18 Developing Cultural Intelligence

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It has become nearly axiomatic, that nations are globally interdependent and doing business across national and cultural borders is the norm rather than the exception. Global trade has increased steadily, and the total value of global imports and exports across nations now accounts for more than 50% of the world's GDP (World Bank, 2014). There are more than 82,000 multinational corporations (MNCs) with 810,000 subsidiaries distributed globally, with nearly 71 million foreign affiliates employed by these MNCs (UNCTAD, 2008; 2014). Even for employees whose jobs do not require cross-border interactions, the likelihood of interacting with culturally dissimilar co-workers continues to rise. There are 232 million international migrants – a 150% increase since 1990 (United Nations, 2013). The world has not only grown smaller, but has grown more interdependent. As a result, there is a critical business need for leaders and employees who can handle the complexities of intercultural interactions. This is where *cultural intelligence* (CQ) – the capability to function effectively in intercultural contexts (Earley & Ang, 2003) – plays an essential role.

CQ is a relative newcomer to the research on intercultural competence, but theory, research, and practice on CQ have evolved rapidly. From its theoretical beginnings as a unique form of intelligence (Earley & Ang, 2003), to the development of the cultural intelligence scale (CQS) with predictive validity (Ang et al., 2007), to the accumulation of dozens of studies documenting the benefits of CQ for intercultural adjustment, performance, leadership, team trust, and other outcomes (Ang, Van Dyne, & Rockstuhl, 2015), scholarship on CQ has flourished. Practitioners have also dedicated considerable attention to implementing the CQ framework in work and educational contexts, with the support of science-to-practice translations (Livermore, 2010; Livermore & Van Dyne, 2015) and teaching resources (e.g., The Cultural Intelligence Center, http://www.culturalq.com). An active global community of CQ facilitators has been certified by the Cultural Intelligence Center, and these facilitators are putting CQ principles into practice through training workshops, educational programs, and individual coaching.

This chapter focuses on the nexus of CQ research and CQ training. Some people have higher intercultural competence than others, but CQ is a malleable form of intelligence that can be developed through training, travel, and exposure to different cultural contexts (Ang et al., 2015). As such, scientists and

practitioners both have a keen interest in discovering and documenting the ways in which CQ may be developed. This chapter provides a critical and integrative review of the ways that organizations may systematically increase employee CQ through training and development activities. Many CQ training and development studies have accumulated in the past few years, but the field lacks a synthesis and evaluation of this emerging body of research. In response, we offer the current chapter with the goal of advancing both the science and the practice of developing CQ.

In what follows, we begin with a brief review of the CQ construct and the key findings with regard to its benefits for individuals and organizations. We then discuss the broader intercultural training literature to position the development of CQ within the larger context of increasing intercultural competence. The bulk of the chapter is dedicated to reviewing specific studies on the development of CQ. We organize the studies based upon their research design and intervention approach (i.e., training vs. intercultural experience). We conclude the chapter with recommendations for future scholarship on developing CQ.

Overview of Cultural Intelligence and Its Importance

Research on intercultural competence has been accumulating for decades along several divergent paths. *Intercultural competence* has been defined broadly as "the ability to think and act in interculturally appropriate ways" (Hammer, Bennett, & Wiseman, 2003: 422) or more specifically as "an individual's effectiveness in drawing upon a set of knowledge, skills, and personal attributes in order to work successfully with people from different national cultural backgrounds at home or abroad" (Johnson, Lenartowicz, & Apud, 2006: 530). Leung, Ang, and Tan's (2014) review of the intercultural competence literature noted more than 30 intercultural competence models and more than 300 personal characteristics as sources of intercultural competence.

Due to the sheer number of intercultural competence constructs and studies, much of this work has been fragmented – with conflicting conceptualizations of the phenomenon (Leung et al., 2014) and the lack of a theoretical foundation for some studies (see Ang et al., 2007 for a discussion of this problem). To date, most intercultural competence research has adopted an individual-difference perspective and conceptualized competence as personal traits (e.g., open-mindedness, cognitive complexity). A second stream of research has conceptualized intercultural competence as intercultural attitudes and worldviews (e.g., ethnocentric-ethnorelative worldviews, cosmopolitan outlook). A third and final stream of research has conceptualized intercultural competence as a set of intercultural capabilities (i.e., knowledge, skills, and abilities that a person can use to be effective in culturally diverse or intercultural contexts). CQ fits within this latter stream and is thus distinct from the individual-difference and attitudinal traditions.

Conceptualizing Cultural Intelligence

CQ has been conceptualized as a malleable set of intercultural capabilities that reflect the degree to which an individual is able to function effectively in intercultural contexts (Ang & Van Dyne, 2008; Earley & Ang, 2003). It is a multidimensional construct consisting of four interrelated capabilities, each with subdimensions (Van Dyne et al., 2012). First, *motivational CQ* is the ability to direct and sustain effort toward functioning in intercultural situations. It is based upon the expectancy-value theory of motivation (Eccles & Wigfield, 2002) and includes the subdimensions of self-efficacy, intrinsic motivation, and extrinsic motivation. When sojourners have high motivational CQ, they have confidence in their ability to function effectively in diverse settings. Second, *cognitive CQ* is knowledge about cultures and cultural differences, including both culture-general and culture-specific knowledge such as awareness of norms, practices, and social systems in different cultures. Third, *metacognitive CQ,* sometimes referred to as "thinking about thinking," is the ability to acquire, assess, and understand cultural knowledge. It is the capability to plan for cultural interactions, maintain awareness of cultural differences as they occur, and check/revise assumptions about different cultures. Metacognitive CQ allows individuals to have some degree of control over their own thought processes about cultural differences. Finally, *behavioral CQ* is the ability to exhibit flexibility in verbal behaviors, nonverbal behaviors, and speech acts when adapting to other cultural contexts.

Overall, CQ is represented by these four capabilities and their subdimensions. Empirical data, however, shows that the antecedents and consequences of CQ often differ across the four dimensions (Ang et al., 2015). As a consequence, we highlight the need for additional research and training on the four capabilities because this should provide more insights than research on the overall construct.

Although research on CQ is relatively new, it has expanded rapidly over the last decade and has become the most prominent framework for studying intercultural competence. Gelfand, Imai, and Fehr (2008) summarized reasons for this growth and prominence. First, CQ offers a parsimonious approach because it focuses on four dimensions that represent the relevant elements of competence at a higher, more abstract level, rather than at a more specific level. Second, it offers theoretical synthesis because it captures the multifaceted nature of intercultural competence in a cohesive manner that allows incorporation of findings from earlier models of intercultural capabilities. Third, it offers theoretical precision because it differentiates motivation, cognition, metacognition, and behavior and it excludes factors that are not capabilities (e.g., personality, values). As a result, CQ has been useful for "construct clean-up."

Additionally, Matsumoto and Hwang's (2013) rigorous review of measures of cross-cultural competence concluded that many scales lack validity and have unstable factor structures. In contrast, they concluded that CQ has a stable factor structure and there is "considerable evidence for the concurrent and predictive ecological validity" of CQ with samples from multiple cultures.

CQ also has relevance at different levels of analysis. Research has begun to go beyond the individual level (Ang et al., 2007) and consider CQ in groups and teams (e.g., additive CQ and leader's CQ; Adair, Hideg, & Spence, 2013; Chen & Lin, 2013; Erez et al., 2013; Moynihan, Peterson, & Earley, 2006; Rockstuhl & Ng, 2008; Shokef & Erez, 2008), at the organizational level (e.g., processes for cultural knowledge integration; Ang & Inkpen, 2008; Moon, 2010), and even in interorganizational social networks (e.g., network heterophily; Gjertsen et al., 2010). CQ is also useful in multilevel and cross-level research (Chen, Liu, & Portnoy, 2012; Groves & Feyerherm, 2011).

Nomological Network of Cultural Intelligence

The theoretical framework offered by CQ has reinvigorated intercultural competence research, as evidenced by dozens of studies that have documented positive outcomes of CQ. A full review of the CQ research literature is outside the scope of this chapter, and so we encourage interested readers to see Ang et al. (2015); Ng, Van Dyne, and Ang (2012); or Leung et al. (2014). For our purposes, it is important to note that the 20-item CQS initially developed and validated by Ang and colleagues (2007) has been extensively cross-validated in additional contexts, with results supporting the four-factor structure and demonstrating high reliability and predictive validity across multinational samples (e.g., Shannon & Begley, 2008; Shokef & Erez, 2008) in addition to country-specific studies (e.g., Imai & Gelfand, 2010; Moon, 2010; Sahin et al., 2013).

Research consistently supports the importance of CQ as an intercultural capability that fosters personal and professional effectiveness in culturally diverse contexts. For example, CQ is positively related to intercultural adjustment (Malek & Budwar, 2013), psychological well-being (Ward, Wilson, & Fischer, 2011), intercultural cooperation (Mor, Morris, & Joh, 2013), and performance (e.g., Chen et al., 2010; Chen et al., 2012). CQ uniquely predicts trust development in intercultural contexts, even after controlling for cognitive ability, personality, international experience, and demographics (Chua, Morris, & Mor, 2012; Rockstuhl et al., 2010). CQ also predicts leadership effectiveness in cross-border contexts, after accounting for general mental ability and emotional intelligence (Rockstuhl et al., 2011).

To date, most CQ research has focused on consequences of CQ, with less attention to predictors of CQ and how it may be developed. Nevertheless, there is some conceptualization and research on antecedents. Ang and Van Dyne (2008) advanced a CQ nomological network wherein CQ is predicted by individual characteristics (e.g., personality, values) and activities (e.g., cross-cultural experience) and predicts intercultural effectiveness (see also Leung et al., 2014). Research is beginning to validate components of this model. For example, CQ mediates the effects of the personality characteristic of openness to experience on adaptive performance of exchange students (Oolders, Chernyshenko, & Stark, 2008) and on job performance of expatriates (Sri Ramalu, Shamsudin, & Subramaniam, 2012). Moreover, prior intercultural contact predicts international

leadership potential through its mediated effects on observer-rated CQ (Kim & Van Dyne, 2012). Although personality and prior intercultural experience act as antecedents to CQ, they are not the only ways to develop CQ. Next we consider the intercultural training literature as an important approach for systematically increasing CQ based on developmental interventions.

Intercultural Training Foundations

To provide a broader context for understanding different approaches to CQ training, we begin with an overview of research on intercultural training. We focus on *intercultural training,* defined as "the educative processes used to improve intercultural learning via the development of cognitive, affective, and behavioral competencies needed for successful interactions in diverse cultures" (Littrell et al., 2006: 356). To bridge our review with prior work on expatriate training, we use the terms *cross-cultural training* and *intercultural training* interchangeably. Nevertheless, we note the current shift toward using the term *intercultural training* because many intercultural (and cross-cultural) interactions take place within one's home country and many workplace interactions are culturally diverse (e.g., they often include people from more than two cultures). As such, developing intercultural competencies can be beneficial for everyone, not just expatriates or members of global virtual teams.

Intercultural Training Theory and Methods

While challenges related to intercultural adaptation and effectiveness have existed since antiquity, the modern field of intercultural training began as a result of the ethnocentric atrocities that occurred during World War II. In the subsequent decades, governmental programs emphasized intercultural contact (e.g., Peace Corps), and this increased public and academic interest in the challenges of intercultural adjustment and intercultural understanding (Bhawuk & Brislin, 2000; Furnham & Bochner, 1986). In the 1950s and 1960s, attention focused on understanding the processes of intercultural adjustment and the implications for development of training programs.

Oberg's (1960) notion of *culture shock*, which refers to the distress – including anxiety and psychosomatic symptoms – experienced by sojourners when their familiar symbols and patterns of interaction are removed (Furnham & Bochner, 1986), was an important advancement in this area. There is substantial theory and evidence documenting the stress that sojourners may experience as they attempt to acculturate to a new context (e.g., Berry, 1989; Berry & Sam, 1997; Furnham & Bochner, 1986). Another development in the early literature was the *U-curve of adjustment* (Church, 1982; see also Bhawuk & Brislin, 2000). According to this model, sojourners start with a high level of excitement, but their enthusiasm abates as they experience feelings of displacement and unmet expectations (i.e., culture shock). After a period of time, sojourners recover and begin to adjust successfully to the culture. Although empirical tests of this

model have not fully corroborated its validity (Dinges & Baldwin, 1996), the U-curve model is a useful heuristic that can help sojourners anticipate some of the challenges and stages of adjustment. Culture shock and the U-curve of adjustment became the foundation of training programs aimed at reducing the period that sojourners experienced culture shock and increasing their potential for successful adaptation; they are still taught in intercultural training programs today (Littrell et al., 2006).

Training methods and content evolved through the 1980s and 1990s, when organizational and academic interest in intercultural training increased dramatically due to the increased frequency of international business travel. Early training methods provided *didactic*, classroom-based, training (i.e., factual information about the target country). Didactic training remains an important component of many intercultural training programs, but it has inherent limitations (Brislin & Horvath, 1997) including the difficulties of recalling information presented in an abstract manner with little direct application to behavior (Furnham & Bochner, 1986).

During this period, researchers and practitioners also sought to develop training methods that would be more directly applicable. One advancement was the recognition that sojourners integrate into a new culture more effectively if they understand *why* people behave the way they do. *Attribution training* was developed to teach trainees how to make attributions for others' behaviors that are consistent with explanations provided by members of the target culture. This consistency of attributions is termed isomorphic attributions (Fiedler, Mitchell, & Triandis, 1971). Training programs on isomorphic attributions typically use a technique called the culture assimilator, in which trainees are presented with critical incidents and must choose the best explanation for an actor's behavior in a specific culture (Cushner & Brislin, 1996; see also Bhawuk, 1998). Attribution training with the culture assimilator method provides benefits for sojourner's intercultural competencies but more so for cognitive outcomes than for affective or behavioral outcomes (Albert, 1983; Harrison, 1993). Another method that developed in the 1980s and is still popular today is *cultural awareness training.* In this approach, trainees gain an awareness of their own cultural assumptions and are trained to question their own assumptions. As a result, they become sensitized to cultural differences (Gudykunst, Buzley, & Hammer, 1996).

Although each of the preceding intercultural training methods is still used, scholars today emphasize the value of *experiential training*, consistent with broader trends in the organizational learning literature (Noe, Clarke, & Klein, 2013). There are different approaches to experiential learning. One popular model is based on the experiential learning theory (ELT) developed by Kolb (1984). This model emphasizes a continuous process of learning that includes four stages: concrete experiences, reflective observation, abstract conceptualization, and active experimentation. The key assumption of ELT is that the four types of active involvement (experiencing, processing, developing mental models, and testing assumptions) are all required for effective experiential learning. People differ in their natural tendencies to use the four techniques and can start

with any of the four processes, but they gain the most when they use all four approaches (Kolb & Kolb, 2005).

Experiential training focuses upon developing skills for working effectively with members of the target culture. It includes active techniques such as role-plays, simulations, and look-see visits (Kealey & Protheroe, 1996; Morris & Robie, 2001). The emphasis is on being fully engaged and actively involved in activities with direct relevance to functioning in the new cultural context. This shift toward experiential learning and experiential training is consistent with Black and Mendenhall's (1990) influential *social learning theory* of cross-cultural training. This theory posits that people learn appropriate intercultural behavior through modeling processes, cognitive attention and retention, as well as behavioral enactment such as reproduction of behaviors (practice) and reinforcement of behaviors with incentives. Based on the higher involvement and engagement associated with experiential learning and experiential training (compared to didactic classroom training), Black and Mendenhall argued that experiential approaches are more effective at increasing intercultural skills.

Benefits of Intercultural Training

Reviews of the intercultural training literature support the benefits of intercultural training across training methods. Black and Mendenhall (1990) demonstrated the benefits of cross-cultural training for personal and cognitive skill development. Morris and Robie's (2001) meta-analysis reported positive relationships for intercultural training with expatriates' intercultural adjustment ($\rho = 0.12$, $p < .05$) and performance ($\rho = .23$, $p < .05$). Littrell and colleagues' (2006) narrative review of the cross-cultural training literature concluded that cross-cultural training is effective because it helps foster self-maintenance, interpersonal, and cognitive skills, which are all important for success in a new culture (see also Deshpande & Viswesvaran, 1992).

Despite the documented benefits of intercultural training, organizations too often focus on country-specific training for soon-to-be expatriates and some regard intercultural training with skepticism (Black & Mendenhall, 1990). For example, Livermore and Van Dyne (2015: 14) noted that "[t]eam members often approach diversity training apathetically, going through the motions just because it is required." With the advent of CQ and the rigorous statistical evidence that CQ predicts adjustment, decision making, and performance in *many* culturally diverse contexts, intercultural training clearly has relevance to all employees.

Development of Cultural Intelligence: Review of the Current Evidence

We conducted a comprehensive literature review to uncover research publications that have focused on training and development interventions that may systematically increase employee's CQ. We cast a wide net, aiming to

capture all publications that have focused on CQ as the intercultural competence of interest (i.e., excluding individual traits and individual attitudes), regardless of the training or development method, study methodology, study context, or sample. Our initial search revealed some literature reviews and conceptual articles about development of CQ that did not report empirical results. After excluding nonempirical papers, we examined 28 published articles and chapters that reported results on the extent to which specific training or development activities predicted CQ. In what follows, we begin by providing an overview of major observations and trends across this full set of papers, and we then delve into specific findings from these studies in greater detail in subsequent sections on: (1) CQ training interventions, and (2) intercultural experience interventions. Table 18.1 summarizes key features of the studies.

Trends in Research on Development of Cultural Intelligence

Sample Characteristics

As indicated by the information in the second column of Table 18.1, most CQ intervention studies relied upon student samples, albeit many of the students were in professional programs (e.g., MBA, executive programs). Only one training program focused on a professional context where employees were preparing for expatriate assignments (Rehg, Gundlach, & Grigorian, 2012). This contrasts with the cross-cultural training literature, which traditionally focused on training expatriates (e.g., Littrell et al., 2006). The use of student samples is not surprising given the novelty of CQ training and the importance of training interventions within cross-cultural management (CCM) or psychology courses. Nevertheless, this may influence generalizability and the concomitant recommendations for CQ program design.

Research Design

More than half (n = 16) of the studies employed quasi-experimental, repeated-measures designs with a pre- and postintervention CQ survey. This study design is more appropriate than correlational designs for drawing conclusions about increases in CQ that may result from training or development interventions and so we emphasize these studies in our review. We note, however, that only four of these studies included a matched-sample control group and none used random assignment.

Ten studies in Table 18.1 used correlational field survey designs where participants reported their experiences during a CQ training program (n = 1) or their prior intercultural experiences (n = 9) and this information was used as independent variables. Although correlational designs do not provide a strong foundation for drawing conclusions about change, they still offer insights about the development of CQ so we have retained them in our review. Importantly, researchers who used correlational field survey designs were more likely to access employees in professional contexts (e.g., Gupta et al., 2013). As a result, the combination of correlational and more controlled quasi-experimental student

Table 18.1 *Summary of the research evidence on developing cultural intelligence*

Study	Sample	Research Design	Independent Variables	Training or Development Program Content	Summary of Findings
1. Bücker & Korzilius (2015)	66 students in France and the Netherlands, plus 15 control groups students in the Netherlands	Quasi-experimental, pre-post intervention repeated measures, with matched samples control	Training program (classroom based)	Ecotonos simulation, a behavioral role play	Metacognitive, motivational, and behavioral CQ increased after training for the treatment group. Compared to the control group's CQ score gains, the treatment group's CQ score gains were only significantly better for metacognitive CQ.
2. Crowne (2008)	140 U.S. participants in a convenience sample (mostly adult students)	Field survey, cross-sectional	International experience (self-reported)	N/A	The number of countries visited was positively related to each dimension of CQ, but results differed as a function of whether these visits were for employment, education, vacation, or other purposes.
3. Eisenberg et al. (2013)	*Study 1*: 289 students in Austrian university *Study 2*: 150 students in international management master's program plus 40 control group students	Quasi-experimental, pre-post intervention repeated measures (*Study 1*) with matched samples control (*Study 2*)	Training program (CCM course), international experience	2.5-day CCM course with 60% didactic, 40% experiential and self-awareness	*Study 1*: Only cognitive and metacognitive CQ improved after CCM course. International experience predicted all dimensions except behavioral CQ more strongly at time 1. *Study 2:* Cognitive, metacognitive, and motivational CQ improved after CCM course. The control group showed no improvements. International experience predicted time 1 CQ but not time 2.

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Table 18.1 (*cont.*)

Study	Sample	Research Design	Independent Variables	Training or Development Program Content	Summary of Findings
4. Engle & Crowne (2014)	105 students in U.S. university, plus 30 control group students	Quasi-experimental, pre-post intervention repeated measures with matched samples control	Cross-cultural sojourn, prior intercultural experience	7–14 day study abroad program for community service	All CQ dimensions increased significantly after the study abroad experience. For the control group, there were no significant changes in CQ. Prior intercultural experience was unrelated to CQ and changes in it.
5. Erez et al. (2013)	1,221 MBA and graduate students across 12 nations	Quasi-experimental, pre-post intervention repeated measures; multilevel (individuals nested in teams)	Training experience (multicultural virtual team project), team trust	Four-week multicultural virtual team project with self-awareness and experiential components; embedded within global management courses	Training experience increased overall CQ (no subscales were reported). Participants working in teams with high trust evidenced further benefits of training. Improvements in CQ were stable over six months.
6. Fischer (2011)	49 students in New Zealand university	Quasi-experimental, pre-post intervention repeated measures	Training program (in org. psychology course), cultural essentialism beliefs, open-mindedness, minority status	Five weeks of course with a mix of didactic and experiential components	No direct increase in any CQ dimension as a function of training. Open-mindedness moderated training's effectiveness: only open-minded students evidenced increased motivational CQ. Motivation and metacognitive CQ were higher for minority students.

7. Gertsen & Soderberg (2010)	Four interviews of Danish expatriates in MNCs	Qualitative: Narrative interviews were examined in depth	Expatriate experience	Differs for each expatriate	Narration provides a context for developing metacognitive CQ but does not guarantee it. Events must be perceived and lead to reflection for learning to occur. They suggest narrative therapy may be beneficial to incorporate into CQ training programs.
8. Gupta et al. (2013)	233 Indian expatriates working in Europe or the United States	Field survey, cross-sectional	International experience (self-reported), expatriate training (self-reported), self-monitoring	N/A	Prior international experience was unrelated to all CQ dimensions. Expatriate training was only positively related to motivational CQ. Self-monitoring was positively related to cognitive, motivational, and behavioral CQ.
9. Hodges et al. (2011)	172 textile and apparel students in Thailand, Australia, and Russia	Quasi-experimental, pre-post intervention repeated measures, with open-ended questions	Training program	Eight didactic, web-based, customized learning modules for textile and apparel industry	Cognitive and metacognitive CQ increased after training. Qualitative results highlighted the importance of being open-minded to diverse perspectives, career preparation, and learning as an ongoing process.
10. Kim & Van Dyne (2012)	*Sample 1:* 441 adult participants in a development program *Sample 2:* 181 matched employee-observer pairs	Field survey, cross-sectional	International experience (self-reported)	N/A	Prior intercultural contact predicted self-reported (Study 1) and observer-reported (Study 2) overall CQ for U.S.-born majority group members, but overall CQ was uniformly high for those born in other countries (no dimensions reported).

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Table 18.1 (*cont.*)

Study	Sample	Research Design	Independent Variables	Training or Development Program Content	Summary of Findings
11. Li et al. (2013)	294 international business executives	Field survey, cross-sectional	International experience (self-reported)	N/A	Length of international experience was positively related to overall CQ (no dimensions reported). The relationship length of experience and CQ was qualified by divergent learning style.
12. MacNab & Worthley (2012)	Over 370 managers and management students	Field survey, time-lagged	International experience (self-reported), general self-efficacy	N/A	There was no relationship between any type of international experience (travel, work, management) and CQ. General self-efficacy was positively related to CQ.
13. MacNab (2012)	373 management education professionals in Australian and American universities	Quasi-experimental, pre-post intervention repeated measures	Training program	Eight-week CQ training program, heavily experiential (7-stages) with some didactic and self-awareness elements	Metacognitive, motivational, and behavioral CQ increased after training. Cognitive CQ was not assessed in the study.
14. MacNab et al. (2012)	373 business students in Australian and American universities	Field survey, cross-sectional	International experience (self-reported), general self-efficacy	N/A	Experience with high-quality intercultural contacts (i.e., contact theory; characterized by equal status, common ground, meaningful individual contact, and support of authority) was positively related to overall CQ (no subscales reported). General self-efficacy was positively related to CQ.

15. Moon, Choi, & Jung (2012)	190 Korean expatriates currently on assignment overseas	Field survey, cross-sectional	Training exposure before departure (self-reported), International experience (self-reported)	N/A	Comprehensiveness of predeparture training was positively related to all CQ dimensions. Prior international nonwork experience predicted all CQ dimensions, but prior international work experience only predicted cognitive and metacognitive CQ.
16. Pless, Maak, & Stahl (2011)	70 participants in a service-learning program engaged with cross-sector partnerships in developing countries	Qualitative: Interviews were content-analyzed for learning narratives	Cross-cultural sojourn with experiential training elements	4.5-month, six-phase service learning program, aimed at fostering leadership development	All of the program participants evidenced CQ learning, with the highest learning for culture-general knowledge. Learning processes occurred at cognitive, behavioral, and affective levels and included resolving paradoxes, constructing a new view of oneself in the world, and making sense of one's emotions while on assignment.
17. Ramsey & Lorenz (2016)	152 MBA students in United States plus 129 control group students	Quasi-experimental, pre-post intervention repeated measures, with matched samples control	Training program (CCM course)	Course included textbook readings on international management and current event discussions	Overall CQ increased after the CCM course (no subscales reported). Increased CQ predicted satisfaction with CCM studies.
18. Rehg et al. (2012)	110 U.S. government contracting trainees	Quasi-experimental, pre-post intervention repeated measures	Training program, specific self-efficacy	Nine-day training course with didactic method; content predominantly focused on laws, regulations, and contracting procedures	Cognitive and motivational CQ increased after training. Metacognitive CQ was not assessed. Specific self-efficacy predicted all three CQ dimensions at time 2.

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Table 18.1 (*cont.*)

Study	Sample	Research Design	Independent Variables	Training or Development Program Content	Summary of Findings
19. Reichard et al. (2014)	130 organizational leaders from United States; 55 administrative staff members from South African university	Quasi-experimental, pre-post intervention repeated measures	Training program on cross-cultural psychological capital (PsyCap)	Two-hour cross-cultural PsyCap training session, with self-awareness, experiential, and didactic components	CQ total increased after PsyCap training program (no subscales reported). Increases in CQ remained stable two months after training program.
20. Reichard et al. (2015)	133 employees from 14 organizations in California (U.S.)	Quasi-experimental, pre-post intervention repeated measures	Training program (classroom based)	Cultural trigger events and self-awareness; psychological and social resources (four hours in classroom)	Metacognitive and behavioral CQ increased after training. Cognitive and motivational CQ did not. Ethnocentrism scores were also significantly reduced.
21. Rosenblatt et al. (2013)	212 Australian students in a cross-cultural management course	Quasi-experimental, pre-post intervention repeated measures	Cross-cultural contact experiences, perception of optimal contact, expectancy disconfirmation	6–8 week intervention to foster more positive intercultural contact experiences	CQ improvements were operationalized by a difference score (CQ development). CQ development was positive on average, showing upward change. Perceptions of optimal contact were not directly related to CQ development, but were mediated by expectancy disconfirmation, which positively predicted all CQ dimensions.

22. Shannon & Begley (2008)	245 business students	Field survey, time-lagged (two points)	International experience (self-reported), language acquisition, diversity of social contacts	N/A	International experience was positively related to motivational CQ, but not to any other dimension. Language acquisition was positively related to cognitive CQ. Diversity of social contacts was unrelated to all CQ dimensions.
23. Shokef & Erez (2008)	191 MBA students working in multicultural teams	Quasi-experimental, pre-post intervention repeated measures	Training experience (multicultural virtual team project)	Four-week multicultural virtual team project with self-awareness and experiential components; embedded within global management courses	Metacognitive, motivational, and behavioral CQ increased after exposure to the multicultural virtual team project. Cognitive CQ did not increase. Global identity also increased. (*NOTE:* this sample is also included within Erez et al., 2013)
24. Tarique & Takeuchi (2008)	212 undergraduate management students at U.S. university	Field survey, time-lagged (two points)	International nonwork experience (self-reported; number and length)	N/A	The number of international nonwork experiences was positively related to all dimensions of CQ. The length of international nonwork experiences was positively related metacognitive and cognitive CQ.
25. Tay et al. (2008)	70 business travelers working in multinational corporations	Field survey, cross-sectional	International experience, need for control	N/A	Business travelers' multicultural experiences were positively related to cognitive CQ only. Need for control was positively related to all four CQ dimensions, and it further qualified CQ relationships.

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Table 18.1 (*cont.*)

Study	Sample	Research Design	Independent Variables	Training or Development Program Content	Summary of Findings
26. Van Dyne et al. (2008)	204 Singaporean students	Quasi-experimental, pre-post intervention repeated measures	Training program (international management course)	Course included didactic and experiential components	The CQS evidenced measurement invariance across time. Cognitive CQ and behavioral CQ increased significantly as a function of course training. Metacognitive and motivational CQ did not increase.
27. Varela & Gatlin-Watts (2014)	84 U.S. business students participating in an exchange program	Quasi-experimental, pre-post intervention repeated measures	Cross-cultural sojourn, personality, cognitive ability, cultural distance, length of sojourn	Academic semester abroad program in Mexico or French-speaking Canada (average of 65 days)	Cognitive and metacognitive CQ increased after study abroad; motivational and behavioral CQ did not. Openness to experience (intellect) predicted metacognitive CQ development but cognitive ability predicted cognitive CQ development. Results were qualified by cultural distance and length of sojourn.
28. Wood & St. Peters (2014)	42 working professionals in a U.S. MBA program	Quasi-experimental, pre-post intervention repeated measures	Cross-cultural sojourn	11–12 day cross-cultural study tour	Cognitive, metacognitive, and motivational CQ all increased significantly after the study tour; behavioral CQ did not.

sample studies provides a nice balance. Additionally, our database included two qualitative, interview-based investigations of development of CQ that we also review in the following text.

Before moving on, we note that there are currently no published studies on the development of CQ that meet all of the recommendations for methodological rigor outlined in prior cross-cultural training reviews (i.e., control groups, pre-post design, random assignment, longitudinal measures; Kealey & Protheroe, 1996; Littrell et al., 2006). We return to this issue in the discussion of future research.

Predictors of Development of Cultural Intelligence

Regarding independent variables, the quasi-experimental studies can be further divided into those that examined training program delivery as the primary treatment variable (n = 12) versus those that examined cross-cultural sojourn experience as the treatment variable (n = 4). The correlational studies showed a similar divide but only one study focused on participant's reports of their experiences during a CQ training program (i.e., Moon, Choi, & Jung, 2012); all remaining correlational studies focused on participants' reports of international experience. This contrast between formal training and intercultural experience appears to reflect divergent assumptions about the best approaches for increasing CQ. Importantly, our analysis reveals that there is surprisingly little cross-fertilization between these streams of research. One exception is Pless, Maak, and Stahl's (2011) examination of a service-learning program, which included both experiential training and a cross-cultural sojourn.

Training or Development Program Content

The third column in Table 18.1 summarizes the research design and content of the study's training or development program. Consistent with the multifaceted nature of CQ (e.g., motivational, cognitive, metacognitive, and behavioral components), programs have used multifaceted training methods to enhance CQ. Overall, blended learning is the norm for CQ training, such that most programs included didactic and experiential components, and some also included a self-awareness component. Although most papers did not refer explicitly to self-awareness training, a few studies described fostering self-awareness as part of the program delivery (e.g., Erez et al., 2013; MacNab, 2012; Reichard, Dollwet, & Louw-Potgieter, 2014). In sum, these studies show that experiential, multifaceted learning approaches are the norm for development of CQ. We view this as a positive trend. We next describe the designs and findings of specific training intervention studies – starting with quasi-experimental research, followed by correlational research.

Key Findings on Cultural Intelligence Training Interventions

Quasi-Experimental Cultural Intelligence Training Research

The earliest evidence documenting that CQ could be developed through training was published as part of Van Dyne, Ang, and Koh's (2008) validation of the

CQS. They reported results of a four-month, time-lagged study of students in an international management course that emphasized cognitive instruction on cultural values and behavioral role-playing exercises. Results demonstrated longitudinal measurement invariance of the CQS and showed significant increases in cognitive and behavioral CQ.

Fischer's (2011) subsequent quasi-experimental study on CQ training found only modest support for the possibility that CQ could be developed. This study used lectures, self-awareness, experiential exercises (BAFA BAFA: Shirts, 1977), and behavioral modification training (Excell: Mak et al., 1999) across five weeks in a New Zealand organizational psychology course. Despite the strengths of this multifaceted approach, results showed CQ scores did not increase, and cognitive CQ was significantly lower at T2. Fischer (2011) suggested that the decrease in cognitive CQ could be based on moving from "unconscious incompetence" (i.e., being unaware) to "conscious incompetence" (i.e., being aware that their cultural competence was low) based on Bhawuk's (1998) stages of intercultural development. Students with higher open-mindedness (assessed through the Multicultural Personality Questionnaire; van der Zee & Van Oudenhoven, 2000) showed significant improvements in motivational CQ, indicating that some people are more likely to benefit from training programs than others.

Hodges and colleagues (2011) used a CQ training program with eight, web-based didactic training modules that covered topics from global sourcing and competitive positioning to intercultural communication – specifically tailored to textile and apparel industry professionals. The training modules were embedded within courses at three U.S. universities and resulted in significant increases in cognitive and metacognitive CQ, but not behavioral or motivational CQ.

Rehg and colleagues (2012) conducted the only study we located on employee CQ training aimed at improving execution of job duties. This study examined CQ training for civilian contractors for the U.S. government who would be executing governmental contracts overseas. The training program was entirely lecture based, and emphasized factual information about cultural values, how culture affects behavior, and specific cultural knowledge about Iraq. Results demonstrated that cognitive and behavioral CQ improved after training, but motivational CQ did not. Metacognitive CQ was not measured. Results also showed that task-specific self-efficacy increased as a function of training and predicted the three dimensions of CQ at time 2.

MacNab (2012) drew on Kolb's (1984) ELT to argue that direct experiences coupled with reflection and cumulative knowledge building are superior to information-only training approaches. He designed a CQ education program that mapped onto Cushner and Brislin's (1996) five-step learning process (i.e., developing awareness, fostering experience, internalization, communication, and social sharing). A sample of 373 management professionals completed the training program (about eight weeks), and the results demonstrated significant improvements in metacognitive, motivational, and behavioral CQ; cognitive CQ was not assessed in this study.

Eisenberg and colleagues' (2013) quasi-experimental research offered two studies where the second study included a matched-sample control group. Drawing on Earley and Peterson (2004), they argued that course-based training is more likely to influence cognitive and metacognitive CQ (the "mental dimensions") than motivational or behavioral CQ. The Study 1 training intervention was an intensive 2.5 day CCM course delivered to Austrian students about to study abroad. As predicted, results demonstrated that cognitive and metacognitive CQ improved after training, whereas motivational and behavioral CQ did not. The Study 2 training intervention was a more involved CCM course delivered over an average of eight weeks to Masters of International Management students at partner universities in six countries. Again, cognitive and metacognitive CQ improved. Additionally, motivational CQ also increased significantly. There were no significant changes in behavioral CQ. For the control group, none of the CQ dimensions significantly changed. Analyses also demonstrated that prior international experience predicted CQ scores at time 1, but this relationship disappeared at time 2, suggesting that the CCM course acted as an "equalizer" that increased CQ of trainees who had little prior intercultural experience.

Erez and colleagues (2013) reported results of a unique study of intercultural training and CQ within the context of a multicultural virtual team project, and Shokof and Erez (2008) provided preliminary results of this multiyear study. Participants were 1,221 graduate students in global management courses distributed across 12 nations who participated in a four-week, three-phrase program (getting to know each other, a virtual team project, and postproject wrap-up). Overall CQ improved as a function of the training experience (no subscales were reported), and CQ was further enhanced when participants worked in teams with high levels of trust. A subsample of participants (n = 121) also completed a six-month follow-up survey to assess the stability of CQ improvements and showed that the gains in CQ did not decrease after six months. These results are consistent with early arguments by Moynihan and colleagues (2006) that working in multinational teams provides a rich experiential context to grown one's CQ.

A quasi-experimental study by Reichard and colleagues (2014) offered a distinct approach to intercultural training. This program was designed to increase participants' psychological capital (PsyCap), defined as the positive psychological states of efficacy, hope, optimism, and resilience (Luthans, Youssef, & Avolio, 2007). The program included two-hour training sessions for professionals in the United States and South Africa aimed at increasing self-awareness, reframing past events, and identifying strategies for intercultural success. The training increased overall CQ (no subscales were reported) and that these increases remained stable for two months after the program.

A subsequent study by Reichard and colleagues (2015) built upon this foundation by developing a training program to foster employees' psychological and social resources based upon cultural trigger events (i.e., discrete cultural occurrences that are often negative in nature). Their first study developed cultural trigger event scenarios based upon thematic analysis, and their second study

was a quasi-experimental exploration of whether employees who underwent classroom training on trigger events would evidence increased CQ. Results showed that metacognitive and behavioral CQ increased after training, whereas cognitive and motivational CQ did not. Results also showed reduced levels of ethnocentrism for participants.

Bücker and Korzilius (2015) assessed the extent to which a cross-cultural behavioral role-play simulation (Ecotonos) improved CQ amongst international management students. Their quasi-experimental design included a matched-samples control group. This experiential training program showed significant improvements for metacognitive, motivational, and behavioral CQ after training for the treatment group; and no significant change in cognitive CQ. CQ also increased in the control group, and results showed a significantly greater increase in metacognitive CQ for the treatment group compared to the control group.

Finally, a recent study by Ramsey and Lorenz (2016) employed a quasi-experimental, matched-samples control design to explore improvements in overall CQ (no subscales) for MBA students in a CCM course. The treatment in this study was the international management textbook readings along with discussions of current events so the training was largely didactic. Results showed significant improvements in total CQ for the treatment group at time 2, and as expected, no significant change in CQ scores for the control group.

Correlational Cultural Intelligence Training Research

Whereas the prior section focused on studies that used pre- and posttraining interventions and assessed changes in CQ, another study used a correlational design. Specifically, Moon and colleagues (2012) surveyed Korean expatriates about their prior intercultural experience and predeparture intercultural training (length and comprehensiveness) to determine whether training was linked to CQ. Their sample is unique because it is the only CQ training study that focused on expatriates currently on assignment. The results of this cross-sectional, self-reported survey demonstrated a positive relationship between previous international *nonwork* experience and all dimensions of CQ. Interestingly, previous international *work* experience was positively related to cognitive and metacognitive CQ, but not to motivational or behavioral CQ. Expatriates who had more comprehensive intercultural training programs before departure reported significantly higher CQ on all dimensions. Finally, these results were qualified by mastery and performance avoidance goal orientations, such that comprehensive predeparture intercultural training was more likely to predict CQ for those with a mastery-goal orientation and less likely to predict CQ for those with a performance-avoid orientation. This provides important evidence that individual differences function as boundary conditions for the effectiveness of training.

Cultural Intelligence Training Research Summary

Despite some early concerns about whether training interventions could predict CQ improvements (Fischer, 2011), the bulk of the evidence has demonstrated that a variety of intercultural training interventions increase CQ.

These interventions include fully didactic (Rehg et al., 2012), fully experiential (MacNab, 2012), and blended approaches (Erez et al., 2013), and all of these approaches predicted increased CQ.

Overall, the training benefits are stronger for cognitive and metacognitive CQ, consistent with Eisenberg and colleagues' (2013) arguments, but this observation must be qualified based upon the limited number of studies and the studies that do not report separate results for the four CQ dimensions (e.g., Erez et al., 2013; MacNab, 2012; Ramsey & Lorenz, 2016; Rehg et al., 2012; Reichard et al., 2014). We now turn our attention to intercultural experience as a way to enhance CQ.

Key Findings on Intercultural Experience and Cultural Intelligence

Quasi-Experimental Intercultural Experience Research

Although the idea that intercultural experience can help to foster CQ is not new, quasi-experimental research that directly tests this proposition has only recently emerged. Rosenblatt, Worthley, and MacNab (2013) were the first to employ a pre- and posttest design to examine predictors of development of CQ (i.e., changes in CQ from time 1 to time 2). This research occurred in the context of an intercultural education program in Australia but the intervention encouraged participants to seek out and experience intercultural interactions with a novel cultural group. When intercultural experiences were perceived as upholding Allport's (1954) principles of optimal contact (e.g., equal status among participants, personalized contact, common goals, authority support), participants reported higher expectancy disconfirmation (e.g., stereotype violations). Higher expectancy disconfirmation subsequently predicted improvements on all four dimensions of CQ.

Three additional studies provide more direct assessments of changes in CQ as a function of cross-cultural sojourn experience. Wood and St. Peters (2014) assessed results of a short (11–12 day) cross-cultural study tour for professionals in a U.S. MBA program. Their results demonstrated that cognitive, metacognitive, and motivational CQ increased after the sojourn, but behavioral CQ did not increase.

Varela and Gatlin-Watts (2014) studied the effects of a semester-long study abroad program on increases in CQ for U.S. undergraduates. They also considered whether development of CQ was influenced by personality (conscientiousness, openness to experience, extraversion) and/or cognitive ability, as well the roles of cultural distance and length of the sojourn as moderators. Their results showed that cognitive and metacognitive CQ increased after the cross-cultural sojourn. Openness to experience (intellect dimension) was positively related to increases in metacognitive CQ, and cognitive ability was positively related to increases in cognitive CQ. These relationships were further qualified by cultural distance and length of the sojourn. The authors emphasized richness and depth of cultural experiences as determinants of deep-level learning, suggesting that many study abroad programs increase cognitive and metacognitive CQ because

much of the learning is knowledge based and not based on deep-level reflection and practice (see also Pless & colleagues, 2011, and the following text).

A final quasi-experimental cross-cultural sojourn study by Engle and Crowne (2014) used a more rigorous methodological design, with a matched samples control group, to assess the degree to which a short international experience may foster increases in CQ. Their sample was 105 U.S. students travelling abroad for a short (7–14 day) community service project. Thus, this study provides a relatively strict test of whether CQ can be enhanced based on a short-term international experience. Importantly, results demonstrated that all four dimensions of CQ increased for the study abroad group, but there were no significant changes in CQ for those in the control group. Overall, these studies show the promising potential of developing CQ through both short- and long-term international experience interventions, with especially strong effects for cognitive and metacognitive CQ.

Correlational Intercultural Experience Research

The earliest research aimed at understanding development of CQ used correlational field survey designs to assess the relationship between international experience and CQ. Shannon and Begley (2008) reported a positive relationship between prior international experience and motivational CQ, but not for the other dimensions of CQ. Tarique and Takeuchi (2008) reported that the overall number of international nonwork experiences was positively related to all four dimensions of CQ, but that total length of exposure was positively related to metacognitive and cognitive CQ. Tay, Westman, and Chia (2008) focused on the multicultural experiences of short-term business travelers and reported that multicultural experiences were positively related to cognitive CQ. Additionally, need for control was positively related to all CQ dimensions. These studies suggest the importance of additional research that considers boundary conditions that explain when international experiences does and does not predict specific dimensions of CQ.

Additional studies offer correlational evidence for the relationship between international experience and CQ – with only two studies (Gupta et al., 2013; MacNab & Worthley, 2012) reporting nonsignificant relationships. Crowne (2008) investigated three types of intercultural experience (e.g., work, vacation, and education) and showed that some type of intercultural experience predicted each dimension of CQ but that the relationships differed across types of experience. MacNab, Brislin, and Worthley (2013) hypothesized and found that higher-quality intercultural contact experiences (as defined by contact theory; Allport, 1954) were positively associated with CQ. Kim and Van Dyne (2012) demonstrated that intercultural contact predicted observer-rated CQ for those with majority status (those born in the United States), but the level of CQ was uniformly high for those born in another country. Finally, Li, Mobley, and Kelly (2013) reported that the relationship between an executive's length of global experience and CQ depended upon whether they had a divergent learning style (i.e., the extent to which they prioritized concrete experience and reflective observation).

Intercultural Experience Research Summary

As the preceding research demonstrates, intercultural experience is an alternative to CQ training because international experience is another way in which to foster increases in CQ. To date, the most rigorous studies on intercultural experience have shown the strongest results for metacognitive and cognitive CQ. Nevertheless, evidence from a handful of other studies shows that international experience predicts all four dimensions of CQ, as well as overall CQ. The depth and richness of intercultural experience seem to play a role in whether CQ improves, but few quantitative studies provide sufficient detail on the nature of the intercultural sojourn experience to discern the characteristics of programs and experiences that matter most. We now turn to two studies that provide depth and richness to our understanding of learning processes during intercultural encounters.

Key Findings from Narrative Research on Cultural Intelligence

Two qualitative studies have explored the cultural learning process by delving into rich reports of participant's experiences. Gertsen and Søderberg (2010) presented four in-depth cases that explored narratives of how expatriates understood and constructed cultural encounters, and how this process is linked to metacognitive CQ. They described how specific encounters elicited emotions and challenged existing understandings and triggered sense-making processes that fostered new learning and development of CQ. Overall, Gersten and Søderberg argued that the narrative approach should be particularly useful for illuminating expatriate's experiences during cultural encounters and how these experiences enable them to practice and further develop their CQ.

Pless and colleagues (2011) used a different qualitative approach and focused on interviews from 70 participants in a large-scale service learning project called "Project Ulysses." Project Ulysses is part of PricewaterhouseCooper's (PwC) global talent development program, and has the goal of promoting responsible leadership within PwC's global network of firms and developing well-rounded leaders through service learning. The six-phase program involves nomination, preparation (two months), induction (weeklong training), a field assignment (two months), debriefing (weeklong review), and networking after the program. Pless and colleagues (2011) described the program's foundations within ELT (Kolb, 1984) and emphasized the importance of a multifaceted range of opportunities that facilitate deep-level learning. Based upon the interview results, all program participants evidenced CQ learning, with the highest learning for culture-general knowledge. Learning processes occurred at cognitive, behavioral, and affective levels and included resolving paradoxes, constructing a new view of oneself in the world, and making sense of personal emotions while on assignment. The richness and depth of the Project Ulysses program, coupled with providing participants with support and expectations for ongoing cultural learning, make this program a model for future programs on development of CQ. Indeed, intercultural service learning programs for corporate

leaders are becoming increasing popular, including programs at IBM, Cigna, and GlaxoSmithKlein (Caligiuri, Mencin, & Jiang, 2013; Chong & Fleming, 2014; Maas, 2015). Supporting these programs with effective CQ training is an important future direction.

Development of Cultural Intelligence: Suggested Avenues for Future Research

Research on developing CQ has come a long way in a very short time frame. In the few years since the first development of CQ study, the field has already accumulated 28 studies, including 16 quasi-experimental, repeated-measures studies that documented changes in CQ based on pre- and post-intervention assessments. The research summarized in Table 18.1 evidences substantial diversity of approaches for developing CQ and provides additional information on the degree to which various training interventions and intercultural experiences foster improvements in CQ.

In total, the evidence provides a resounding "yes" to the question of whether CQ can be developed. With this firm foundation, scholars can now shift their attention to more rigorous designs, more nuanced questions about developing specific dimensions of CQ, transfer of training, and boundary conditions that qualify these relationships. In the next section, we offer ideas on especially promising avenues for future research.

Increasing Methodological Rigor and Sample Diversity

We recognize the challenges of conducting research on the development of intercultural competence and implementing intercultural, longitudinal research designs (Gelfand, Raver, & Ehrhart, 2002). Nonetheless, we agree with prior critiques of the intercultural training literature (Kealey & Protheroe, 1996; Littrell et al., 2006) that it is important for researchers to use more rigorous designs. The trend toward using matched-samples control groups (Bücker & Korzilius, 2015; Eisenberg et al., 2013; Engle & Crowne, 2014; Ramsey & Lorenz, 2016) is a positive development, as is the use of longitudinal assessments of increases in CQ (Erez et al., 2013; Reichard et al., 2014). These research designs need to become the norm for studies that aim to quantify the effects of CQ development.

Where possible (e.g., student training programs), it is also necessary to use random assignment of participants into treatment and control groups to establish whether CQ may be developed for participants who do not self-select into cross-cultural programs. Interestingly, the only study that showed minimal benefits of CQ training used students who did not self-select into cultural training (Fischer, 2011). The other studies examined the development of CQ in samples who were likely already motivated to learn about cultural differences (e.g., those who enrolled in CCM courses or signed up for a cross-cultural sojourn). It is important for future research to establish whether CQ interventions are equally effective for those who do not self-select into these programs. Delayed treatment

control groups may be a viable option for eventually delivering training to all program participants while meeting the standards of rigorous experimental design.

More research is also needed on working adults in employment contexts. Traditionally, the intercultural training literature has focused on expatriates (Littrell et al., 2006), and yet this population is strikingly underrepresented in the studies we have reviewed. It is possible that results with nonstudent samples will be even stronger (Despande, Joseph, & Viswesvaran, 1994). However, it is also possible that the nature of these training programs will differ (e.g., shorter, more didactic; e.g., Reichard et al., 2015), thereby affecting the potential benefits of developing CQ interventions.

Matching Dimensions of Cultural Intelligence to Development Methods

We also need research on why and how CQ training differentially influences specific dimensions of CQ. Our summary of existing research suggests that the effects of CQ training and cross-cultural experience are stronger for cognitive and metacognitive CQ, followed by motivational CQ, with the least gains seen for behavioral CQ. The reason for these differences is not entirely clear but they are consistent with findings from the broader training literature. Meta-analytic evidence on training interventions has shown that effect sizes for behavioral change tend to be smaller than those for cognitive change (Arthur et al., 2003). The difficulty of eliciting behavioral and results-focused improvements may be due to situational constraints that discourage the transfer of training. Nonetheless, it is promising that two recent CQ training studies (Bücker & Korzilius, 2015; Reichard et al., 2015) did elicit improvement in behavioral CQ. One topic for future research is to investigate whether participants' motivational or behavioral CQ is more likely to increase based on experiential (simulation) training and/or a combination of experiential training and sojourner experiences such as described by Pless and colleagues (2011), especially if coupled with a supportive transfer environment.

The broader training literature has also documented stronger links between parallel training methods and outcomes (Arthur et al., 2003). For example, cognitive change occurs after attributional or cognitive training methods (Bhawuk, 1998) whereas behavioral change occurs after behavior modification (Mak & Buckingham, 2007) and behavioral modeling training (Taylor, Russ-Eft, & Chan, 2005). We encourage scholars to specify the didactic, self-awareness, attributional, and/or experiential elements of their interventions and to investigate theoretically matched CQ outcomes. It will be beneficial to draw from theory in the organizational training literature (e.g., Taylor et al., 2005) to specify the ways in which learning outcomes are matched to the specific training method.

Transferring Cultural Intelligence Gains to Subsequent Outcomes

We found no studies that linked developmental interventions (e.g., training, experience) with indicators of intercultural effectiveness. Exploring more

complex, mediated models is an important future direction. As noted by scholars in the broader industrial-organizational literature on training, the field needs to separate training outcomes from transfer outcomes (Blume et al., 2010). Thus, increases in CQ do not necessarily equal better acculturation or intercultural effectiveness.

Additionally, the organizational training literature has emphasized the importance of the learning context and transfer of training (Aguinis & Kraiger, 2009), yet this is not true of the intercultural training literature. We suggest the value of theoretically based studies on the transfer of CQ gains to subsequent indicators of intercultural effectiveness (e.g., acculturation in new cultural contexts, global leadership potential, and global leader effectiveness).

One promising theory drew on ELT to propose that concrete international experience, reflective observation, abstract conceptualization, and active experimentation are foundations for global leadership development (Ng, Van Dyne, & Ang, 2009). This theoretical model positioned CQ as an exogenous factor, but it also may mutually reinforce international experience, such that both CQ and intercultural experience influence global leadership self-efficacy, accuracy of mental models, flexible styles, and global leader effectiveness. Research testing propositions from this model is strongly encouraged.

Considering Individual and Cultural Boundary Conditions

Research has begun to provide some evidence for boundary conditions that qualify relationships predicting the development of CQ, especially with regard to individual differences (e.g., open-mindedness, divergent learning style, goal orientation; Fischer, 2011; Li et al., 2013; Moon et al., 2012). These studies shed light on why some people are better or less able to benefit from interventions designed to develop CQ, but there is much more work to be done.

In addition to investigating other individual characteristics, it is also likely that cultural background of participants matters. For example, research has demonstrated that culture of the participant interacts with type of training to impact outcomes (Earley, 1994; Triandis, Brislin, & Hui, 1988), and yet intercultural training has proceeded as if training methods and benefits are equally appropriate across cultures. It is possible, for example, that participants from high power distance cultures may react more favorably and learn more from didactic, classroom-based training, whereas those from low power distance cultures may benefit less. Similarly, training participants from loose cultures (Gelfand, Nishii, & Raver, 2005) may be more open to divergent perspectives and thus may more quickly benefit from attribution training, compared to participants from tight cultures. Thus, future research on culturally intelligent ways to conduct training should consider ways to adapt the content and delivery to be culturally appropriate. Finally, it would be valuable to incorporate scholarship on cultural differences in thinking and learning styles into the design of training programs.

Conclusion

Research on the development of CQ has only recently emerged, and yet scholars have very quickly developed an impressive array of studies that document the gains in CQ that result from training interventions and intercultural experience programs. Thus, it is no longer a question of whether CQ may be developed. Instead, the evidence is clear: Positive changes in CQ occur as a function of systematic interventions, particularly for cognitive and metacognitive CQ. Given this strong foundation, future research should now shift toward understanding how the specific dimensions of CQ may be enhanced by domain-matched development methods, what subsequent outcomes occur as a function of CQ training and experience, and how individual and cultural boundary conditions influence training effectiveness. This stream of research has come a long way and there are many more opportunities for future research on developing CQ and the subsequent transfer of training.

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