The Development of the CCCI: The Cross-Cultural Competence Inventory

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Abstract

A rational-empirical approach was undertaken to develop the Cross-Cultural Competence Inventory. In-depth interviews with subject matter experts were conducted following an extensive literature review, in order to derive a theoretical model of the construct. Scales were constructed to measure nine hypothesized dimensions of cross-cultural competence. An initial pool of 149 items was administered to a sample of military personnel from all branches of service to empirically validate the underlying structure of the nine hypothesized dimensions. Following statistical analysis, six scales were derived: (1) Willingness to Engage; (2) Cognitive Flexibility & Openness; (3) Emotional Regulation; (4) Tolerance of Uncertainty; (5) Self-Efficacy; and (6) Ethnocultural Empathy. Future empirical work is needed to collect baseline data and to explore the construct, criterion, and predictive validities of the six scales.

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Concerns that the military as a whole is not prepared to conduct operations in a way that understands other cultures has sparked an influx of research into the areas related to *cross-cultural competence* (CCC). Instances of stereotyping, racism, and abuses of power by military personnel have further showcased the ways in which military members have alienated the local populations. Ahmed Hashim, a professor of strategic studies at the Navy War College, has noted consistent Iraqi perceptions of overly aggressive and disrespectful American responses to insurgent attacks. These include, for example, entering Iraqi homes without the presence of the male head of household and engaging in body searches of female Iraqis by male American soldiers. According to several retired Sunni Arab officers, one of the major factors promoting the hatred of the U.S. is its cultural ignorance and disdain for the Iraqis (Hashim, 2004). For these reasons, the Department of Defense has recently made the assessment and training of CCC a top priority for the military (e.g., Langewiesche, 2004; McFarland, 2005; Putman, 2004).

Before researchers can embark upon the assessment and training of CCC, we must first define and operationalize this multidimensional construct. Given the debate and disagreement among the various disciplines with regard to the definition of *culture* itself, let alone competence across cultures, this is no small undertaking. For instance, the most common definitions of culture purport that culture consists of unconscious and/or conscious values, beliefs, perceptions, and behaviors (Weaver, 2000). Other theories argue that culture is mainly cognitive (e.g., thoughts, values, beliefs, attitudes, and/or perceptions), behavioral (e.g., norms and actions), or a relational process (e.g., relationship-building or socialization); still other theories argue that culture is a combination of these three dynamics. Overall, the differences in theoretical definitions and conceptualizations tend to be over the appropriate scope or unit of analysis, what variables should be analyzed in attempting to describe culture, to what extent generalizations can be made about the interaction of these variables, and in how the variables influence and impact behavior, action, and outcomes.

As for the competence itself (i.e., CCC), a myriad of knowledge, skills, attributes, cognitive dimensions, and attitudes have been proposed across different academic and scientific

disciplines. Varying operational definitions have driven investments in both training and assessment in the military as well as business communities. Because CCC is critical for mission success across a variety of ranks and occupational specialties, as the examples presented above illustrate, assessing the capabilities of our military members is tantamount. Adding to the confusion, however, is the variety of overarching and multifaceted concepts, including "Cultural Intelligence" (Earley & Ang, 2003), "Multicultural Competency" (Dunn, Smith, & Montoya, 2006), and "Intercultural Competence" (Hammer, Bennett, & Wiseman, 2003). Abbe, Gulick, and Herman (2007) divide these overarching concepts and specific variables into three types: antecedents (predictors), components of competence (e.g., knowledge, skills, affect, and motivation), and outcome variables (e.g., interpersonal relationships, job performance, and personal adjustment), which are simply indicators of effectiveness. Thus, the sheer volume of different constructs suggested in the literature, as well as inconsistencies in operational definitions and research methods, make it difficult to settle on the important and relevant components of each competency in question.

Defining Cross-Cultural Competence

In order to understand and assess this multidimensional construct, a two-tiered approach was undertaken. An extensive review of the literature provided a theoretical domain upon which to base a deductive approach to item development (Hinkin, 1995). However, because of the lack of consensus among researchers and academicians, an inductive approach to item development was also employed. Therefore, following extensive literature reviews (Ross & Thornson, 2008; Thornson & Ross, 2008), in-depth interviews were conducted with subject matter experts (SMEs). Qualitative data were collected from nine higher-ranking enlisted Army soldiers and Army officers who had been deployed to other countries outside of the United States (Ross, 2008). Thus, both inductive and deductive approaches to item generation were undertaken to enhance content validity, or the adequacy with which the measure assesses the domain of interest.

A preliminary conceptual model of CCC was proposed to guide development of the CCCI (e.g.,Thornson, Ross, & Cooper, 2008). Nine factors were proposed from an integration of the interview data with the literature reviews. These nine variables of interest are elucidated below.

Variables of Interest

Self-efficacy. The concept of self-efficacy is the focal point of Bandura's social cognitive theory (Bandura, 1997). It is the belief that one is capable of performing in a certain manner or attaining certain goals. More specifically, it is the belief that one has the capabilities to execute the courses of action required to manage situations. There is an important distinction between self-esteem and self-efficacy. Self-esteem relates to a person's overall sense of self-worth, whereas self-efficacy relates to a person's perception of their ability to reach a particular goal. Unlike efficacy, which is the *power* to produce an actual effect (i.e., competence), self-efficacy is one's *belief* that one has the power to produce that effect (Ang, Van Dyne, Koh, & Ng, 2004;

Pintrich & De Groot, 1990; Schwarzer & Jerusalem, 1995) and therefore, may be considered a motivational component of competence. For example, a person with high self-efficacy may engage in more cross-cultural encounters and persist in encounters, whereas a person with low self-efficacy would harbor feelings of self-doubt and may be likely to withdraw prematurely from such encounters.

Ethnocultural empathy. Empathy is a variable that has been discussed in the literature as important to CCC, but not well defined and measured as a construct (Abbe et al., 2007). It entails the ability to understand another's emotions, as well as the cognitive ability to take on the perspective of another person. Examples of cross-cultural, or "ethnocultural" empathy (Wang et al., 2003) were documented 31 times in the interview data (Ross, 2008). Based upon our literature review and interviews, it appears that empathy for those who are different from oneself allows other variables related to CCC, such as openness to new experiences and the willingness to engage with those from other cultures, to emerge

Openness to new experiences. Openness represents an individual's extent of interest and drive to learn about and to gain new experiences, including cross-cultural experiences (Ang et al., 2004). Thus, it is hypothesized that an individual who possesses an open mind will actively search and explore new situations and regard them as a challenge, rather than as a hindrance or stressor, thus motivating one to seek out and engage with those of other cultures.

Willingness to engage. This construct represents an individual's willingness or persistence to stay engaged in making sense of unfamiliar social situations in dissimilar cultures (Earley & Ang, 2003). Although this tendency may be predicted by an individual's level of the personality trait of extraversion, we believe this type of willingness is a skill that can be trained as well.

Cognitive flexibility. This is an important skill that is related to openness and adaptability. It is hypothesized to result from having a rich mental model that includes a repertoire of strategies from which to choose, depending upon the given situation, and also involves being able to switch easily from one strategy to another during assessment, decision-making, and problem-solving (Abbe et al., 2007). The ability to be flexible in one's approach is expected to allow an individual to solve a range of problems in complex and dynamic situations, which is tantamount to mission success (Gompert, Lachow, & Perkins, 2005).

Self-monitoring. Self-monitoring involves the observation of and adjustment to one's own behavior in socially (or culturally) appropriate ways, depending upon specific situational cues. Thus, high levels of self-monitoring are expected to enable individuals to determine when and how to adjust their behavior, a cognitive ability that facilitates behavioral social interactions across divergent situations. Those with high self-monitoring abilities are expected to be chameleon-like and able to readily change their behaviors depending upon the specific environment in which they are placed or in response to a dynamic situation (Ang, Van Dyne, Koh, & Ng, 2004; Snyder, 1974).

Emotional self-regulation. This construct is similar to the lay term, self-control. It refers to the ability to regulate or control one's emotions effectively so that they do not interfere with one's performance (Gross & John, 2003). Therefore, a lack of self-regulation is expected to weaken interpersonal skills and relationship building across different contexts. Historically, this type of self-control has been conceived of as especially important for those in leadership roles in the military. However, having the skills of self-regulation and interpersonal skills is of keen importance in today's military across all ranks and job types, especially given the complexity of contemporary cross-cultural missions.

Low need for cognitive closure. The need for cognitive closure is defined as the extent to which a person, faced with a decision or judgment desires any answer, rather than exist in a state of confusion and ambiguity (Webster & Kruglanski, 1994). As such, a high need for closure may cause an engagement to be prematurely ended due to an immediate need for answers or solutions, resulting in a reluctance to search for other or better ways of doing things. As a personality construct, the need for cognitive closure is presently treated as a latent variable manifested through several different aspects, namely, desire for predictability, preference for order and structure, discomfort with ambiguity, decisiveness, and close-mindedness (Webster & Kruglanski, 1994).

In the Stage Model of Cognitive Development (Ross, Phillips, Klein, & Cohn, 2005), it was found that less advanced performers display more rigidity and need for structure and adherence to the plan, and this may be related to the need for cognitive closure. Certain situational factors (e.g., time pressure) may trigger a need for premature closure across individuals, but more so in those who are already predisposed to seeking closure.

Tolerance for ambiguity. Tolerance for ambiguity is a general disposition that broadly influences cognition, attitudes, and behavior. Low tolerance for ambiguity is characterized by rigidity, dichotomous thinking, authoritarianism, and ethnocentrism (Frenkel-Brunswik as cited in Abbe et al., 2007). Abbe and colleagues report that this is a different variable from the need for cognitive closure, though they do not state explicitly how the two constructs are differentially defined. From our literature review, there appears to be overlap between these two constructs. Thus, for exploratory purposes, we assessed these with two different scales, while keeping in mind that they may really be measuring the same thing.

Method

Procedure

Following an extensive review of the literature, qualitative data were collected by way of in-depth cognitive task analysis (CTA) and critical incident interviews with subject matter experts (SMEs) in the military. Interviews were conducted to derive the initial content validation of the CCC dimensions explicated in the literature, as well to relate CCC to mission effectiveness.

After obtaining Institutional Review Board (IRB) approval, prescreening criteria were constructed to support the selection of interview participants. The prescreening criteria were then provided to the course from which the participants would be drawn by the Director of Equal Opportunity Training at DEOMI, Dr. Daniel McDonald. The five participants who met the prescreening criteria consisted of non-commissioned officers (NCOs) with recent Iraq deployment experience. The data from the DEOMI interviews were not sufficiently rich in a variety of mission types, depth of experience, or military branches examined. For that reason, data from four other interviews were added to our data set to increase our insights during analysis (N = 9).

Demographics were collected from each participant and recorded. The remainder of the semi-structured interview was then conducted. Semi-structured interviews were used to allow for variation in the line of questioning within a general framework in order to explore important information revealed during the interview. The interview consisted of some or all of the following: (1) a task diagram outlining the general nature of the job held by the participant during the last deployment; (2) ranking of self and team members in terms of CCC; (3) probes to understand the nature of CCC.

Results of Interviews

All nine participants relayed important observations as to what they considered to be the dimensions of CCC and of these, several had sufficient experience to consider themselves competent in terms of cross-cultural interactions. Therefore, the findings are not directly an analysis of expertise, but an analysis of observations from a range of participants possessing various levels of competence. While the findings are not based on extensive coding and inter-rater reliability, their qualitative analysis provided an initial content validation effort in order to determine whether the factors we extracted from the literature are instrumental in performing current military missions.

When possible, we gathered critical incidents based on examples mentioned during the ranking task mentioned above to further amplify the nature of CCC. Generally, it was difficult to elicit incidents, and we relied heavily on examples that were not fully developed incidents. We had informally hypothesized that the proficiency level of CCC needed would vary for the nature of the mission, but the examples we gathered led us to conclude that missions can easily enter new phases, and circumstances might place people into situations where interaction is required. A leader cannot predict which members of the unit will need to be culturally competent. Some will obviously need culture competence for their job; the need for cultural competence will emerge for many others. At times, that emergent requirement will be in a crisis situation.

The participants provided us with examples which illustrate the connection between cultural competence and mission effectiveness. Specifically, several mission-specific competencies were uncovered. First and foremost, *perspective-taking* emerged as a critical element necessary for mission success. Perspective-taking is cognitive in nature and thus separate from ethnocultural empathy. Perspective-taking involves a deeper understanding of

another culture in such a manner that it allows an individual to take on the perspective of a member of that culture. Furthermore, it enables the individual to leverage such a perspective in order to *predict* another's behavior and attitudes. However, simply being able to understand the perspective of another person or group of people in order to predict behavior is not sufficient for competence. *Interpersonal skills* were the second most important factor to achieving a mission in another culture. Interpersonal skills include the ability to persuade and negotiate, as well as how to size up a group or person, and how to present oneself. Interpersonal skills also include the rapport-building necessary to move about safely in a threatening country or to perform short-term tasks that do not require ongoing relationships. At higher levels of competence, *relationship-building* was the key ability as opposed to simply empathetic understanding.

Instrument Development

Based upon the results of the comprehensive literature review and the foregoing interviews, an initial item pool was constructed according to the construct validation approach advocated by psychometricians (Clark & Watson, 1995; Nunnally & Bernstein, 1994). Nine scales were developed to assess the nine hypothesized dimensions of CCC, namely: (1) Self-Efficacy; (2) Ethnocultural Empathy; (3) Openness to New Experience; (4) Willingness to Engage; (5) Cognitive Flexibility; (6) Self-Monitoring; (7) Emotional Self-Regulation; (8) Low Need for Cognitive Closure; and (9) Tolerance for Ambiguity.

The scale development process began by adopting and/or revising items from existing, validated scales that represented each of the proposed nine dimensions. For example, the most common operationalization of the Need for Cognitive Closure is the unidimensional use of the Need for Closure Scale (NFCS; Webster & Kruglanski, 1994). The scale assesses five facets or dimensions. Facet 1 is the *Preference for Order* (e.g., "I hate to change my plans at the last minute."). Facet 2 is the *Preference for Predictability* ("I don't like to go into a situation without knowing what I can expect from it."). Facet 3 assesses *Decisiveness* - what we have labeled *Cognitive Flexibility* ("When faced with a problem I usually see the one best solution very quickly."). Facet 4 measures the *Discomfort with Ambiguity* ("I don't like situations that are uncertain."). Facet 5 assesses *Closed-Mindedness* ("I dislike questions which could be answered in many different ways."). As this instrument is a well-validated scale, we used four of the five scales for our initial prototype to assess four of the dimensions in our model, namely: (1) Need for Cognitive Closure, (2) Tolerance for Ambiguity, (3) Openness to New Experiences, and (4) Cognitive Flexibility, and also included the Lie Scale items to screen for social desirability bias.

To assess the other five dimensions in our model, items were adapted or revised from other existing scales (*see* Appendix A) or were written based upon the interview data and critical incident data. Once the final scale was complete, meetings were held among the study authors to make the final determinations on the wording, suitability, content domain coverage, and retention of the final scale items. These steps were taken to ensure content coverage of each domain as well as to ensure that all items were phrased carefully, simply, and unambiguously, as recommended by psychometricians (Rust & Golombok, 1989). This procedure yielded an initial

item pool of 144 items, not including the response distortion items (elucidated below), in order to assess nine different hypothesized factors related to CCC (*see* Appendix A).

After obtaining IRB approval, the order of the 149 items, representing the nine scale dimensions of CCC, along with the response distortion items, was randomized for purposes of administration. A six-point Likert scale was used throughout the inventory, facilitating both scoring and the respondents' ability to complete the entire inventory in a timely manner. Participants rated the extent to which they 1=*Strongly Disagree* to 6=*Strongly Agree* with each statement. Several items were reverse-coded in order to discourage random responding as well as to enhance validity. Reverse coding an item entails wording the item so that when scoring such responses, those with higher values indicate *less*, rather than *more*, of a given construct. They are used to lessen socially desirable or random responding. To score such items, the values are "reversed" (i.e., "1" equals "6," "2" equals "5," and so on) prior to item analysis.

Before online administration of the CCCI prototype, a final meeting was held at DEOMI at Patrick Air Force Base with Mark A. Dallaire, Directorate of Research at DEOMI, and Dr. Loring J. Crepeau, Chief Scientist at DEOMI, in order to determine the demographic items to include in the final inventory. It was decided at this meeting that the wording and coding of items should be compatible with the Defense Equal Opportunity Management Organizational Climate Survey (DEOCS) in order avoid redundancy and lessen suspicion by respondents. The CCCI was uploaded as a voluntary option for participants to choose after completing the DEOCS; that is, after completing the DEOCS, personnel would be given the option of participating in our research. An introduction was written, outlining the purpose of this research and including an informed consent, the demographic items were added, and the order of the 149 items was randomized for administration purposes (*see* Appendix B).

Data Analysis

Step 1: Initial Processing and Scrubbing

After initial raw data were processed and prepared, we conducted additional cleaning and analyses of the data. Different types of pattern responding were used to identify Soldiers with questionable data that should be dropped. For example, a Soldier's responses were dropped if the respondent completed the computerized instrument too quickly. The number of minutes each participant spent in completing the 149 items and demographics of the CCCI was included in the database; thus, we were able to examine the reasonableness of the time spent in order to eliminate those who very likely engaged in random responding. Preliminary pilot testing had shown that a reasonable amount of time to complete the entire inventory took a minimum of 20 to 25 minutes. Therefore, it was decided to eliminate the data of respondents who took less than 20 minutes to complete the entire CCCI prototype. In addition, those participants who failed the "Lie Scale" criteria as per Webster and Kruglanski (1994) were excluded as well. The scoring instructions for this measure stipulate that any participant whose responses to the five lie scale items sum to more than 15 (using the 1 to 6 rating scale) should be eliminated (*see* Appendix A).

Step 2: Item and Reliability Analyses

Item analysis involves statistics that yield item differentiation, item-validity, and item-reliability indices to determine: (1) if items differentiate or discriminate well between those who are high versus low on the particular characteristic being measured; (2) the degree to which each item measures what it purports to measure; and (3) the internal consistency of the inventory as a whole.

Unreliable measurements of people's tendencies, attitudes, or intentions will hamper efforts to predict their behavior, or any other type of criterion; therefore, the purpose of instrument development is to make a reliable instrument out of unreliable individual items. By using reliability and item analysis, we sought to increase our ability to construct reliable measurement scales following the classical test theory model. Classical test theory, where the assessment of scale reliability is based on the correlations between the individual items that make up the scale and the variances of the items, is based on the premise that each response to an item reflects to some extent the “true score” for the intended construct(s), and to some extent esoteric, random error (Nunnally & Bernstein, 1994).

Cronbach's coefficient alpha is the formula most often used to obtain an estimate of reliability and ranges anywhere from zero to 1.0. This formula computes the variance for each item and the variance for each of the scales. The variance of the scales should be smaller than the sum of item variances if the items measure the same variability between subjects, that is, if the items are measuring some *true score*. In other words, the variance of the sum of two items is equal to the sum of the two variances minus twice the covariance, or the amount of true score variance common to the two items. In this way, analysts are able to estimate the proportion of true score variance that is captured by the items by comparing the sum of item variances with the variance of the sum scale. If there is no true score but only error in the items (which is unique, and, therefore, *uncorrelated* across participants), then the variance of the sum will be the same as the sum of variances of the individual items. Therefore, coefficient alpha will be equal to zero. If one could design an inventory with all items *perfectly* reliable in measuring the same construct (i.e., in an *ideal* world), coefficient alpha would be equal to 1.0.

Reliability statistics and item-total correlations were computed. It is advised that low item-total correlations below .30 should be discarded while negative values mean bad wording, sampling error, or keying error. As recommended, however, we did not merely seek a high coefficient alpha as the only goal because a high alpha can be achieved simply when test items have maximally similar distributions (p. 305; Nunnally & Bernstein, 1994). Therefore, for each scale, we examined the corrected item-total correlation between the respective item and the total sum score (without the respective item), the squared multiple correlation between the respective item and all others, and the internal consistency of the scale (i.e., coefficient alpha) if the respective item were to be deleted.

Results

Participant Pool and Demographic Data

Gender and age. The total number of completed inventories was 1411. However, after data cleaning, the final sample size was reduced to $N = 641$. Of these 641 participants, 486 were male (75.8%) and 155 were female (24.2%). The ages ranged from 18 to 40 years of age, with 67 participants between 18 and 20 years of age (10.5%); 220 participants between 21 and 24 years of age (34.3%); 179 participants between ages 25 and 29 years of age (27.9%); 114 participants between ages 30 and 35 years of age (17.8%); and 61 participants between the ages of 36 and 40 (9.5%).

Pay grade and branch of service. Of the 607 participants who reported their pay grade, 154 reported a pay grade between 1 and 3 (24%); 324 reported a pay grade between 4 and 6 (50.5%); 76 reported a pay grade between 7 and 8 (11.9%); 14 reported being at a pay grade between 9 and 10 (2.2%); 22 reported being at a pay grade between 11 and 13 (3.4%); and 17 reported being at a pay grade between 14 and 15 (2.7%). Thirty-four participants chose not to answer this question (5.3%). Of the 528 total participants who reported their Branch of Service, there were 17 participants in the Air Force (2.7%); 181 participants in the Army (28.2%); only 1 participant in the Coast Guard (0.2%); 149 participants in the Marine Corps (23.2%); 179 in the Navy (27.9%); and only 1 reported being in an Other Military Service (0.2%).

Deployment history and interactions. Of the 641 participants in our sample, 264 participants (41.2%) reported being deployed a total of zero months, or did not answer this question. Therefore, the range of months deployed included 0 months and went up to 50 months ($M = 5.2$; $SD = 6.3$). Of those 385 participants who reported interacting with the local population across deployment(s), 58 reported that the average level of interaction across deployments was "Not at All" (9%); 90 reported "Very Little" (14%); 79 "A Moderate Amount" (12.3%) of interactions; 101 reported "A Fair Amount" (15.8); while only 19 participants reported "A great deal" (3%); and 38 participants reported the average level of interaction as "It was essential to my job" (5.9%). There were 256 participants (39.9%) with missing data.

Intercorrelations among Demographics

Appendix C, Table 1 displays the intercorrelations among the various demographic factors. Age Category correlated positively with Years in Service ($r = .72$; $p < .01$), with Pay Grade ($r = .53$, $p < .01$), and with Gender ($r = .10$, $p < .05$). That is, the older one is and the longer one is in the service, the higher is the Pay Grade, as expected. It also suggests that females in the services tend to be of a slightly older average age than males, but this correlation is negligible. Age Category was negatively correlated with Branch of Service ($N = 528$; $r = -.16$; $p < .01$), meaning that, in our sample, the average age of military members who reported as being in Other Military Services, the Navy, and the Marine Corps was lower than the average age of military members who reported being in the Air Force, the Army, and the Coast Guard (*Air Force*=1*; Army*=2*; Coast Guard*=3*; Marine Corps*=4*; Navy*=5*; Other Military Service*=6).

We found several significant correlations between Total Months Deployed and: (a) Years in Service ($N = 641$; $r = .09$; $p < .05$); (b) Branch of Service ($N = 528$; $r = -.24$; $p < .01$); (c) Hours of Cultural Awareness Training ($N = 641$; $r = .13$, $p < .01$); (d) Ratings of Training

Effectiveness (N = 641; r = .09; p < .05); (e) Average Level of Interactions with locals (N = 385; r = .19; p < .01); (f) the total Number of Deployments in the last five years (N = 641; r = .13; p < .01); and (g) Gender (N = 641; r = -.18; p < .01), meaning that females were not deployed for as many months as males were in our sample (*see* Appendix C). There was also a low positive correlation between Years in Service and Pay Grade (N = 607; r = .48; p < .05), as expected; however, there was no correlation between Pay Grade (i.e., rank) and the reported Level of Interactions with the local population across deployments. Caution in interpreting these lower correlations is advised as they may be due to the relatively large sample size.

Participant ratings of Training Effectiveness correlated significantly with only two demographic factors: (a) Gender (r = -.16; p < .01), and (b) the total number of Months Deployed (r = .09; p < .05). That is, females in our sample rated the effectiveness of training significantly higher than males, and those who had been deployed for more months of time rated the training effectiveness higher than those who had not. However, these correlations are also negligible. They may be statistically significant (due to the relatively large sample size), but not substantively so.

Item Analysis

Table 2 of Appendix D shows the relationships between the final scale dimensions. It seems that the various measured dimensions of CCC are significantly correlated with one another, suggesting the possibility of a general factor of CCC. The highest correlations were among the dimensions of Cognitive Flexibility & Openness, the Willingness to Engage, and Self-Efficacy, with correlation coefficients ranging from r = .67 to r = .74 (p < .01). The lowest correlation was found between Ethnocultural Empathy and Tolerance of Uncertainty (r = -.09, p < .01).

Scale means, standard deviations, and internal consistency reliability estimates (i.e., Cronbach's coefficient alpha) of scores on the resulting scales are displayed (*see* Table 3, Appendix E), as well as the scale correlations with the demographic variables (*see* Table 4, Appendix F).

Item elimination. Upon examination of the corrected item-total correlation between each item and the total sum score (without the respective item), the squared multiple correlation between the respective item and all others, and the internal consistency of the scale if the respective item were deleted, we deleted the items, one by one, that were not consistent with each of the scales. The original scale comprised of Self-Monitoring items (see Appendix A) was eliminated due to its low reliability (< .61) and failure to correlate significantly with any demographic variables.

Internal consistency of scales. The internal consistency reliability (i.e., Cronbach's coefficient alpha) estimates of the scales ranged from a low of .69 for Ethnocultural Empathy to .86 for both Self-Efficacy and Emotional Regulation (*see* Table 3, Appendix E), a prerequisite to establishing content and construct validity. During item analysis, it was found that Openness to

New Experiences and Cognitive Flexibility were highly correlated, to the point that a combined scale of the most related items resulted in higher reliability estimates than either scale by itself. Therefore, we preliminarily renamed this scale "Cognitive Flexibility & Openness." Likewise, and not unexpected, item analysis revealed a more reliable scale using fewer items by combining several items from the Low Need for Cognitive Closure and Tolerance for Ambiguity scales. As such, we have renamed this combined scale, "Tolerance of Uncertainty."

Correlations between CCC Dimensions and Demographics

We also estimated the correlations of the scales with the demographic variables. Of interest, Years of Service in the military correlated positively and significantly ($p < .01$) with four of the dimensions: Willingness to Engage ($r = .16$), Emotional Regulation ($r = .12$), Self-Efficacy ($r = .13$), and Ethnocultural Empathy ($r = .21$). It should be noted that the DEOCS demographic form defined Years in Service as a categorical variable (*0-4* years = 1; *5-8* years = 2; *9-12* years = 3; *13-16* years = 4; *16+* years =5); therefore, these relationships may have been stronger if this variable were allowed to vary continuously.

Age Category also was significantly correlated ($p < .01$) with these same four dimensions ($r = .16, .14, .13$, and $.25$, respectively), which may be partly due to the expectedly high correlation between Age Category and Years in Service ($r = .72$; $p < .01$). However, though Tolerance of Uncertainty correlated negatively ($r = -.09$) and significantly ($p < .05$) with Years in Service, its relationship with Age Category was not statistically significant in this sample.

Gender (Male=1; Female=2) correlated significantly with two dimensions, Cognitive Flexibility & Openness ($r = -.08$; $p < .05$) and Self-Efficacy ($r = -.08$; $p < .05$), meaning that females in our sample scored slightly lower on these two dimensions than males. However, this may be due to the restricted range of females in our mostly male population and as such, further replication with more diverse and heterogeneous populations is advised.

Other significant correlations between the CCC dimensions and the demographic factors involve respondents' perceptions of the effectiveness of Cultural Awareness Training. Here, all correlations were significant ($p < .01$), with coefficients ranging from $r = -.14$ for Tolerance of Uncertainty to $r = .24$ for Cognitive Flexibility & Openness and Self-Efficacy. Surprisingly, there were no significant relationships between *any* of the six dimensions of CCC and the Number of Deployments during the last five years, the total Months Deployed, the Level of Interactions with Locals across deployments, or with the Hours of Cultural Awareness Training. As these findings were unexpected and counterintuitive, we recommend further exploration using the CCCI in future studies with different populations.

Discussion

We undertook a rational-empirical and inductive approach to develop the Cross-Cultural Competence Inventory. Following an extensive review of the extant literature as well as in-depth critical incident interviews with subject matter experts, an initial pool of 149 items, comprising the nine scales to measure the hypothesized dimensions of CCC, was administered along with the collection of demographic data, to a large sample of military personnel from various branches of service and the collected data were analyzed.

Based upon the results of foregoing analysis, a preliminary theoretical model of CCC is presented (*see* Appendix G, Figure 1). In this model, it is hypothesized that certain individual *Baseline Characteristics* (e.g., Tolerance of Uncertainty and Ethnocultural Empathy) allow for a set of highly interrelated *Core Cross-Cultural Competencies* to emerge (e.g., Cognitive Flexibility & Openness; the Willingness to Engage; Self-Efficacy; and Emotional Regulation), all of which contribute to various *Mission-Specific Competencies* (e.g., Perspective-Taking; Prediction; Interpersonal Skills; and Relationship Building) which, in turn, lead directly to *Mission Success*.

The final Cross-Cultural Competence Inventory therefore consists of 47 items (*see* Appendix H). Six reliable scales to assess CCC were identified, namely: (1) Willingness to Engage (*8 items*); (2) Cognitive Flexibility & Openness (*12 items*); (3) Emotional Regulation (*4 items*); (4) Tolerance of Uncertainty (*7 items*); (5) Self-Efficacy (*8 items*); and (6) Ethnocultural Empathy (*8 items*).

Limitations

Demonstrating discriminant validity may be difficult due to the high intercorrelations among the scale dimensions. Likewise, preliminary exploratory factor analysis results also suggest a general factor of cross-cultural competence. This principal factor involves the core competencies of willingness to engage, cognitive flexibility and openness to new experiences, ethnocultural empathy, and the ability to regulate one's emotions. Therefore, though this is only speculation at this point, those individuals who would score high on this "general factor" might do well across several types of cross-cultural interactions, especially those requiring diplomacy, a level head, an open mind, an ability to empathize with a person from another culture, and flexibility in thought and action. The second largest factor involved the tolerance of uncertainty, another baseline characteristic, which is uncorrelated with ethnocultural empathy. It is, however, moderately related to the other core competencies (though not as highly as empathy). This indicates that those scoring high in this factor would likely be more comfortable in ambiguous situations or in situations requiring that they seek solutions beyond the initial or obvious ones. They may engage in more types of adaptable cognitions and behaviors as leaders, and would do well in cross-cultural situations that require the ability to tolerate ambiguity in situations marked by uncertainty in predicting possible outcomes. However, this is only speculation at this point and further data collection and confirmatory factor analysis are advised.

Future Directions

As noted above, in order to test the theoretical model of CCC presented in Figure 1, confirmatory factor analysis (CFA) should be undertaken. CFA is a type of factor analysis performed to confirm a hypothesized factor structure using a measurement model on the basis of the pattern of item-latent factor relationships. A construct validation approach would also entail administering the final instrument (*see* Appendix H) to a new sample of participants and baseline demographic data collected, whereupon any remaining unreliable items and/or scales will be eliminated. Additionally, if feasible, other assessment tools could be administered along with the final CCCI, and then the convergent-discriminant pattern of correlations examined. This would be accomplished by demonstrating that the internal consistency among items that assess the same dimension should be higher than between items that assess different dimensions, as well as showing how different dimensions correlate differently with their hypothesized predictors or antecedents. For example, ethnocultural empathy should show higher correlations with the dimension of perspective taking than with the willingness to engage.

Gathering criterion-related validity evidence requires the correlation of the CCCI with various external criteria that, in theory, should be related to the constructs that are being measured by the six scales. Specifically, criterion-based situational judgment test items could be written using scenarios gleaned from critical incident and CTA interviews to assess the mission-specific competencies. A relationship (via statistical significance testing or establishing confidence intervals) between the results of the CCCI (predictor) and the SJT battery (criteria) will thus provide evidence of criterion-related validity. Incremental validity of CCCI over existing self-report measures of CCC (e.g., CQ, etc.) may also be demonstrated (via multiple regression) for predicting the mission-specific competencies.

Finally, in order to predict actual performance in the field, evidence for criterion-related validity could be shown by demonstrating a relationship (via statistical significance testing or establishing confidence intervals) between the results of the SJT battery (predictor) and supervisory and/or peer ratings of the certain CCC outcome performance dimensions (criteria).

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Appendix A

CCCI: Initial Item Pool

Ethnocultural Empathy (Wang et al., 2003):

1. When dealing with people of a different ethnicity or culture, understanding their viewpoint is a top priority for me.
2. It is easy for me to understand what it would feel like to be a person from a different culture.
3. I feel offended when I hear people make jokes about or use slang words to describe people from other ethnic backgrounds or cultures.
4. I rarely think about the impact of an ethnic joke on people who are targeted. *(To be reverse-scored)*
5. I feel sorry for people of other ethnicities or cultures if I think they are being taken advantage of.
6. I share the anger of those who face injustice because of ethnic or cultural differences.
7. It is difficult for me to put myself in the shoes of someone from another culture. *(To be reverse-scored)*
8. When making a group decision, I think that considering each person's perspective is more important than making a decision that's completely fair and impartial.
9. I feel irritated when people of different ethnic or cultural backgrounds speak their native language around me. *(To be reverse-scored)*
10. I feel impatient when communicating with people of different ethnicities or cultures than mine, regardless of how well they can communicate. *(To be reverse-scored)*
11. I think the best decisions are made when we can remove any personal concerns, because emotions lead to biased decisions. *(To be reverse-scored)*
12. I try to act based on the truth of a situation, not what others might want to believe or wish were true. *(To be reverse-scored)*
13. Making sure that everyone gets along in my team is one of my priorities.
14. I try to look for a logical explanation or solution to almost every problem I encounter. *(To be reverse-scored)*
15. I don't understand why people of different ethnicities or cultures feel they have to cling to their own values and traditions. *(To be reverse-scored)*

Self-Efficacy (Ang, Van Dyne, Koh, & Ng, 2004; Pintrich & De Groot, 1990; Schwarzer & Jerusalem, 1995)

1. I am confident that I will be able to socialize with people from different cultures.
2. I am unsure of my abilities to deal with the local population if placed in a different culture. *(To be reverse-scored)*

3. I am sure I would be able to handle all of the stresses of adjusting to a culture that is new to me.
4. Having to live in a culture that is drastically different from my own would be a problem for me. *(To be reverse-scored)*
5. I am confident that I can get used to the unusual conditions of living in another culture.
6. I am uncertain how much I would be able to influence the local population of another culture. *(To be reverse-scored)*
7. I expect I would get along very well with people from other cultures.
8. I am confident of my ability to communicate well with all kinds of people from all kinds of ethnic and cultural backgrounds.
9. I can always manage to solve difficult problems if I try hard enough.
10. It is easy for me to stick to my aims and accomplish my goals.
11. I am confident that I could deal efficiently with unexpected events.
12. I can solve most problems if I invest the necessary effort.
13. I can remain calm when facing difficulties because I can rely on my coping abilities.
14. When I am confronted with a problem, I can usually find several solutions.
15. If I am in trouble, I find it difficult to think of something to do. *(To be reverse-scored)*
16. No matter what comes my way, I'm usually able to handle it.

Willingness to Engage (McCroskey, 1992; Ross, 2008):

1. I would enjoy visiting other cultures that are unfamiliar to me.
2. I would enjoy interacting with people from different cultures.
3. Traveling to other countries is something I would enjoy.
4. I seek opportunities to speak with individuals from other cultural or ethnic backgrounds about their experiences.
5. If I have a job to do with other people, I like to get to know them well.
6. A job is often successful because you understand the people you are working with well.
7. I spend just enough time with other people as I need to in order to get the job done. *(To be reverse-scored)*
8. I tend to get to know my neighbors well.
9. I can be more successful at my job if I understand what is important to other people.
10. Knowing others well is not important to my job. *(To be reverse-scored)*
11. I tend to start conversations with strangers like people in the check-out line at the store or beside me on an airplane.
12. If I see someone I know, I usually stop and talk to them.
13. If I see someone I know, I sometimes avoid speaking to them. *(To be reverse-scored)*

14. When I go to the doctor, I feel comfortable telling him/her everything s/he needs to known in order to accurately diagnose me.
15. I do not like giving presentations to a group of strangers. *(To be reverse-scored)*
16. If I have to wait in line, I often strike up a conversation with someone nearby.
17. I enjoy talking in a large meeting of friends and acquaintances.
18. I try to say as little as possible if confronted by a police officer. *(To be reverse-scored)*
19. In small groups of strangers, I tend to keep my own counsel. *(To be reverse-scored)*
20. I enjoy presenting to a group of friends.
21. In a large meeting of strangers, I usually remain pretty quiet. *(To be reverse-scored)*

Openness to New Experience (Webster & Kruglanski, 1994):

1. Once I find the right way to do something, I stick to it. *(To be reverse-scored)*
2. I enjoy coming up with new plans and new ideas.
3. I believe variety is the spice of life.
4. Our society's ideas of right and wrong may not be right for all people in the world.
5. I believe that it's better to stick to your ethics and principles than to be open-minded. *(To be reverse-scored)*
6. People should honor traditional family values and not question them. *(To be reverse-scored)*
7. I enjoy reflecting on why things are the way they are.
8. I am not interested in abstract ideas. *(To be reverse-scored)*
9. I do not enjoy spending time imagining possibilities. *(To be reverse-scored)*
10. Even after I've made up my mind about something, I am always eager to consider a different opinion.
11. I dislike questions which could be answered in many different ways. *(To be reverse-scored)*
12. I feel irritated when one person disagrees with what everyone else in a group believes. *(To be reverse-scored)*
13. When considering most conflict situations, I can usually see how both sides could be right.
14. When thinking about a problem, I consider as many different opinions on the issue as possible.
15. I prefer interacting with people whose opinions are very different from my own.
16. I always see many possible solutions to problems I face.
17. I do not usually consult many different options before forming my own view. *(To be reverse-scored)*

Emotional Self-Regulation (Gross & John, 2003):

1. When I want to feel less negative emotions (anger, frustration, or sadness), I change the way I'm thinking about the situation.
2. When I want to feel more positive emotions (happiness or amusement), I change the way I'm thinking about the situation.
3. It is difficult for me to suppress thoughts that interfere with what I need to do. *(To be reverse-scored)*
4. I can control my thoughts from distracting me from the task at hand.
5. When I worry about something, I cannot concentrate on an activity. *(To be reverse-scored)*
6. After an interruption, I don't have any problem resuming my concentrated style of working.
7. I have a whole bunch of thoughts and feelings that interfere with my ability to work in a focused way. *(To be reverse-scored)*
8. When I want to feel more positive emotion (happiness or amusement), I change what I'm thinking about.
9. When I want to feel less negative emotion (sadness, frustration, or anger), I change what I'm thinking about.
10. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
11. I control my emotions by changing the way I think about the situation I'm in.
12. When feeling stressed, I'm able to calm myself by thinking of other things.

Self-Monitoring (Ang, Van Dyne, Koh, & Ng, 2004; Snyder, 1974):

1. I find it difficult to imitate the behavior of other people. *(To be reverse-scored)*
2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs. *(To be reverse-scored)*
3. In meetings or discussions, I do not attempt to do or say things that others will like. *(To be reverse-scored)*
4. I can only argue for ideas which I already believe. *(To be reverse-scored)*
5. I can make impromptu speeches even on topics about which I have almost no information.
6. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.
7. I sometimes appear to others to be experiencing deeper emotions than I actually am.
8. In different situations and with different people, I often act like very different persons.
9. I am not particularly good at making other people like me. *(To be reverse-scored)*
10. Even if I am not enjoying myself, I often pretend to be having a good time.

11. I'm not always the person I appear to be.
12. I would not change my opinions (or the way I do things) in order to please someone else or win their favor. *(To be reverse-scored)*
13. I have trouble changing my behavior to suit different people and different situations. *(To be reverse-scored)*
14. If necessary, I am able to look anyone in the eye and tell a lie with a straight face.
15. I am able to fool people by being friendly when I really dislike them.
16. When I interact with people from other cultures or ethnic backgrounds, I show my appreciation of their cultural norms.
17. I change my verbal behavior (e.g., accent, tone) if a cross-cultural interaction requires it.
18. I would be able to change my non-verbal behaviors if dealing with those of other cultures or backgrounds.

Tolerance for Ambiguity (Webster & Kruglanski, 1994):

1. I don't like situations that are uncertain. *(To be reverse-scored)*
2. I feel uncomfortable when I don't understand the reason why an event occurred in my life. *(To be reverse-scored)*
3. When I am confused about an important issue, I feel very upset. *(To be reverse-scored)*
4. In most social conflicts, I can easily see which side is right and which is wrong. *(To be reverse-scored)*
5. I like to know what people are thinking all the time. *(To be reverse-scored)*
6. I dislike it when a person's statement could mean many different things. *(To be reverse-scored)*
7. It's annoying to listen to someone who cannot seem to make up his or her mind. *(To be reverse-scored)*
8. I feel uncomfortable when someone's meaning or intention is unclear to me. *(To be reverse-scored)*
9. I'd rather know bad news than stay in a state of uncertainty. *(To be reverse-scored)*

Low Need for Cognitive Closure (Webster & Kruglanski, 1994):

1. I think that having clear rules and order at work is essential for success. *(To be reverse-scored)*
2. I find that a well-ordered life with regular hours suits my temperament. *(To be reverse-scored)*
3. I hate to change my plans at the last minute. *(To be reverse-scored)*
4. My personal space is usually messy and disorganized.

5. I believe orderliness and organization are among the most important characteristics of a good student. *(To be reverse-scored)*
6. I think that I would learn best in a class that lacks clearly stated objectives and requirements.
7. I find that establishing a consistent routine enables me to enjoy life more. *(To be reverse-scored)*
8. I enjoy having a clear and structured mode of life. *(To be reverse-scored)*
9. I like to have a plan for everything and a place for everything. *(To be reverse-scored)*
10. I dislike the routine aspects of my work.
11. I like to have friends who are unpredictable.
12. I enjoy the uncertainty of going into a new situation without knowing what might happen.
13. When dining out, I like to go to places where I have been before so that I know what to expect. *(To be reverse-scored)*
14. I think it is fun to change my plans at the last moment.
15. I don't like to be with people who are capable of unexpected actions. *(To be reverse-scored)*
16. I prefer to socialize with familiar friends because I know what to expect from them. *(To be reverse-scored)*
17. I don't like to go into a situation without knowing what I can expect from it. *(To be reverse-scored)*
18. I dislike unpredictable situations. *(To be reverse-scored)*

Cognitive Flexibility (Ross, 2008; Webster & Kruglanski, 1994):

1. I would never describe myself as indecisive. *(To be reverse-scored)*
2. When I go shopping, I have no trouble deciding exactly what it is I want. *(To be reverse-scored)*
3. When faced with a problem I usually see the one best solution very quickly. *(To be reverse-scored)*
4. I usually make important decisions quickly and confidently. *(To be reverse-scored)*
5. It takes me time to make important decisions as I see all sides of a situation.
6. When trying to solve a problem I often can foresee several long-term consequences of my actions.
7. If my approach to a problem isn’t working with someone, I can easily change my tactics.
8. I prefer to stick to doing something the way it’s always worked in the past. *(To be reverse-scored)*
9. I know how to gain insight from another person to get a job done.
10. I believe that there is a right way and a wrong way to do most things. *(To be reverse-scored)*

11. I am able to work well with others to help them find better ways to accomplish their tasks.
12. If there is already a good way of addressing a problem, it's a waste of time to consider alternatives. *(To be reverse-scored)*
13. I don't bother discussing alternative solutions with others if I've already made up my mind. *(To be reverse-scored)*
14. If there is already a process in my organization that works well, then it should work well in other organizations. *(To be reverse-scored)*
15. When working with someone from another culture, it's important to change my behavior if we aren't successful.
16. I have different ways of working with different people.
17. People have different methods that can be equally successful in solving a problem.
18. Sometimes you have to bend the rules to do the right thing.

Lie Scale (Webster & Kruglanski, 1994)

1. I have never been late for an appointment.
2. I have never known someone I did not like.
3. I believe that one should never engage in leisure activities.
4. I feel that there is no such thing as an honest mistake.
5. I have never hurt another person's feelings.

Scoring (Webster & Kruglanski, 1994):

1. Reverse code items that are reverse-scored, so that higher sums indicate that respondent possesses a greater amount of the attribute.
2. Sum each participant's responses except for the lie scale items.
3. Sum the lie scale items.
4. Remove the participant's answers if the lie score is greater than 15 (using 1 to 6 rating scale)

Appendix B

CCCI Prototype

Cross-Cultural Competence Survey

Please read this carefully before you decide to participate in this study.

Your participation involves completing an online survey. The purpose of this survey is to determine how certain individual difference characteristics are related to cross-cultural competence.

All of your responses will be kept strictly confidential. Your answers will be anonymous and your name will not be collected and/or associated with any of the research materials.

Your participation in this study is voluntary. This survey will take approximately 20-30 minutes to complete. You may refuse to participate in this study. Non-participation will not negatively impact you in any way. You are free to withdraw your consent and discontinue participation in the study at any time.

If you have any questions about this research, you may contact Carol A. Thornson at cthornson@gmail.com.

Questions or concerns about research participants' rights may be directed to the Institutional Review Board, _____. The telephone number is _____.

By completing this online survey, I am providing my informed consent.

INSTRUCTIONS

This survey should take you no longer than 20-30 minutes to complete in its entirety.

You will read a series of statements. For each statement, please indicate your level of agreement with that statement, from **1** being that you *strongly disagree* with the statement, to **6** being that you *strongly agree* with the statement:

1 *= strongly disagree*

2 **=** *moderately disagree*

3 **=** *slightly disagree*

4 **=** *slightly agree*

5 *= moderately agree*

6 *= strongly agree*

Try not to spend too much time on any one question, as your *first* answer is usually your *best* answer. It may seem that some of the questions are irrelevant to measuring attributes related to cross-cultural competence. However, they are all important to our study and each item has a specific purpose. Therefore, it is imperative that you please read each item and answer as *accurately* and as *honestly* as you can. There is no right or wrong answer to any item.

We appreciate your participation and thank you for your valuable time.

1. I think that having clear rules and order at work is essential for success.
2. I can be more successful at my job if I understand what is important to other people.
3. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs.
4. In different situations and with different people, I often act like very different persons.
5. I enjoy having a clear and structured mode of life.
6. When I am confronted with a problem, I can usually find several solutions.
7. In small groups of strangers, I tend to keep my own counsel.
8. I am not interested in abstract ideas.
9. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
10. I am able to work well with others to help them find better ways to accomplish their tasks.
11. People should honor traditional family values and not question them.
12. I hate to change my plans at the last minute.

13. I am not particularly good at making other people like me.
14. I am uncertain how much I would be able to influence the local population of another culture.
15. When faced with a problem, I usually see the one best solution very quickly.
16. I try to look for a logical explanation or solution to almost every problem I encounter.
17. I sometimes appear to others to be experiencing deeper emotions than I actually am.
18. I expect I would get along very well with people from other cultures.
19. Knowing others well is not important to my job.
20. I enjoy the uncertainty of going into a new situation without knowing what might happen.
21. I am able to fool people by being friendly when I really dislike them.
22. When dealing with people of a different ethnicity or culture, understanding their viewpoint is a top priority for me.
23. When I am confused about an important issue, I feel very upset.
24. I feel sorry for people of other ethnicities or cultures if I think they are being taken advantage of.
25. I dislike questions which could be answered in many different ways.
26. I find it difficult to imitate the behavior of other people.
27. If I have to wait in line, I often strike up a conversation with someone nearby.
28. I think that I would learn best in a class that lacks clearly stated objectives and requirements.
29. When working with someone from another culture, it’s important to change my behavior if we aren’t successful.
30. My personal space is usually messy and disorganized.
31. I spend just enough time with other people as I need to in order to get the job done.
32. I try to say as little as possible if confronted by a police officer.
33. I'd rather know bad news than stay in a state of uncertainty.
34. When I want to feel more positive emotions (happiness or amusement), I change the way I'm thinking about the situation.
35. I am confident that I can get used to the unusual conditions of living in another culture.
36. Even if I am not enjoying myself, I often pretend to be having a good time.

37. I would not change my opinions (or the way I do things) in order to please someone else or win their favor.
38. If I am in trouble, I find it difficult to think of something to do.
39. I dislike it when a person's statement could mean many different things.
40. I feel offended when I hear people make jokes about or use slang words to describe people from other ethnic backgrounds or cultures.
41. I feel that there is no such thing as an honest mistake.
42. I believe variety is the spice of life.
43. It is difficult for me to suppress thoughts that interfere with what I need to do.
44. If there is already a process in my organization that works well, then it should work well in other organizations.
45. Sometimes you have to bend the rules to do the right thing.
46. I don't like to be with people who are capable of unexpected actions.
47. A job is often successful because you understand the people you are working with well.
48. I feel impatient when communicating with people of different ethnicities or cultures, regardless of how well they can communicate.
49. I would enjoy interacting with people from different cultures.
50. I don't like situations that are uncertain.
51. When I go to the doctor, I feel comfortable telling him/her everything s/he needs to known in order to accurately diagnose me.
52. I rarely think about the impact of an ethnic joke on people who are targeted.
53. People have different methods that can be equally successful in solving a problem.
54. When dining out, I like to go to places where I have been before so that I know what to expect.
55. I dislike the routine aspects of my work.
56. When thinking about a problem, I consider as many different opinions on the issue as possible.
57. I can only argue for ideas which I already believe.
58. I dislike unpredictable situations.
59. When making a group decision, I think that considering each person's perspective is more important than making a decision that's completely fair and impartial.

60. If there is already a good way of addressing a problem, it’s a waste of time to consider alternatives.
61. I enjoy coming up with new plans and new ideas.
62. I have never hurt another person's feelings.
63. When considering most conflict situations, I can usually see how both sides could be right.
64. I don't understand why people of different ethnicities or cultures feel they have to cling to their own values and traditions.
65. I feel sorry for people of other ethnicities or cultures if I think they are being taken advantage of.
66. I find that a well-ordered life with regular hours suits my temperament.
67. I think the best decisions are made when we can remove any personal concerns, because emotions lead to biased decisions.
68. I am sure I would be able to handle all of the stresses of adjusting to a culture that is new to me.
69. I like to know what people are thinking all the time.
70. I could change my verbal behavior (e.g., accent, tone) if a cross-cultural interaction required it.
71. I don’t bother discussing alternative solutions with others if I’ve already made up my mind.
72. I am confident that I will be able to socialize with people from different cultures.
73. I do not like giving presentations to a group of strangers.
74. If I see someone I know, I sometimes avoid speaking to them.
75. When trying to solve a problem I often can foresee several long-term consequences of my actions.
76. I have never known someone I did not like.
77. I enjoy reflecting on why things are the way they are.
78. I usually make important decisions quickly and confidently.
79. After an interruption, I don't have any problem resuming my concentrated style of working.
80. I am unsure of my abilities to deal with the local population if placed in a different culture.
81. I believe that it's better to stick to your ethics and principles than to be open-minded.
82. If I have a job to do with other people, I like to get to know them well.

83. I do not usually consult many different options before forming my own view.
84. Having to live in a culture that is drastically different from my own would be a problem for me.
85. When I interact with people from other cultures or ethnic backgrounds, I show my appreciation of their cultural norms.
86. I believe that one should never engage in leisure activities.
87. In most social conflicts, I can easily see which side is right and which is wrong.
88. I try to act based on the truth of a situation, not what others might want to believe or wish were true.
89. I can solve most problems if I invest the necessary effort.
90. I would enjoy visiting other cultures that are unfamiliar to me.
91. When feeling stressed, I'm able to calm myself by thinking of other things.
92. It's annoying to listen to someone who cannot seem to make up his or her mind.
93. I am confident of my ability to communicate well with all kinds of people from all kinds of ethnic and cultural backgrounds.
94. I can control my thoughts from distracting me from the task at hand.
95. I feel irritated when people of different ethnic or cultural backgrounds speak their native language around me.
96. I like to have a plan for everything and a place for everything.
97. I prefer interacting with people whose opinions are very different from my own.
98. When I worry about something, I cannot concentrate on an activity.
99. I have trouble changing my behavior to suit different people and different situations.
100. When I want to feel more positive emotions (happiness or amusement), I change what I'm thinking about.
101. I always see many possible solutions to problems I face.
102. I can always manage to solve difficult problems if I try hard enough.
103. No matter what comes my way, I'm usually able to handle it.
104. If I see someone I know, I usually stop and talk to them.
105. When I want to feel less negative emotion (sadness, frustration, or anger), I change what I'm thinking about.

106. I have never been late for an appointment.
107. It is difficult for me to put myself in the shoes of someone from another culture.
108. Making sure that everyone gets along in my team is one of my priorities.
109. It is easy for me to understand what it would feel like to be a person from a different culture.
110. I know how to gain insight from another person to get a job done.
111. I think it is fun to change my plans at the last moment.
112. Even after I've made up my mind about something, I am always eager to consider a different opinion.
113. I like to have friends who are unpredictable.
114. I believe that there is a right way and a wrong way to do most things.
115. In a large meeting of strangers, I usually remain pretty quiet.
116. I have a whole bunch of thoughts and feelings that interfere with my ability to work in a focused way.
117. In meetings or discussions, I do not attempt to do or say things that others will like.
118. Traveling to other countries is something I would enjoy.
119. I enjoy presenting to a group of friends.
120. When I want to feel less negative emotions (anger, frustration, or sadness), I change the way I'm thinking about the situation.
121. I tend to get to know my neighbors well.
122. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.
123. Our society's ideas of right and wrong may not be right for all people in the world.
124. It takes me time to make important decisions as I see all sides of a situation.
125. I would be able to change my non-verbal behaviors if dealing with those of other cultures or backgrounds.
126. I prefer to stick to doing something the way it’s always worked in the past.
127. I would never describe myself as indecisive.
128. I do not enjoy spending time imagining possibilities.
129. I have different ways of working with different people.

130. I prefer to socialize with familiar friends because I know what to expect from them.
131. I can make impromptu speeches even on topics about which I have almost no information.
132. If necessary, I am able to look anyone in the eye and tell a lie with a straight face.
133. I don't like to go into a situation without knowing what I can expect from it.
134. I seek opportunities to speak with individuals from other cultural or ethnic backgrounds about their experiences.
135. I tend to start conversations with strangers like people in the check-out line at the store or beside me on an airplane.
136. I find that establishing a consistent routine enables me to enjoy life more.
137. I enjoy talking in a large meeting of friends and acquaintances.
138. I feel irritated when one person disagrees with what everyone else in a group believes.
139. I feel uncomfortable when I don't understand the reason why an event occurred in my life.
140. I feel uncomfortable when someone's meaning or intention is unclear to me.
141. If my approach to a problem isn’t working with someone, I can easily change my tactics.
142. When I go shopping, I have no trouble deciding exactly what it is I want.
143. I'm not always the person I appear to be.
144. I believe orderliness and organization are among the most important characteristics of a good student.
145. It is easy for me to stick to my aims and accomplish my goals.
146. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
147. I can always manage to solve difficult problems if I try hard enough.
148. I can solve most problems if I invest the necessary effort.
149. In a large meeting of strangers, I usually remain pretty quiet.

Demographics

The information provided below WILL NOT be used to identify you, but is used by a computer to identify GROUPS of people (e.g., male, female, Army, Navy, etc.). YOUR ACCURACY IS EXTREMELY IMPORTANT TO OUR RESEARCH. Thank you for your care in answering the following.

1. My age is:

    1 = 18-20

    2 = 21-24

    3 = 25-29

    4 = 30-35

    5 = 36-40

    6 = 40+

2. I am:

    1 = Male

    2 = Female

3. My branch of service is:

    1 = Air Force

    2 = Army

    3 = Coast Guard

    4 = Marine Corps

    5 = Navy

    6 = Other military service

4. I am a(n):

    1 = Military Officer

    2 = Warrant Officer

    3 = Enlisted Member

5. My pay grade is (e.g., E4-5, O4-5):

    1 = 1-3

    2 = 4-6

    3 = 7-8

4 = 9-10

5 = 11-13

6 = 14-15

6. I am a(n):

1 = Active component member (including Coast Guard)

2 = Traditional guardsman

3 = Guardsman on active duty

4 = Traditional reservist

5 = Reservist on active duty

7. My time in service, in years, is:

1 = 0-4

2 = 5-8

3 = 9-12

4 = 13-16

5 = 16+

8. I have been deployed ____ times over the last FIVE years. (If never deployed, please enter 0.)

[If 0 is entered, it skips the following items. If 1, it shows the following two items]

9. Length of time of most recent deployment = _____ MONTHS

10. During this deployment, my job required that I interact and/or form relationships with local nationals:

1 = Not at all

2 = Very little

3 = A moderate amount

4 = A fair amount

5 = A great deal

6 = It was essential to my job

[If more than 1 deployment, the following 2 items come up, and repeat as necessary]

11. Length of time of *next* most recent deployment = ____ MONTHS

12. During this deployment, my job required that I interact and/or form relationships with local nationals:

1 = Not at all

2 = Very little

3 = A moderate amount

4 = A fair amount

13. Please estimate the number of hours of *cultural awareness training* (e.g., online, classroom, etc.) that you have received from the military during your career: _____ HOURS

14. If you were deployed, please rate how effective you think the training was in preparing you for your assignment:

1 = Not at all effective

2 = Minimally effective

3 = Moderately effective

4 = Highly effective

5 = Very highly effective (essential)

This concludes our survey. Thank you for your time.

Appendix C

Table 1

Intercorrelations of Demographic Factors.

Demographic Factors	1	2	3	4	5	6	7
1. Age Category[a]	--						
2. Gender[b]	.10*	--					
3. Average Level of Interactions[c]	-.06	-.05	--				
4. Total Months Deployed	-.02	-.18**	.19**	--			
5. Pay Grade[d]	.53**	.00	-.05	-.06*	--		
6. Years of Military Service	.72**	-.03	-.10	.09*	.48*	--	
7. Branch of Service[e]	-.16**	-.06	-.14**	-.24**	-.03	-.19**	--

[a] (18–20) = 1, (21–24) = 2, (25–29) = 3, (30-35) = 4, (36-40) = 5, (40+) = 6.

[b] Male=1, Female=2.

[c] Not at all=1, Very little=2, A moderate amount=3, A fair amount=4, A great deal=5, It was essential to my job=6.

[d] (1-3)=1, (4-6)=2, (7-8)=3, (9-10)=4, (11-13)=5, (14-15)=6.

[e] (0-4)=1, (5-8)=2, (9-12)=3, (13-16)=4, (16+)=5.

[f] Air Force=1, Army=2, Coast Guard=3, Marine Corps=4, Navy=5, Other military service=6.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tail

Appendix D

Table 2

Intercorrelations of Scale Dimensions.

Scale Dimension	1	2	3	4	5	6
1. Cognitive Flexibility/Openness	--					
2. Willingness to Engage	. 67**	--				
3. Emotional Regulation	.53**	.50**	--			
4. Tolerance of Uncertainty	-.39**	-.25**	-.28**	--		
5. Self-Efficacy	.74**	.71**	.52**	-.29**	--	
6. Ethnocultural Empathy	.46**	.52**	.35**	-.09*	.48**	--

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix E

Table 3

Scale Means, Standard Deviations, and Internal Consistency Reliabilities

Scale Dimension	Scale Mean	Standard Deviation	Cronbach's Alpha
Willingness to Engage *(8 items)*	4.63	.85	.82
Cognitive Flexibility & Openness *(12 items)*	4.74	.65	.83
Emotional Regulation *(4 items)*	4.41	1.01	.86
Tolerance of Uncertainty *(7 items)*	2.82	.78	.74
Self Efficacy *(8 items)*	4.94	.78	.86
Ethnocultural Empathy *(8 items)*	4.46	.79	.69

Appendix F

Table 4

Correlations of Scales with Demographics

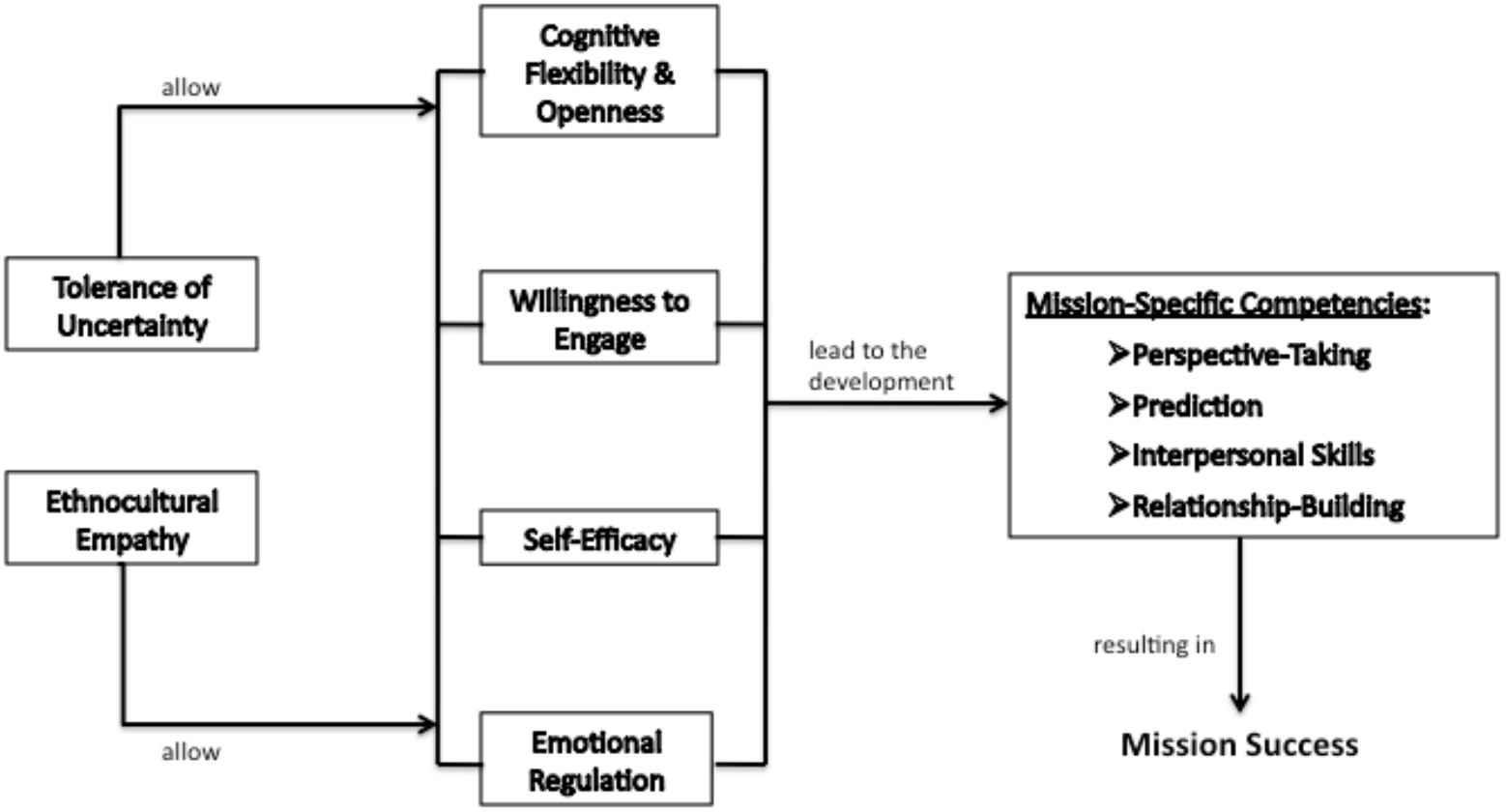
	Yrs of Service[a]	Pay Grade[b]	Age Cat[c]	Branch of Service[d]	Gender[e]	5-year Deploymt History	Months Deployed	Interactions with Locals[f]	Cultural Training	Training Effectiveness[g]
Willingness to Engage	.16**	.04	.16**	.07	- .02	.06	- .28	.10	.03	.17**
Cognitive Flexibility & Openness	.08	.00	.07	.03	- .08*	.04	.01	.08	.02	.24**
Emotional Regulation	.12**	.04	.14**	.01	.07	.05	- .01	.01	- .02	.13**
Tolerance of Uncertainty	- .09*	.00	- .05	-.07	.07	-.07	.03	.02	.03	-.14**
Self-Efficacy	.13**	.06	.13**	.03	- .08*	.01	- .01	.09	.03	.24**
Ethnocultural Empathy	.21**	.10*	.25**	.01	.07	.02	- .05	.06	.00	.12**

[a] (0-4)=1, (5-8)=2, (9-12)=3, (13-16)=4, (16+)=5.
[b] (1-3)=1, (4-6)=2, (7-8)=3, (9-10)=4, (11-13)=5, (14-15)=6.
[c] (18–20)=1, (21–24)=2, (25–29)=3, (30-35)=4, (36-40)=5, (40+)=6.
[d] Air Force=1, Army=2, Coast Guard=3, Marine Corps=4, Navy=5, Other military service=6.
[e] Male=1, Female=2.
[f] Not at all=1, Very little=2, A moderate amount=3, A fair amount=4, A great deal=5, It was essential to my job=6.
[g] Not at all effective=1, Minimally effective=2, Moderately effective=3, Highly effective=4, Very highly effective (essential)=5.
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Appendix G

Figure 1

Theoretical Model of Cross-Cultural Competence



Appendix H

Cross-Cultural Competence Inventory

Willingness to Engage

1. I would enjoy visiting other cultures that are unfamiliar to me.
2. If I see someone I know, I usually stop and talk to them.
3. Traveling to other countries is something I would enjoy.
4. I enjoy presenting to a group of friends.
5. I seek opportunities to speak with individuals from other cultural or ethnic backgrounds about their experiences.
6. I tend to start conversations with strangers like people in the check-out line at the store or beside me on an airplane.
7. I enjoy talking in a large meeting of friends and acquaintances.
8. I would enjoy interacting with people from different cultures.

Cognitive Flexibility & Openness

1. I know how to gain insight from another person to get a job done.
2. If my approach to a problem isn't working with someone, I can easily change my tactics.
3. I have different ways of working with different people.
4. People have different methods that can be equally successful in solving a problem.
5. When trying to solve a problem I often can foresee several long-term consequences of my actions.
6. I always see many possible solutions to problems I face.
7. When thinking about a problem, I consider as many different opinions on the issue as possible.
8. I enjoy coming up with new plans and new ideas.
9. Our society's ideas of right and wrong may not be right for all people in the world.
10. Even after I've made up my mind about something, I am always eager to consider a different opinion.
11. I believe variety is the spice of life.
12. When considering most conflict situations, I can usually see how both sides could be right.

Emotional Regulation

1. When I want to feel less negative emotions (anger, frustration, or sadness), I change the way I'm thinking about the situation.
2. I control my emotions by changing the way I think about the situation I'm in.
3. When I want to feel more positive emotions (happiness or amusement), I change what I'm thinking about.
4. When I want to feel less negative emotion (sadness, frustration, or anger), I change what I'm thinking about.

Tolerance of Uncertainty

1. I like to have a plan for everything and a place for everything. *(To be reverse-scored)*
2. I prefer to socialize with familiar friends because I know what to expect from them. *(To be reverse-scored)*
3. I don't like to go into a situation without knowing what I can expect from it. *(To be reverse-scored)*
4. I find that establishing a consistent routine enables me to enjoy life more. *(To be reverse-scored)*
5. I believe orderliness and organization are among the most important characteristics of a good student. *(To be reverse-scored)*
6. I feel uncomfortable when I don't understand the reason why an event occurred in my life. *(To be reverse-scored)*
7. I feel uncomfortable when someone's meaning or intention is unclear to me. *(To be reverse-scored)*

Self-Efficacy

1. I can always manage to solve difficult problems if I try hard enough.
2. No matter what comes my way, I'm usually able to handle it.
3. I am confident that I could deal efficiently with unexpected events.
4. It is easy for me to stick to my aims and accomplish my goals.
5. I can remain calm when facing difficulties because I can rely on my coping abilities.
6. I am confident that I can get used to the unusual conditions of living in another culture.
7. I am sure I would be able to handle all of the stresses of adjusting to a culture that is new to me.

8. I am confident that I will be able to socialize with people from different cultures.

Ethnocultural Empathy

1. I feel irritated when people of different ethnic or cultural backgrounds speak their native language around me. *(To be reverse-scored)*
2. It is difficult for me to put myself in the shoes of someone from another culture. *(To be reverse-scored)*
3. It is easy for me to understand what it would feel like to be a person from a different culture.
4. When dealing with people of a different ethnicity or culture, understanding their viewpoint is a top priority for me.
5. I feel sorry for people of other ethnicities or cultures if I think they are being taken advantage of.
6. I feel offended when I hear people make jokes about or use slang words to describe people from other ethnic backgrounds or cultures.
7. I feel impatient when communicating with people of different ethnicities or cultures, regardless of how well they can communicate. *(To be reverse-scored)*
8. I rarely think about the impact of an ethnic joke on people who are targeted. *(To be reverse-scored)*

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