral CQ (Ang et al., 2006). Those authors suggested that the even-tempered nature of those high on emotional stability prevents appropriate displays of verbal and nonverbal behavioral CQ. The results of this study suggest that emotional stability is unrelated to CQ.

Another surprising result of this study was that extraversion, agreeableness, and openness to experience were all significantly positively correlated with all four factors of CQ. It was expected that this would be the case for openness to experience, but not extraversion and agreeableness. According to Ang et al. (2006), individuals who score high on measures of extraversion are more likely to interact with other cultures because they are sociable and outgoing. In the process of interacting with other cultures, they may gain a greater understanding of that culture. A better understanding of a different culture would increase their CQ. Agreeableness was another trait that had a surprising link with
all four facets of CQ. Ang et al. (2006) argued that agreeableness should only relate to behavioral CQ. Their reasoning was agreeableness focuses primarily on behavioral skills and social interactions. The results of this study suggest that there is more than just a behavioral aspect of agreeableness in terms of CQ. Individuals who score high on measures of agreeableness are tolerant of other people and other cultures. This tolerance allows them to function effectively in culturally diverse situations. Finally, although statistically significant, conscientiousness was not as strongly correlated with overall scores on CQ. This is of particular importance because of the broad view that conscientiousness predicts job performance across occupations (Barrick et al., 2001). One possible implication of this study is that for expatriate or overseas assignments, being friendly, outgoing, and imaginative may be more important than being reliable and dependable.

**Contributions**

The results of this study provided more evidence for the validity of the CQS. A principal components analysis with varimax rotation demonstrated a four-factor solution for the CQS, with all but one item loading on the appropriate factors. This is important because it provides more data on a relatively new construct. As more and more studies on CQ are conducted, it is essential that the scale that is used to measure CQ continues to be psychometrically evaluated. This study also added strength to the previous finding by Ang et al. (2006) that openness to experience was significantly related to all four facets of CQ. Contrary to their findings, both extraversion and agreeableness were shown to be significantly related to all four facets of CQ. Another contribution was the inclusion of an overall CQ score. Previous research on CQ has only focused on the individual subscales
of the CQS (Ang et al., 2006). This study examined how overall scores of CQ were related to personality and self-monitoring in addition to how the individual subscales were related to personality and self-monitoring. The overall measure of CQ should provide organizations with a tool to use in the selection of the best employees for expatriate and overseas assignments.

The primary focus of this study was to examine the relationship between CQ, self-monitoring and openness to experience. The hypothesis that self-monitoring would moderate the relationship between CQ and openness to experience was not supported. However, the results of this study added to the understanding of both CQ and self-monitoring. The strong positive correlation between CQ and self-monitoring suggests that an individual’s ability to monitor their expressive behavior is related to an individual’s ability to function more effectively in situations characterized by cultural diversity. In addition to the strong positive correlation between self-monitoring and overall scores of CQ, self-monitoring was significantly correlated with all four facets of CQ. This finding was not hypothesized, but it suggests that there is a relationship between the mental, behavioral, and motivational capabilities of CQ, and an individual’s ability to self-monitor expressive behavior. The practical implications of studies on CQ have already begun to take place. Currently, there is a Cultural Intelligence Center that offers online tools for assessing CQ, provides training and coaching for improving CQ, and certifies individuals to assess and teach CQ. The Cultural Intelligence Center has modified the names of the four facets of CQ. Cognitive CQ is known as CQ Knowledge, Metacognitive CQ is known as CQ Strategy, Motivational CQ is known as CQ Drive, and Behavioral CQ is known as CQ Action (Livermore & Van Dyne, 2005). It is not clear
why the Cultural Intelligence Center has modified the facets, but it seems that these labels are easier to understand for individuals who do not have formal education in psychology.

Another practical implication of this study surrounds the selection process. Global organizations need to select employees who are best suited to deal with the obstacles of a culturally diverse workplace. Similarly, if an organization has a need to send an employee on an overseas or expatriate assignment, it is crucial to select an individual who can successfully manage a situation characterized by cultural diversity. Utilization of the CQS can accomplish both of these tasks. Individuals who score high on the overall measure of CQ should be able to perform well in a global organization. Selecting individuals who score high on the overall measure of CQ for overseas or expatriate assignments should be a top priority for all organizations.

**Limitations and Future Research Directions**

All of the surveys in this study utilized self-report data. It was difficult to control for any faking on the CQS, the personality assessment, or the Self-Monitoring scale. However, the motivation to fake is likely very low, because the stakes for the study did not involve the kinds of real-world outcomes (e.g., obtaining a job) that would necessitate faking. Obtaining payment for participation was not a function of any particular response pattern, other than correct responding to the quality check questions, so it is unlikely that systematic faking occurred. Another limitation was the lack of causal inferences that can be made using correlational analysis. The study used survey data and did not have any experimental manipulations of the variables. Therefore, an assessment of causality between self-monitoring and CQ could not be examined using this type of methodology.
Future research on the interaction between CQ and self-monitoring should focus on some measure of performance. Previous research focused on cultural judgment and decision making, but other measures of performance should be examined. One specific conceptualization of job performance that could be examined with relation to CQ is adaptive performance. Global organizations require employees to be increasingly versatile, adaptable, and tolerant of uncertainty when they interact with individuals from other cultures (Pulakos, Arad, Donovan, & Plamondon, 2000). Examining the link between CQ and adaptive performance would be a logical next step in this line of research. The literature on CQ could also benefit from the construction of theoretical models. For example, a theoretical model that links self-monitoring to performance could be mediated by one or more of the four facets of CQ. The incorporation of personality variables and adaptive performance within this theoretical model would also be necessary to gain a greater understanding of CQ.

**Self-Monitoring.** The results of a principal components analysis with a varimax rotation on the Self-Monitoring Scale added to the main controversy surrounding this construct. This analysis indicated a five-factor structure underlying the measure. Gangestad and Snyder (2000) offer a three-factor solution as the most common. These factors have been interpreted as Acting, Extraversion, and Other-Directedness. In a critique of the Self-Monitoring Scale, Briggs and Cheek (1988) argued that the revised 18-item measure should not be interpreted as a measure expressive control. Instead, they claimed that the scale misidentifies self-monitoring as extraversion.

**Mechanical Turk.** Traditional methods for data collection are often based on the utilization of college students. The obvious limitation of a sample of college students is
that these individuals may not be representative of the population. Instead of using traditional data collection methods, the researcher in this study decided to recruit participants through a posting Amazon’s Mechanical Turk (MTurk) website. This method of data collection had both advantages and disadvantages. As previously noted, the average age of participants was 36.5 years, more than ten years older than a typical college student. The study was open to participants globally. Instead only collecting data from participants from the United States, participants from places such as India, Great Britain, Pakistan, Serbia, and Russia completed surveys. This is especially important in a study that focuses on CQ and issues related to diversity. A culturally diverse sample should provide a more accurate examination of CQ. The biggest advantage of collecting data through MTurk was the time it saved. Traditional data collection methods may take weeks or months. MTurk reduced that time to a few hours.

There are some disadvantages when using MTurk to collect data for a psychological study, however. Amazon charges a ten percent fee for using this service. For every participant paid $.75, Amazon charged the researchers $.075. Another concern was if participants would give their full attention for the duration of the study. In an attempt to ensure participants were paying attention, quality check items were added to each survey. For example, one of items simply asked participants to, “Please choose ‘Strongly agree’ for this item.” There were four quality check items throughout the three surveys. If participants did not pass the quality check items, they were not compensated, and their answers were removed from the dataset. Roughly thirty percent of participants failed the quality check items. This leads to the conclusion that these individuals were haphazardly clicking their responses instead of reading and answering the questions. Sure
enough, the responses of the participants who failed to pass the quality check items reflected a lack of attention. One participant actually answered “Strongly agree” and “Very accurate” for every single item. Another individual also employed this strategy, but managed to pay attention long enough to pass the quality check items. This participant was compensated because he did pass the quality checks, but the data was removed before any analysis was conducted. In a closer examination of the individuals who did not pass the quality check items, a particular demographic seemed to emerge. These participants were mostly male, in their mid-twenties, and from India. The researchers offer no speculation on why this might be, though it is clear from a quick search of the internet that a number of communities have sprung up around MTurk and the identification of good “HITs,” and that many participants are more interested in maximizing their per-hour return than they are in the quality of the data they provide.

Conclusions

In an increasingly globalized economy, products and services may be created in one country, but sold in hundreds of different countries. As this trend continues, organizations need to rely on individuals with different cultural backgrounds and from different parts of the world. These individuals will need to be effective and productive when working in culturally diverse settings. Triandis (2006) stated that it requires extensive training to produce a culturally intelligent individual. Extensive training can be expensive and time consuming. If organizations plan to make this commitment to their employees, they should ensure that they select the best possible individuals for cultural intelligence training. Individuals who are successfully able to self-monitor their behaviors should be excellent candidates. Similarly, individuals who rate high on measures of
openness to experience should also be successful. Once it has been determined that an individual is culturally intelligent, he or she should be equipped with the tools necessary to deal with the challenges of an expatriate or overseas assignment.
Chapter VI

Summary

Cultural intelligence (CQ) is the capability to function effectively in culturally diverse settings (Earley & Ang, 2003). CQ can help explain why some employees are better able to function in culturally diverse settings than others. This study examines CQ and the individual differences that can lead to a better understanding of CQ’s effects.

Previous research has demonstrated significant relationships between CQ and individual differences such as personality (Ang, Van Dyne, & Koh, 2006), but it is time to examine these relationships more closely. Individuals who are effective in culturally diverse situations are concerned with how their behaviors are perceived by others. These individuals attempt to control how their behaviors are expressed in order to maximize this perception in a situation characterized by cultural diversity. Such control may be reflective of self-monitoring (Snyder, 1974). Self-monitoring theory is concerned with managing the expression of personal behavior, and may help to clarify the nature of CQ. More empirical research must be conducted in order to gain a better understanding of CQ. Personality, self-monitoring, and CQ are all individual differences that are similar to one another, and this study seeks to clarify how these constructs function and how they may interact.

In recent years, organizations have made many attempts to diversify their workforces. Organizations typically deal with diversity in one of two ways, according to the work of Stevens, Plaut, and Sanchez-Burks (2008). The first of these, colorblindness,
CULTURAL INTELLIGENCE

refers to ignoring cultural differences and instead focusing on individual accomplishments and qualifications. This approach is grounded in the American cultural ideals of equality, assimilation, individualism and our “melting pot” society. However, evidence suggests that minorities interpret the colorblind approach as exclusionary of their group because it ignores those factors that make them unique or different. The second approach Stevens et al. describe, multiculturalism, addresses the issue by recognizing cultural differences and acknowledging that these cultural differences will benefit the organizations. This approach suggests that it is important for individuals to be able to recognize their cultural differences and move past these differences to work more effectively. In contrast to colorblindness, multiculturalism makes nonminorities feel excluded because they are overlooked because only minority cultures seem to be valued by the organization. As a result, nonminorities may resist multiculturalism diversity initiatives. Stevens et al. (2008) offer an all-inclusive approach that includes both minorities and nonminorities in diversity initiatives. The all-inclusive model (AIM) suggests changing the language of organizational structures and policies to reflect a commitment to diversity. However, simply changing the language of an organization’s mission statement will not necessarily lead to changes in the organization’s climate for diversity. Instead, a climate for diversity results from social construction through employee interaction and communication. One way to predict effective employee interaction and communication in a cultural diverse workplace is CQ.

Four-Factor Model of Cultural Intelligence

CQ has multiple dimensions based on Sternberg and Detterman’s (1986) framework. This framework states that intelligence involves both mental and behavioral
capabilities, and proposed four complementary ways to conceptualize intelligence on an individual level. The first three dimensions, metacognitive, cognitive, and motivational, are the mental capabilities. The last dimension involves behavioral capabilities. As such, CQ has been examined as a multifactorial and complex construct. It mirrors this theory of intelligence with four facets of CQ: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Ang & Van Dyne, 2008). When transposed onto the Sternberg model, metacognitive CQ refers to the mental capacity to acquire and understand cultural knowledge, cognitive CQ refers to general knowledge and knowledge structures about different cultures, motivational CQ refers to the capacity of an individual to direct energy toward learning about and functioning in culturally diverse settings, and behavioral CQ refers an individual's capacity to demonstrate appropriate verbal and nonverbal actions in culturally diverse settings (Ang & Van Dyne, 2008).

**Personality**

The Five-Factor model (FFM) or Big Five taxonomy of personality is one of the most widely accepted and researched models in psychology (Barrick & Mount, 1991). Many studies have been conducted examining the relationship between personality and job performance (Barrick, Mount, & Judge, 2001; Griffin & Hesketh, 2004; Salgado, 1997). Meta-analysis has demonstrated that conscientiousness consistently predicts job performance across occupations. Emotional stability has also been shown to predict job performance across occupations, though less consistently. The relationships between the other three personality characteristics and job performance are mixed. Extraversion and openness to experience were shown to be predictive of training performance, and agreeableness was shown to be predictive of teamwork. Extraversion has also been
shown to be a useful predictor of job performance in managerial and police occupations (Barrick et al., 2001). In a similar meta-analysis, Tett, Jackson, and Rothstein (1991) found agreeableness to be the best predictor of job performance. Surprisingly, extraversion and conscientiousness were the least predictive of job performance. It should be noted that the Tett et al. (1991) meta-analysis was not based on as many studies.

Self-Monitoring

To date, there is no empirical study that has explored the link between CQ and self-monitoring. Snyder (1974) identified self-monitoring as a theory of expressive control; conveying internal states through facial expressions, hand gestures, body posture, voice texture, and other verbal and nonverbal cues in the absence of the internal states. Self-monitoring theory is concerned with the antecedents and consequences of variation in the extent to which individuals strategically cultivate public appearances (Gangestad & Snyder, 2000). According to the theory, individuals have meaningful differences in the extent to which they can and do exercise expressive control. Some individuals are concerned with the social appropriateness of their expressive presentation of themselves. These individuals monitor their expressive behavior and regulate their presentation of themselves for the sake of desired public appearances.

Self-monitoring is especially important in organizational settings. Day, Schleicher, Unckless, and Hiller (2002) examined the potential of self-monitoring for explaining and predicting individual attitudes, behaviors, and performance in organizations. The results of their meta-analysis suggested that self-monitoring significantly affected work-related outcomes associated with job performance and advancement, ability, and leadership behavior and emergence. High self-monitors are
CULTURAL INTELLIGENCE

more involved in their jobs, perform better on the job, are more likely to become a leader at work, receive better performance appraisals, and receive more promotions than low self-monitors. However, the results are not all positive. High self-monitors have been shown to have lower organizational commitment and higher role stress at work compared to low self-monitors (Day et al., 2002). Given these mixed findings, further research on self-monitoring must be conducted.

Rationale and Hypotheses

Cultural Intelligence. Cultural intelligence (CQ) is the capability to function effectively in culturally diverse settings (Earley & Ang, 2003). There are four facets of CQ: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Ang & Van Dyne, 2008). CQ is a state-like individual difference that can change over time depending on training and experience. Although personality is more stable over time, it is important to examine the relationships between personality factors and the four factors of CQ. Research has shown that there were meaningful significant relationships between aspects of CQ and personality characteristics. Research has also shown that CQ has been linked with performance.

Self-Monitoring. Self-monitoring is defined as the extent to which individuals monitor, adjust and control their behavior based on how it is perceived by others (Synder, 1974). High self-monitors are situationally guided. These individuals possess a strong desire to project a positive image of themselves in order to impress others. By contrast, low self-monitors are dispositionally guided. These individuals emphasize being true to their own personal core values, and strive to act in accordance to these values. The literature has examined the relationships between personality and self-monitoring. The
results of studies investigating the consequences of self-monitoring at work have been mixed. High self-monitors have not only been shown to be associated with better job performance and leadership emergence, but high self-monitors have also been shown to have lower organizational commitment (Day et al., 2002).

**Hypotheses**

There has yet to be a study that has investigated the relationships between CQ and self-monitoring. Both constructs have been shown to be significantly related to personality characteristics, such as openness to experience. Self-monitoring and CQ have also been linked with performance. Individuals who rate high in self-monitoring are more effective in cross-cultural situations because they have an awareness of their own abilities and can adjust their thinking and behavior in an interaction characterized by cultural diversity. Therefore, it is hypothesized that CQ will be related to self-monitoring.

*Hypothesis 1:* Self-monitoring will be significantly positively correlated with overall scores of CQ.

Openness to experience has been shown to be significantly related to all four facets of CQ (Ang et al., 2006). Openness to experience has also been shown to be significantly related to self-monitoring (Morrison, 1997). Both of these relationships are expected to be replicated. Therefore, it is hypothesized that openness to experience will be related to all four facets of CQ, and openness to experience will be related to self-monitoring.

*Hypothesis 2:* Openness to experience will be significantly positively correlated with metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ.

*Hypothesis 3:* Openness to experience will be significantly positively correlated
with self-monitoring.

High self-monitors are highly motivated to adjust their behavior to look good in the eyes of others. Because this motivation is so strong, it outweighs the motivational processes of personality (Barrick et al., 2005). Therefore, the relationship between openness to experience and CQ is hypothesized to be moderated by an individual’s level of self-monitoring.

_Hypothesis 4:_ Self-monitoring will moderate the relationship between openness to experience and CQ, such that when self-monitoring is high, openness to experience will not be related to CQ, whereas when self-monitoring is low, openness to experience will be positively related to CQ.

**Method**

**Participants.** This study recruited participants through a posting on Amazon’s Mechanical Turk (MTurk) website. This website allows willing participants to complete human intelligence tasks (HITs), such as the surveys used in this study. Participants were offered $.75 for completing the surveys. According to Cohen (1991), 85 participants were needed to have 0.8 power to detect a medium effect (.3) with an alpha of .05 using correlational analysis. The sample consisted of 100 participants. There were 50 males and 50 females. The average age of participants was 36.5 years.

**Measures.** The measures are described next.

_Cultural intelligence._ Although the construct of CQ is a relatively new one, a scale has been developed to measure it. Researchers interviewed business executives with extensive global work experience and relied on existing literature on intelligence and cross-cultural competencies to develop the CQS (Van Dyne et al., 2008). The CQS is a
20-item scale that contains four items that assess metacognitive CQ, six items that assess cognitive CQ, five items that assess motivational CQ, and five items that assess behavioral CQ. The CQS is scored on a 7-point Likert-type scale from \emph{strongly disagree} (1) to \emph{strongly agree} (7). The average score for each of the four subscales is used in the analysis. Internal consistency reliability estimates in this study ranged from .87 to .92 for the four subscales. The overall CQS had an internal consistency of $\alpha = .95$ for this dataset.

\textbf{Self-Monitoring.} Self-monitoring was assessed using the scale developed by Snyder and Gangestad (1986). Originally constructed as a 25-item assessment, the revised version contains 18 items and is scored on a true-false format. Similar to the research conducted by Barrick et al. (2005), this study scored the self-monitoring scale on a 5-point Likert-type scale from \emph{strongly disagree} (1) to \emph{strongly agree} (5). The reliability estimate in this dataset was $\alpha = .82$ for the Self-Monitoring Scale.

\textbf{Personality.} Personality was assessed using the 50 item scale from the International Personality Item Pool (IPIP: Goldberg et al., 2006). Internal consistency estimates range from .79 to .87 for the five factors. Internal consistency estimates ranged from .78 to .92 in this study. The IPIP is scored on a 5-point Likert-type scale from \emph{very inaccurate} (1) to \emph{very accurate} (5).

\textbf{Demographics.} In addition to the self-report survey responses on CQ, personality, and self-monitoring, participants were also asked to provide some basic demographic information. Participants were asked for their age in years. Participants were also asked to identify their gender, either male or female. Other demographic items asked participants to identify their nationality, race or ethnicity, and country of residence.
Procedure

Before the study was conducted, approval from the Xavier University IRB was obtained. The study did not utilize any form of deception, and required that participants complete three surveys, one survey that measures CQ, one survey that measures personality, and one survey that measures self-monitoring. All of the guidelines set forth by the IRB, including informed consent procedures and the safe storage of data, were strictly followed. Once approval was granted, a link for the survey was made available on the MTurk website. The survey operated via SurveyGizmo.com and took approximately 30 minutes to complete.

Results

The first hypothesis in this study predicted that self-monitoring would be significantly positively correlated with overall scores of CQ. The results of this study supported this hypothesis. Self-monitoring was related to overall scores of CQ \( r = .43, p < .01 \). The second hypothesis predicted that openness to experience would be significantly positively correlated with metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ. The results of this study supported this hypothesis. Openness to experience was related to metacognitive CQ \( r = .33, p < .01 \), cognitive CQ \( r = .27, p < .01 \), motivational CQ \( r = .28, p < .01 \), and behavioral CQ \( r = .39, p < .01 \). The third hypothesis predicted that openness to experience would be significantly positively correlated with self-monitoring. The results of this study supported this hypothesis. Openness to experience was related to self-monitoring \( r = .41, p < .01 \). The fourth hypothesis predicted the moderating effect of self-monitoring on the relationship between openness and CQ. The results of this study did not support this hypothesis. The
interaction between self-monitoring and openness to experience in prediction of overall scores of CQ was not significant ($\Delta R^2 = .004$, $p = .46$).

Discussion

Cultural Intelligence. Surprisingly, overall scores of CQ were significantly positively correlated with all of the personality variables except emotional stability. Previous researchers found a significant negative relationship between emotional stability and behavioral CQ (Ang et al., 2006). Those authors suggested that the even-tempered nature of those high on emotional stability prevents appropriate displays of verbal and nonverbal behavioral CQ. The results of this study suggest that emotional stability is unrelated to CQ. Another surprising result of this study was that extraversion, agreeableness, and openness to experience were all significantly positively correlated with all four factors of CQ. It was expected that this would be the case for openness to experience, but not extraversion and agreeableness.

Contributions. The results of this study provided more evidence for the validity of the CQS. A principal components analysis with varimax rotation demonstrated a four-factor solution for the CQS, with all but one item loading on the appropriate factors. This is important because it provides more data on a relatively new construct. As more and more studies on CQ are conducted, it is essential that the scale that is used to measure CQ continues to be psychometrically evaluated. This study also added strength to the previous finding by Ang et al. (2006) that openness to experience was significantly related to all four facets of CQ.

The primary focus of this study was to examine how CQ and self-monitoring interacted with one another. The hypothesis that self-monitoring would moderate the
relationship between CQ and openness to experience was not supported. However, the results of this study added to the understanding of both CQ and self-monitoring. The strong positive correlation between CQ and self-monitoring suggests that an individual’s ability to monitor their expressive behavior is related to an individual’s ability to function more effectively in situations characterized by cultural diversity. In addition to the strong positive correlation between self-monitoring and overall scores of CQ, self-monitoring was significantly correlated with all four facets of CQ. This finding was not hypothesized, but it suggests that there is a relationship between the mental, behavioral, and motivational capabilities of CQ, and an individual’s ability to self-monitor expressive behavior. This is contrary to an expectation that self-monitoring may only relate to the behavioral aspects of CQ because self-monitoring centers around specific behaviors.

Limitations and future research directions. All of the surveys in this study utilized self-report data. It was difficult to control for any faking on the CQS, the personality assessment, or the Self-Monitoring scale. However, the motivation to fake is likely very low, because the stakes for the study did not involve the kinds of real-world outcomes (e.g., obtaining a job) that would necessitate faking. Obtaining payment for participation was not a function of any particular response pattern, other than correct responding to the quality check questions, so it is unlikely that systematic faking occurred. Another limitation was the lack of causal inferences that can be made using correlational analysis. The study used survey data and did not have any experimental manipulations of the variables. Therefore, an assessment of causality between self-monitoring and CQ could not be examined using this type of methodology.

Future research on the interaction between CQ and self-monitoring should focus
on some measure of performance. Previous research focused on cultural judgment and
decision making, but other measures of performance should be examined. One specific
conceptualization of job performance that could be examined with relation to CQ is
adaptive performance. Global organizations require employees to be increasingly
versatile, adaptable, and tolerant of uncertainty when they interact with individuals from
other cultures (Pulakos, Arad, Donovan, & Plamondon, 2000). Examining the link
between CQ and adaptive performance would be a logical next step in this line of
research. The literature on CQ could also benefit from the construction of theoretical
models. For example, a theoretical model that links self-monitoring to performance could
be mediated by one or more of the four facets of CQ. The incorporation of personality
variables and adaptive performance within this theoretical model would also be necessary
to gain a greater understanding of CQ.

Mechanical Turk. Instead of using traditional data collection methods, the
researchers in this study decided to recruit participants through a posting Amazon’s
Mechanical Turk (MTurk) website. This method of data collection had both advantages
and disadvantages. The study was open to participants globally. Instead only collecting
data from participants from the United States, participants from places such as India,
Great Britain, Pakistan, Serbia, and Russia completed surveys. This is especially
important in a study that focuses on CQ and issues related to diversity. A culturally
diverse sample should provide a more accurate examination of CQ. The biggest
advantage of collecting data through MTurk was the time it saved. Traditional data
collection methods may take weeks or months. MTurk reduced that time to a few hours.
There are some disadvantages when using MTurk to collect data for a psychological study, however. Amazon charges a ten percent fee for using this service. For every participant paid $.75, Amazon charged the researchers $.075. Another concern was if participants would give their full attention for the duration of the study. In an attempt to ensure participants were paying attention, quality check items were added to each survey. For example, one of items simply asked participants to, “Please choose ‘Strongly agree’ for this item.” There were four quality check items throughout the three surveys. If participants did not pass the quality check items, they were not compensated, and their answers were removed from the dataset. Roughly thirty percent of participants failed the quality check items.

**Conclusions.** In an increasingly globalized economy, products and services may be created in one country, but sold in hundreds of different countries. As this trend continues, organizations need to rely on individuals with different cultural backgrounds and from different parts of the world. These individuals will need to be effective and productive when working in culturally diverse settings. Triandis (2006) stated that it requires extensive training to produce a culturally intelligence individual. Extensive training can be expensive and time consuming. If organizations plan to make this commitment to their employees, they should ensure that they select the best possible individuals for cultural intelligence training. Individuals who are successfully able to self-monitor their behaviors should be excellent candidates. Similarly, individuals who rate high on measures of openness to experience should also be successful. Once it has been determined that an individual is culturally intelligent, he or she should be equipped with the tools necessary to deal with the challenges of an expatriate or overseas assignments.
References


Appendix A

Informed Consent

You are being given the opportunity to volunteer to participate in a project conducted through Xavier University by Robert Mumau in pursuit of his Master’s thesis. This study focuses on personality factors and issues relating to diversity. You will complete three short surveys and be asked to provide some basic demographic information.

There are no known risks in participating in this study. With your participation in this study, it is hoped that a better understanding of issues relating to diversity can be achieved. Refusal to participate in this study will have NO EFFECT ON ANY FUTURE SERVICES you may be entitled to from Xavier University. You are FREE TO WITHDRAW FROM THE STUDY AT ANY TIME WITHOUT PENALTY.

You will be paid $0.75 for participating in this study, which should take about 30 minutes to complete. However, please note that if you do not complete all required items, you may not be eligible for compensation. In total, you will be allotted 45 minutes to complete the entire survey. You have to be at least 18 years old to participate in this study.

Although you will be required to enter your MTurk unique worker ID at the end of the survey to receive compensation if eligible, the researchers will not be able to access any identifying information you provided to Amazon or MTurk. Moreover, the researchers will not release any of your survey responses to Amazon or MTurk, and only the researchers conducting this study will have access to your responses. Therefore, your
responses will remain anonymous. Finally, no analyses of any kind will be conducted prior to the removal of all MTurk ID numbers from the data set.

If you have any questions at any time during the study, you may contact Robert Mumau at (609) 980-7009 or mumaur@xavier.edu or his advisor, Dr. Morell Mullins, at (513) 745-3170 or mullins@xavier.edu. Questions about your rights as a research participant should be directed to Xavier University's Institutional Review Board at (513) 745-2870.

By clicking “Next,” you agree to the following statement: I have been given information about this research study and its risks and benefits and have had the opportunity to ask questions and to have my questions answered to my satisfaction. I freely give my consent to participate in this research project.
Appendix B

References of Measures Used


Appendix C

IRB Approval Letter

January 29, 2013

Robert Mumau
8629 Towson Blvd.
Miamisburg, OH 45342

Re: Protocol #1247, Individual Differences in Cultural Intelligence: Self-Monitoring as a Moderator of the Relationship between Personality and Cultural Intelligence

Dear Mr. Mumau:

The IRB has reviewed the materials regarding your study, referenced above, and has determined that it meets the criteria for the Exempt from Review category under Federal Regulation 45CFR46. Your protocol is approved as exempt research, and therefore requires no further oversight by the IRB. We appreciate your thorough treatment of the issues raised and your timely response.

If you wish to modify your study, including the addition of data collection sites, it will be necessary to obtain IRB approval prior to implementing the modification. If any adverse events occur, please notify the IRB immediately.

Please contact our office if you have any questions. We wish you success with your project!

Sincerely,

[Signature]

Kathleen J. Hart, Ph.D., ABPP
Vice Chair, Institutional Review Board
Xavier University

KJH/sb

C. Morell Mullins, Advisor