

seems to imply. Meanwhile, other sociologists such as Sharon Zukin have been critical of what they see as an overemphasis on embodied forms of cultural capital used in the pursuit of status attainment in lieu of an approach that highlights the sorts of cultural capital that are invested in culture industries and that have macro-level effects on the political economy of local markets. Some economists have begun to pick up the concept and are using it to modify traditional economic models to explain exchanges of material goods that have cultural worth.

—John W. Mohr

See also Institutional Theory; Practice; Rational Choice Theory; Social Capital

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CULTURAL INTELLIGENCE

Cultural intelligence (CQ) is a person's capability to function effectively in situations characterized by cultural diversity. Cultural intelligence is a four-factor,

multidimensional construct. Those with high CQ have four key capabilities: They are able to anticipate what will happen in cross-cultural situations; they have a wide understanding of multicultural situations; they are confident of their capabilities and are intrinsically interested in experiencing culturally diverse settings; and finally, they are able to vary their verbal and non-verbal behaviors in response to cultural characteristics of the situation.

CQ is a critical individual capability with important personal, interpersonal, and work-related implications given the wide-ranging effects of globalization and diversity throughout most of the world. In work settings, CQ has direct relevance to expatriates, members of global project teams, professionals with global contacts, marketing and sales managers, worldwide sourcing specialists, cross-functional project managers, and multicultural domestic team members.

Conceptual Overview

Contemporary conceptualizations of intelligence emphasize that it is more than academic intelligence or cognitive ability, as noted by Robert Sternberg and Douglas Detterman in 1986. For example, researchers and managers recognize the importance of nonacademic intelligence such as interpersonal intelligence, emotional intelligence, and social intelligence. Like these other forms of intelligence, CQ complements IQ (cognitive ability) by focusing on specific capabilities that are important for high-quality personal relationships and effectiveness in culturally diverse settings. Cultural intelligence provides insights about individual capabilities to cope with and flourish in multicultural situations, engage in intercultural interactions, and perform effectively in culturally diverse social and work groups.

Sternberg and Detterman integrated the numerous views of intelligence and proposed four complementary ways of conceptualizing individual-level intelligence based on different loci: (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 a person's capability to channel energy toward acquiring knowledge as a locus of intelligence; and (d) behavioral intelligence focuses on individual capabilities at the action level (behavior). This framework is noteworthy because it recognizes multiple forms and loci of intelligence within an individual and moves beyond the more traditional focus on linguistic, logical-mathematical, and spatial intelligence. It complements Howard Gardner's ideas on aspects of intelligence that are related to self-regulation and interpersonal relations.

Drawing on this perspective of multiple loci of intelligence, P. Christopher Earley and Soon Ang conceptualized cultural intelligence as a multifactor construct with mental (metacognitive and cognitive), motivational, and behavioral components. Metacognitive CQ reflects the mental capability to acquire and understand cultural knowledge. Cognitive CQ reflects general knowledge and knowledge structures about culture. Motivational CQ reflects individual capability to direct energy toward learning about and functioning in intercultural situations. Behavioral CQ reflects individual capability to exhibit appropriate verbal and nonverbal actions in culturally diverse interactions.

CQ is an individual difference capability. Although CQ is influenced by stable personality characteristics (such as extroversion and openness to experience), CQ is not an aspect of personality. CQ is also different from a person's values. While personality and values are strongly influenced by early socialization experiences, CQ is more state-like and fluid. It is an individual capability that develops over time based on ongoing experiences, education, training, and exposure to multicultural and international situations.

CQ is a specific individual difference because it focuses on culturally relevant capabilities. It is more specific than broad individual differences such as general cognitive ability and personality. However, CQ is not specific to a particular culture (e.g., CQ does not focus on the capability to function effectively in France or Japan or any other specific culture). In sum, CQ is a malleable individual capability that evolves over time and is specific to culturally diverse types of situations.

CQ is similar to, yet distinct from, two other forms of intelligence—general cognitive ability and emotional intelligence. General cognitive ability (the ability to learn) is an important individual difference that predicts performance across many jobs and settings. General cognitive ability, however, is not specific to certain contexts such as culturally diverse situations. In addition, it does not include behavioral or motivational aspects of intelligence. Emotional intelligence, or EI (the ability to deal with personal emotions), is similar to CQ because it goes beyond academic and mental intelligence. However, EI differs because it focuses on the general ability to manage emotions without consideration of cultural context.

CQ is also similar to, yet distinct from, other aspects of intercultural competence. It is similar since it focuses specifically on capabilities that are related to culture. However, CQ is different because it is explicitly grounded in the theory of multiple intelligences. Thus, it is based on a theoretically grounded, comprehensive, and coherent framework.

Four Factors of Cultural Intelligence

Metacognitive CQ is how a person makes sense of intercultural experiences. It reflects the processes individuals use to acquire and understand cultural knowledge. It occurs when people make judgments about their own thought processes and those of others. This includes strategizing before a multicultural encounter, checking assumptions during an encounter, and adjusting mental maps when actual experiences differ from expectations.

Cognitive CQ is a person's knowledge and understanding of how cultures are similar and how cultures are different. It reflects general knowledge structures and mental maps about cultures. It includes knowledge about economic and legal systems, norms for social interaction, religious beliefs, aesthetic values, and language in different cultures.

Motivational CQ is a person's capability in directing energy and effort toward learning about and functioning in cross-cultural situations. It includes a person's inherent interest in experiencing other cultures and interacting with people from different cultures. It also

includes the extrinsic value people place on culturally diverse interactions as well as their sense of confidence that they can function effectively in settings characterized by cultural diversity.

Behavioral CQ is a person's capability to adapt verbal and nonverbal behavior so it is appropriate for different cultures. It includes having a flexible repertoire of behavioral responses that are appropriate in a variety of situations and having the capability to modify both verbal and nonverbal behavior based on those who are involved in a specific interaction or in a particular setting.

Research Results on Cultural Intelligence

In global and multicultural settings, CQ capabilities are important for individuals in their personal life and in their work life as employees, peers, and managers. Understanding CQ helps to provide insights into the age-old sojourner problem of why some people thrive in culturally diverse settings, but others do not.

Although empirical research on cultural intelligence is relatively new, the initial results are strong and promising. To date, Ang, Linn Van Dyne, Christine Koh, and Kok-Yee Ng have demonstrated that CQ predicts cultural judgment and decision making (CJDM) and task performance. More important, CQ increases our understanding of these performance outcomes over and above demographic characteristics, general cognitive ability, emotional intelligence, and openness to experience. In other words, even after accounting for the effects of these other predictors, CQ further increases the ability to predict and understand decision-making performance. Those who have higher CQ are more effective at making decisions about intercultural situations. CQ also predicts adjustment in situations characterized by cultural diversity. As with CJDM, CQ adds explanatory power over and above demographic characteristics, general cognitive ability, emotional intelligence, and openness to experience. Those with higher CQ capabilities are more likely to feel adjusted in situations characterized by cultural diversity.

Examining the four factors of CQ further enhances the understanding of these relationships. More

specifically, metacognitive CQ and behavioral CQ predict task performance. Those who have the capability to make sense of intercultural experiences (such as making judgments about their own thought processes and those of others) perform at higher levels in multicultural work settings. The higher the metacognitive CQ, the higher the task performance. Similarly, those who have the capability to adapt their verbal and nonverbal behavior to fit specific cultural settings have a flexible repertoire of behavioral responses that enhances their task performance in culturally diverse settings. Thus, the higher the behavioral CQ, the higher the task performance. Finally, motivational CQ and behavioral CQ each predict three different forms of adjustment (see below). Those who are interested in experiencing other cultures and feel confident that they can interact with people who have different cultural backgrounds are better adjusted in culturally diverse situations. Likewise, those who have a broad repertoire of verbal and nonverbal behavioral capabilities feel better adjusted in situations characterized by cultural diversity. This pattern of relationships applies to the three types of adjustment typically included in international research: general adjustment, interaction adjustment, and work adjustment. The higher the motivational CQ, the higher the adjustment; similarly, the higher the behavioral CQ, the higher the adjustment.

In another empirical study that focused specifically on motivational CQ and expatriate adjustment, Klaus Templer, Cheryl Tay, and N. Anand Chandrasekar demonstrated that motivational CQ predicts all three types of adjustment, even after controlling for time in the host country and experience in international assignments. More important, they also demonstrated that motivational CQ adds incremental variance over and above cross-cultural interventions such as the realistic living conditions preview and the realistic job preview. These results highlight the importance and utility of motivational CQ for expatriates.

Overall, research has demonstrated that metacognitive CQ and cognitive CQ explain variance in CJDM, over and above demographics, general cognitive ability, EI, and openness to experience. In addition (controlling for demographics, EI, openness, cross-cultural adaptability, and rhetorical sensitivity), metacognitive

CQ and behavioral CQ predict task performance, while motivational CQ and behavioral CQ predict adjustment to new cultures. Finally, motivational CQ predicts three forms of expatriate adjustment over and above time in the host country, international experience, and realistic previews.

Given that CQ has implications for performance and adjustment, it is important to understand its antecedents (what predicts CQ). Ang, Van Dyne, and Koh have demonstrated that those with more experience interacting with people who have different cultural backgrounds have higher CQ. This includes each of the four factors of CQ (metacognitive, cognitive, motivational, and behavioral). Research also demonstrates that trait-like individual differences such as personality characteristics predict CQ (which is a state-like individual difference). Trait-like personality characteristics are not specific to a certain task or situation. Instead, in most cases they emerge during early childhood socialization and are relatively stable over time. In contrast, as noted by Albert Bandura, state-like individual differences (such as state anxiety or specific self-efficacy) are specific to certain situations or tasks and tend to be malleable over time. Consistent with this, research demonstrates that personality characteristics (more distal individual characteristics) predict CQ (more proximal individual characteristics). Specifically, examining the Big Five personality characteristics, they demonstrated relationships between conscientiousness (responsible, planful, persistent) and metacognitive CQ; agreeableness (likeable, good-natured, cooperative) and behavioral CQ; emotional stability (calm, secure, controlled) and behavioral CQ; and extraversion (sociable, assertive, active) and metacognitive CQ, cognitive CQ, and behavioral CQ. In addition, and most important, research demonstrates relationships between the Big Five personality characteristic of openness to experience (curious, imaginative, intellectual) and all four factors of CQ. This contrasts significantly with prior research, which has rarely demonstrated significant relationships for openness to experience.

Practical Implications of CQ

The realities of contemporary organizations suggest that CQ has important implications for individuals and

for organizations because globalization and diversity require employees to interact with people from a variety of backgrounds. This includes those in entry-level, middle management, and executive roles, which suggests the benefits of assessing CQ during the hiring and selection process. For example, those with low levels of cultural intelligence may pose a significant risk to organizations that operate in diverse, global business environments. CQ also has implications for training and development programs because enhancing global leadership capabilities can be an important source of competitive advantage. Global leaders not only must work effectively in dynamic and diverse contexts, but they also must actively model appropriate behaviors for others in the organization. In sum, incorporating CQ as a core competency by including it in hiring, selection, training, and development programs should have significant implications for organizations operating in today's global and diverse marketplace.

Critical Commentary and Future Directions

Initial reactions to the idea of cultural intelligence and the research on CQ have been positive. The construct, however, is still relatively new and there are many areas needing additional research and practical application.

First, although the idea of cultural intelligence was introduced and developed by scholars from different cultural backgrounds, and although the Ang and colleagues' 20-item, four-factor measure—the Cultural Intelligence Scale (CQS)—was developed, validated, and cross-validated in both Asian (Singapore) and Western (United States) cultural settings using expatriates and global professionals from diverse cultural backgrounds, future research and validation efforts are needed in other cultures and in other settings. For example, it will be interesting and important to examine CQ in Latin, Middle Eastern, East-Central European, Indian, and African settings. Perhaps the predictive validity relationships will be the same. Alternatively, differences in cultural values may cause differences in the importance of some aspects of CQ. For example, it is possible that CQ motivation is less important in predicting adjustment for those with more traditional cultural values. Alternatively, the

relationships may differ for those from polychronic cultures in which time is viewed as more circular than linear.

Second, it is also important that future research examine an expanded nomological (rules of reasoning) network of antecedents and outcomes of cultural intelligence. For outcomes, this could include contextual performance (behaviors that are not explicitly required by the job and contribute indirectly to the technical core—such as helping peers and making innovative suggestions). Perhaps those who are high in CQ are more capable of identifying discretionary contributions that would be viewed positively in a particular cultural context. Likewise, those who are high in CQ may be more capable of going beyond clearly specified core role responsibilities. Their high CQ may give them extra capacity to contribute positively to organizational goals, even in multicultural contexts.

Third, future research could also benefit from examining CQ as a selection tool for identifying those with higher capability to function effectively in culturally diverse situations. Assessment of CQ for selection could involve both self-ratings of CQ as well as observer ratings. In addition, future research could consider CQ as a predictor of successful performance for employees in a wide variety of jobs such as members of global project teams, professionals with global contacts, marketing and sales managers, worldwide sourcing specialists, cross-functional project managers, and multicultural domestic team members.

Fourth, additional research is also needed on what predicts CQ. For example, although the finding that openness to experience predicts all four factors of CQ is exciting and contrasts significantly with prior research on openness, research is needed on other predictors of CQ. One intriguing idea would be to examine CQ at different stages of exposure to other cultures. This could involve examination of the trajectory of CQ. For example, researchers do not know if CQ develops relatively rapidly or slowly when people are exposed to cross-cultural situations. Researchers also do not know if some types of exposure and contact have negative rather than positive effects on CQ. Given the results of contact theory research that demonstrates both positive and negative effects, this will be an important area that should be addressed by

CQ researchers. This also suggests the benefits of moderator research that examines the boundary conditions of when exposure is beneficial, what types of exposure are beneficial, and how much exposure is beneficial.

Fifth, as noted by Harry Triandis, another promising area for future research is investigating training techniques that enhance individual cultural intelligence. This could include training people to acknowledge their inherent ethnocentrism and then to integrate a broader range of information, look for multiple cues, try to understand the situation from the perspective of those in the culture, and suspend judgments when encountering new cultural contexts. Likewise, future research could consider the difference between successful intelligence (based on success within a particular sociocultural setting) compared to cultural intelligence (based on success in cross-cultural or culturally diverse settings), as noted by Sternberg and Elena Grigorenko.

Sixth, given the plethora of constructs already introduced and used in cross-cultural research, it will be important to assess the extent to which CQ increases researchers' understanding of individual attitudes, cognitions, and behaviors—over and above these other constructs. For example, it would be useful and interesting to examine CQ in conjunction with some of the more commonly used intercultural competence constructs such as the Cross-Cultural Adaptability Inventory, Cultural Shock Inventory, Culture—General Assimilator, Intercultural Development Inventory, Intercultural Sensitivity Inventory, Socio-Cultural Adaptation Scale, and Intercultural Adjustment Potential Scale.

Another area for future research is considering CQ at a higher level of analysis. One option would be to consider how CQ of individual team members influences overall performance of multicultural teams. It also would be useful to consider the meaning of group-level CQ, as well as its antecedents and consequences. For example, Maddy Janssens and Jeanne Brett proposed that culturally intelligent teams adopt a “fusion” model of collaboration that blends and also allows for the coexistence of unique differences. Such a fusion model would contrast significantly with the more traditional, dominant coalition model (which emphasizes one perspective) and the integration/identity model (which emphasizes cooperative collaboration).

In sum, although early reactions to the cultural intelligence construct have been positive and the initial conceptual and empirical research is promising, researchers still know relatively little about CQ. Ultimately, the value of the CQ construct will depend on the results of future research and whether employees and managers in organizations in a variety of cultural settings recognize the personal and organizational benefits of CQ.

—Linn Van Dyne, Soon Ang, and Tjai M. Nielsen

See also Communication; Cross-Cultural Management; Diversity; Emotional Intelligence; Globalization; Interactionism; Multiculturalism

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CULTURE

See ORGANIZATIONAL CULTURE

CYBERNETICS

The term *cybernetics* comes from the Greek word for steersman or the helmsman on a ship. Two other Greek words that have the same root mean govern and governor. Norbert Wiener, who first used the term in English, defined it as “control and communication in animal and machine.” The term was subsequently extended to social systems. Numerous other definitions have been proposed. Stafford Beer defined cybernetics as the “science of effective organization.” Gregory Bateson said cybernetics deals with form rather than substance. Gordon Pask defined cybernetics as “the art of manipulating defensible metaphors.” Organization theorists may regard cybernetics as a science of information processing, decision making, learning, adaptation, and organization, whether these occur in individuals, groups, organizations, nations, or machines.

Conceptual Overview

The field of cybernetics was created after World War II by a group of people who were discussing the topic of circular causal and feedback mechanisms in biological and social systems. A series of 10 conferences on this topic between 1946 and 1953 were supported by the Josiah Macy, Jr. Foundation. The field was named cybernetics after Norbert Wiener published his book titled *Cybernetics* in 1948. In his book, Wiener distinguished three revolutions in human society: The agricultural revolution was a transition from hunting and gathering to settled cultivation of the land. Consequences included the growth of cities, specialization in employment, and legal systems. The second revolution Wiener called the “first industrial revolution,” which was brought about by new forms of energy, such as steam and electricity. Consequences included larger, more integrated social units; further