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Current Status and Future Directions for Cultural Intelligence

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ABSTRACT

The concept of cultural intelligence was formulated to ease and understand multicultural interactions in business organizations. Based on the theory of multiple intelligence; it is the cross-cultural facet of intelligence that assists adaptive cultural adjustment. Due to its implications for the contemporary world witnessing increased cultural contact and clashes; it has attracted multidisciplinary scholarly interest. This article reviews the development, validation and major approaches to the construct, along with a focus on its critical analysis. Significance of the construct in promoting intercultural discourse to encourage pacific multicultural existence is implicated. Furthermore, suggestions are made to extend the scope of cultural intelligence research and integrate it in diverse fields encompassing intercultural contact and communication.

Introduction

Globalization has made cultural contact and diversity an undisputed reality of this era's society and institutions. Cultural diversity enhances creative outputs, but on the other hand, it often culminates into cultural clashes (Ang, Van Dyne, & Tan, 2011). Therefore, it is pertinent to encourage peaceful multicultural existence by promoting mutual cultural respect, empathy and effective intercultural communication at individual and group levels. A popular approach towards managing cultural diversity emerged with the operationalization of cultural intelligence or cultural quotient (CQ). It entails the ability to function effectively in a multicultural environment where the "assumptions, values and traditions of one's upbringing are not uniformly shared" with others (Offermann & Phan, 2002, p. 2).

Earley and Ang (2003) introduced CQ specifically to address failures in multinational organizations. Andreason (2003) reported 40% expatriate assignment failure in developed nations and up to 70% in developing countries. Employees are increasingly facing cross-cultural issues on their jobs with the rise in international business practices and workforce diversity (Van Dyne et al., 2012). Furthermore, increasing voluntary and involuntary international migration is creating avenues for multiculturalism and intercultural communication. Therefore, it is crucial to identify factors leading to intercultural harmony and effective functioning in multicultural contexts (Ang, Van Dyne, & Rocksthul, 2015).

What skills allowed some people to function better than others in culturally different contexts? CQ emerged as an answer to that crucial question by predicting adaptive outcomes across different samples in multicultural environments (Ang et al., 2007; Matsumoto & Hwang, 2013; Van Dyne, Ang, & Koh, 2008; Ward, Fischer, Lam, & Hall, 2009). However, many researchers questioned the validity of CQ (Blasco, Feldt, & Jakobsen, 2012; Bücker, Furrer, & Lin, 2015). Berry and Ward (2006) also questioned whether the CQ construct contributes anything new other than just "repackaging of 30 years of theory and research on acculturation" (p. 74).

Being a relatively new construct in cross-cultural literature (Ang et al., 2007; Gelfand, Imai, & Fehr, 2008), critical analysis are not unusual and reflects the need for the advancement of both theoretical and empirical research. This review, therefore, aims to integrate the diverse findings on CQ to establish its validity and significance in a multicultural context. Secondly, it deliberates on the implications of CQ to deal with social issues of xenophobia and ethnocentrisms, which often arise due to lack of transparent communication and consequential deficit in empathy and understanding between cultural groups. Furthermore, CQ is likely to emerge as a vital life skill in the rising numbers of cosmopolitan cities across the world where intercultural contact and communication is a compulsion of daily life. Therefore, the significance of CQ training in academics, institutions, clinical patients is discussed to facilitate cross-cultural interaction across all groups witnessing cultural contact.

CQ: Advent and Deflection from Multiple Intelligences

Early research viewed intelligence mostly in academic terms as an underlying general mental ability or g factor (Spearman, 1904) that assisted in effective mental performances across situations. Contrary to that, the multiple intelligence theory (Gardner, 1993) proposed different types of intelligences that served to various domains. Therefore, focus emerged on non-academic forms of intelligences like emotional intelligence (EQ),[1] social intelligence (SI),[2] and practical intelligence (PI).[3] Similarly, CQ was formulated as a type of intelligence supplementing efficient functioning in multicultural settings.

While culture determines the rules of emotional experience and expression (Gangopadhyay & Mandal, 2008); CQ facilitates understanding of the norms and practices of culture, including culture specific rules of emotions. This helps in appropriate emotional expression and awareness of culturally different others' emotions, which in turn assists in adjusting one's behavior according to the rules of that culture and effectively adapting to it. Therefore, it is likely that CQ and EQ will augment each other.

It has been argued that SI, EQ and CQ are interacting aspects of multiple intelligences (Crowne, 2009) and are all relevant for PI since they help in dealing with daily life issues. These forms of intelligences are distinct but not isolated from each other (Gardner, 2006). That is, despite collaborating to each other, individually they still serve to varied domains. Further, none of these non-academic intelligences focus exclusively on the ability to function in multicultural setting and solve cross-cultural problems (Ng, Van Dyne, Ang, & Ryan, 2012). Therefore, individuals high in SI and EQ are not necessarily culturally intelligent (Earley & Ang, 2003). Furthermore, psychological processes like SI and EQ are limited to the culture where they were developed (Thomas, 2006). CQ is not culture bound and hence, it has to be understood as a concept distinct from SI, EQ and other types of intelligences (Brislin, Worthley, & Macnab, 2006).

Definition and Dimensions of CQ

CQ refers to the capability of effectively adapting to new cultural contexts (Earley & Ang, 2003). Going beyond simply adapting behavior, CQ also comprises development of a general set of abilities or behavior repertoire that facilitates effective cross-cultural functioning (Ang et al., 2015). It also involves being aware of and understanding the impact of the culture of socialization on self, understanding and accepting culturally different others and withholding any stereotypes (Offermann & Phan, 2002).

It has to be noted that CQ does not relate to effectiveness in a specific culture but to the effectiveness in the particular situation of cultural plurality (Ang & Van Dyne, 2008). However, knowledge of what is "considered intelligent everyday behavior in other cultures, and how it contrasts with intelligent behavior in the cultures of their own socialization" helps in understanding how to adjust behavior to function effectively in a different culture (Brislin et al., 2006, p. 45). Thus, culturally intelligent people were termed "cultural chameleon" (Earley & Peterson, 2004, p. 100) who know and understand the changes needed to be made in aspects of the self's behavior to be adaptive across intercultural interactions. Additionally, Earley and Ang (2003) also emphasized the role of motivation in CQ. Based on the Sternberg and Detterman's (1986) framework of multiple loci of intelligence, Earley and Ang's (2003) model outlined CQ as an individual attribute composed of metacognitive, cognitive, motivational and behavioral dimensions; each making specific contributions to overall CQ (Ang et al., 2007). *Metacognitive CQ* includes higher order cognitive skills like, active awareness of one's cultural knowledge, assumptions and thought processes of the self in intercultural settings. It allows people to adjust and revise their cultural knowledge so that they can function appropriately in cross-cultural interactions. *Cognitive CQ* entails knowledge of the cultural environment (like its rules and practices of the economic, legal, sociolinguistic, communication systems) and knowledge of the self as embedded within that environment. It enables understanding similarities and differences across cultures (Gardner, 2006) and specific patterns of interaction in cultures different from one's own culture of socialization (Ang & Van Dyne, 2008). *Motivational CQ* refers to a source of drive that initiates and maintains efforts to attain knowledge about and adjust to a novel cultural setting. Here, self-efficacy constitutes an important aspect; that is, the confidence about one's capability to effectively function in multicultural setting determines the extent of effort extended to adjust to it. And lastly, *behavioral CQ* is the manifestation of cultural knowledge marked by the development of a verbal and non-verbal behavior repertoire that enhances the display of culturally intelligent or appropriate behavior.

Extending support to this model, Van Dyne et al. (2012) outlined 11 sub-dimensions of the four factors (Table 1).

Thomas et al. (2008) proposed a process oriented approach that considers CQ as an interacting system rather than a simple addition of individual dimensions. They emphasized on the interrelations between knowledge, skills and metacognition dimensions in producing culturally intelligent behavior. Here, *knowledge* component entails *declarative or content based knowledge* and *procedural knowledge*. Declarative or content based knowledge refers to culture specific contents like norms, cultural identities, values, rules of communication and so on. Procedural knowledge refers to the cultural processes through which cultural content affects behavior of the self or others. It includes awareness of cultures' influence on behavior and the ability to distinguish between cultures. The *skills* component is dynamic

Table 1. Sub-dimensions of CQ factors proposed by Van Dyne et al. (2012).

Metacognitive CQ	
Planning	Thinking about the culture, forming anticipations about cultural interaction and accordingly strategizing one's course of action in the anticipated context
Awareness	Being conscious of cultural influence on the behavior and cognitions of the self as well as others in a cross-cultural interaction
Checking	Evaluating and reviewing one's own assumptions and being able to adjust them when the actual experiences in a cross-cultural situation do not meet the currently held assumptions
Cognitive CQ	
Culture general knowledge	Knowledge of cultural aspects like visible artifacts, rituals, economic and political structure, etc., and also the invisible norms, values and assumptions
Context-specific knowledge	Comprises "declarative knowledge" about the manifestations of cultural components (norms, visible artifacts, values and so on) and "procedural knowledge" about how to function effectively in a cultural context (Van Dyne et al., 2012, p. 302)
Motivational CQ	
Intrinsic interest	Inherent interest in experiencing distinct cultures and interacting with culturally different others
Extrinsic interest	Valuing the tangible rewards that can be achieved through cross-cultural interaction
Self-efficacy to adjust	Sense of confidence in one's ability to effectively perform in cross-cultural settings and interact with culturally different others
Behavioral CQ	
Verbal behavior	To be able to manipulate one's vocalization (like changing tone, accent, talking slower/louder etc.) to effectively communicate in a cross-cultural setting
Non-verbal behavior	Ability to be flexible in non-verbal communication (adjusting gestures, facial expressions, interpersonal distance, and body language) to effectively communicate in cross-cultural settings
Speech acts	Ability to adjust the manner of communicating certain types of messages like apologies, invitations, disagreement; so as to match the cultural standards of appropriate behavior

Note: Table adapted from "Sub-Dimensions of the Four Factor Model of Cultural Intelligence: Expanding the Conceptualization and Measurement of Cultural Intelligence", by Van Dyne et al. (2012, pp. 298–306).

and evolves continuously through learning and social interaction. *Perceptual skills* involve the recognition of differences of culture and background of the self and others. It includes open-mindedness, tolerance of uncertainty, and non-judgmental attitude. *Relational skills* refer to skills like flexibility of thinking, sociability, empathy, which helps to establish amicable relations with culturally different others and learn from social interactions with them. *Adaptive skills* refer to the ability to choose culturally appropriate behavior from a behavioral repertoire and to generate new behavior (if required) that is suitable in a cross cultural context. It also involves shaping the context of cultural interaction itself by facilitating positive attitude of the culturally different people. Finally, *metacognition* entails being highly aware of one's thought processes, assumptions, skills and behavior of the self and culturally different others. It includes the ability to regulate the self's cognitive processes, abstraction and transfer of knowledge developed from specific interactions to be used in future interactions, effectively allocate cognitive resources, and compensate for individual deficits in cultural knowledge and skills. Metacognition subsumes the skills to convert cultural knowledge into culturally appropriate behavior (Figure 1).

Some overlap is observed between the two approaches. The knowledge component of Thomas et al. (2008) with its emphasis on cultural contents, structures and influence processes is parallel to the cognitive component purported by Earley and Ang (2003). Both of these conceptualizations focus on the ability to identify the major defining aspects of a culture that differentiates it from other cultures. Secondly, the adaptive skills component (Thomas et al., 2008) subsumes Early and Ang's concept of behavioral CQ. However, skills, according to Thomas et al. (2008) is a much broader concept and includes perceptual and
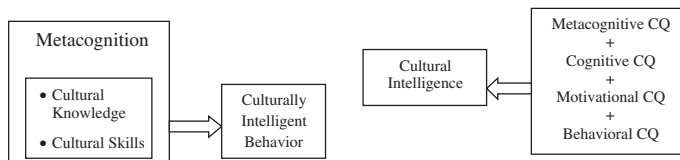
Figure 1. Comparison of the major CQ models.
Notes: The figure on the left side represents Thomas et al.'s (2008) process oriented model; and the one on the right represents Earley and Ang (2003) conceptualization. Adapted from "Cultural Intelligence Domain and Assessment", by Thomas et al. (2008, p. 128).

relational skills and the ability to change the context of cultural interaction itself, rather than just passively displaying context appropriate behavior. Furthermore, Thomas et al. (2008) expanded the scope of metacognition component to include the awareness of culturally different other's thought processes, along with the self's. Further, metacognition as suggested by Thomas et al. (2008) might correspond to some aspects of motivational CQ as both of these concepts are stated to mediate relationship between cultural knowledge and culturally appropriate behavior.

Empirical Findings

Compared to other measures of intercultural competency, empirical base of CQ is limited (Kim, Kirkman, & Chen, 2008) but continuously flourishing with multidisciplinary research attention. To further elucidate the construct; the emerging trends in research are discussed below.

Establishing the CQ Construct

Support for internal consistency of four-factor CQ model (Earley & Ang, 2003) was provided by Ang et al. (2007) reporting α value ranging from .77 to .82 for each factor. Additionally, Van Dyne et al. (2008, Study 3) provided temporal reliability evidence (α values ranging from .78 to .81). This study also reinforced the malleable characteristic of CQ as influenced by cultural experience and training.

The support for the construct validity was provided by Imai and Gelfand (2010) with reported comparative fit index (CFI) of .91; Van Dyne et al. (2008, Studies 1, 2 and 3) reporting CFI in the range of .92–.97. These researchers compared the four-factor model with other theoretically possible models. Factor structure was also supported (α over .70) in different sample groups like undergraduate students from different countries, foreign professionals, organizational workers, expatriate managers and leaders, several work groups like U.S. real estate agents, Pilipino laborers and military leaders (Matsumoto & Hwang, 2013). Furthermore, Ang et al. (2007) reported satisfactory temporal validity (CFI of .88–.97). They also supported convergent validity evidence citing significant correlations ($r = .07–.48$) between CQ factors and the Cross Cultural Adaptability Inventory (Kelley & Meyers, 1995) which is a widely used measure of cross-cultural competency. Moreover, significant correlations were confirmed on all factors between a self- reported and peer observed CQ measure (Van Dyne et al., 2008; Study 5).

Assessment Tools

Diverse CQ measures reflect the varied operationalization of the construct. The Cultural Intelligence Scale (CQS) developed by Ang et al. (2007) is the most popular and widely used measure. Authors reported satisfactory reliability (α ranging from .70 to .88) for each dimensions of the 20 item scale. Furthermore, Van Dyne et al. (2012) developed the 37 item Expanded Cultural Intelligence Scale (the E-CQS) to assess the sub-dimensions of four factor model. The authors stated satisfactory psychometric properties on student and working samples across 30 countries. A Short Form Cultural Intelligence Measure (SFCQS) was developed by Thomas et al. (2015). They reported acceptable validity and reliability (r value ranging from .77 to .91) based on the evidence from different countries, namely; France, USA, Australia, India, Indonesia, Turkey, Hong Kong.

Deviating from self-reported measures, a performance based measure entitled Intercultural Situational Judgment Test (iSJT) was developed by Ang, Rockstuhl, and Ng (2014). It predicted over 4% variance in task performance in international students and working adults (Rockstuhl, Ang, Ng, Lievens, & Van Dyne, 2015).

Conceptual Distinctiveness of CQ

CQ is distinct from personality (Thomas et al., 2015) but correlated to it (Ang, Van Dyne, & Koh, 2006). While personality is stable across time and situations (Costa & McCrae, 1992), CQ is malleable to change (Koo Moon, Kwon Choi, & Shik Jung, 2012). Personality influence behavior in general across a range of situations; while CQ allows effective functioning in multicultural settings (Ang & Van Dyne, 2008). Discriminant validity evidence of CQ from Big-Five personality measure was provided by Gardner (2006) reporting CFI of .95 and significant loadings on all factors.

CQ is also distinguished from general cognitive intelligence (IQ) and other non-academic intelligences like SI, EQ, and PI (Ang et al., 2007; Elenkov & Pimentel, 2008; Thomas et al., 2015). Crowne (2009) proposed that skills of EQ and CQ are required for being socially intelligent. But SI is distinct from each of them as only at times (but not always) EQ and CQ skills are necessary for effectively managing social relations. Therefore, although correlated, the three types of intelligences are distinct (Crowne, 2009). Kim et al. (2008) demonstrated divergent validity of CQ from EQ (CFI = .95). Ward et al. (2009, Study 3) demonstrated the discriminant validity of CQ from IQ reporting $r = .04$ for total CQ and in the range .02–.11 for each CQ factor. Furthermore, CQ has a weak positive relation to and incremental validity over and beyond IQ and EQ in predicting performance in intercultural situations (Rockstuhl, Seiler, Ang, Van Dyne, & Annen, 2011).

Antecedents to CQ

Personality forms an important predictor of CQ (Ang & Van Dyne, 2008). CQ was significantly linked to aspects of Big Five personality (Gardner, 2006). Openness to experience, that is, the tendency to be imaginative, creative, broad-minded, intelligent and adventurous (Costa & McCrae, 1992) significantly related to all CQ factors (Gardner, 2006; Ang & Van Dyne, 2008; Ng et al., 2012). Significant correlations were reported by Oolders, Chernyshenko, and Stark (2008) between the six sub facets of openness to experience and

CQ (r value ranging from .29 to .44). Ng et al. (2012) attributed this pattern of findings to the similar aspect of dealing with a novel situation involved in both CQ and openness to experience. Additionally, significant associations were reported between conscientiousness and metacognitive CQ; agreeableness and emotional stability with behavioral CQ; and extraversion was linked to cognitive, motivational, and behavioral CQ (Gardner, 2006).

Other major antecedents include international work experience (Shannon & Begley, 2008), international non-work experiences like studying and travelling abroad, number of countries visited (Tarique & Takeuchi, 2008) and level of cultural exposure (Crowne, 2008). Further, it was noted that CQ mediated the effect of international experience on intercultural effectiveness (Koo Moon et al., 2012). It was observed that highly culturally intelligent people were better able to capitalize from international experiences and transform their experiences into knowledge that guides their behavior in future cross-cultural interactions. Concurring to that, Ng, Van Dyne, and Ang (2009) theorized the benefits of using CQ as a selection tool to identify employees with "international executive potential" (p. 97).

Additionally, the ability to speak easily and accurately in the language that cross-cultural interactions require predicted all factors of CQ (Shannon & Begley, 2008). This finding has significant implications for educational policies to include more than one language in school curriculums. Furthermore, employment, education level (Crowne, 2008), virtual multicultural team exposure (Shokef & Erez, 2008), and CQ training programs (Koo Moon et al., 2012) were also found to be significant predictors of CQ.

Outcomes of CQ

Research consistently linked CQ to intercultural adjustment (Ang et al., 2007; Ward et al., 2009), psychological wellbeing, work adjustment (Ang et al., 2007), adaptive behavior and performance in multicultural settings (Ng et al., 2012; Thomas et al., 2008). Cultural adaptation and performance outcomes remained consistent across time in a sample of international managers and students (Ang et al., 2007).

In the organizational context, CQ was linked to efficient cross cultural communication and decision-making (Ang et al., 2007), global leadership (Rockstuhl et al., 2011), expatriate success, (Shaffer & Miller, 2008), lowered expatriate burnout (Tay, Westman, & Chia, 2008) and efficient performance (Oolders et al., 2008). Additionally, on a student sample CQ predicted cultural decision-making, cultural adaptation, and task performance above and beyond factors like IQ, EQ, cross-cultural adaptability, Big Five personality, social desirability, age, sex, and cross-cultural experience (Ang et al., 2007). CQ was also linked to team effectiveness in terms of affective interpersonal trust in cross-cultural dyads (Rockstuhl & Ng, 2008), acceptance and integration by other team members (Flaherty, 2008), and development of a global identity (Shokef & Erez, 2008). In intercultural pairs, CQ predicted trust, information sharing, cooperation and performance (Chua, Morris, & Mor, 2012; Imai & Gelfand, 2010).

Ang and Van Dyne (2008) proposed a nomological network stating that: (a) CQ mediates the effects of individual characteristics (like personality, demographics) on cultural adjustment (b) through intermediate perceptual and behavioral processes CQ affects intercultural adjustment (c) capabilities like IQ, EQ, leadership styles may affect cultural adjustment along with CQ (d) contextual variables like cultural distance and structure may moderate relationship between CQ and its outcomes. Except for the influence of contextual variables,

research findings have supported these contentions. CQ was found to influence effects of personality (Oolders et al., 2008) and international experience (Van Dyne et al., 2008) on intercultural adjustment. CQ factors predicted cooperative negotiation heuristics (Imai & Gelfand, 2010) and idea sharing (Chua et al., 2012) which promoted intercultural adjustment. Further, along with CQ, IQ also predicted effective cross-border leadership (Rockstuhl et al., 2011).

Discussion

Recognition of CQ in the research community is evident from the flourishing scholarly attention gathered by the construct (Ng et al., 2012). Empirical work on CQ established its relevance and conceptual distinctiveness from personality and intelligence. CQ is related to other intelligence forms; but its adaptive role in multicultural situations is unmatched by any other intelligence type. Evolution of the construct so far reflects a "tight link" between its research and practice (Ng et al., 2012, p. 44). Empirical consideration of the antecedents of CQ and its adaptive outcomes have emanated into CQ training programs that have been linked to increased awareness and acceptance of cultural difference (Thomas, 2006; Van Dyne et al., 2008). Advocating the relevance of CQ in society and institutions of today's interconnected world, this review encourages and suggests further theoretical and empirical refinement of the construct. Certain inconsistent findings reported in literature are also analyzed to establish cross-cultural relevance of the construct and its measures.

Appraising the theoretical conceptualizations we have discerned that the initial CQ model (Earley & Ang, 2003) offered a self-oriented conceptualization which focused on the self's ability to adjust to different cultures. Later, Thomas et al. (2008) expanded the construct to include environmental manipulation as part of CQ in addition to mere personal adjustment. Therefore, CQ involves shaping the context of intercultural interaction through the awareness of culturally different others' thought processes and expediting their positive attitudes (Thomas et al., 2008). Furthermore, Thomas et al.'s (2008) claim that motivational CQ is not a part of CQ can be debated since their concept of metacognitive component as a mediator between cultural knowledge reflects aspects of Earley and Ang's (2003) definition of motivational CQ. Also, the SFCQ scale (Thomas et al., 2015) contained items that reflect motivational CQ in the Ang et al.'s (2007) scale.

Besides the individual level of analysis; there is now an emerging trend of multilevel conceptualizations of CQ. A biological and cognitive level of enquiry was suggested by Ng et al. (2012) which are yet to gather major research momentum. Similarly in an organizational context, Ang and Inkpen (2008) introduced three CQ levels, which include: *managerial aspect* meaning aggregate of individual CQ of top management; *competitive aspect* referring to organizational processes that allow international knowledge integration; and *structural aspect* referring to organizational structural capacity for relationships with international business partners. Moreover, Ang et al. (2015) drew attention to conceptualize team level CQ citing the relevance of teams in any institutional functioning.

There has been a similar inception of multiple units of analysis in terms of antecedents of CQ. Since intercultural exposure and experiences predicted CQ (Shannon & Begley, 2008; Tarique & Takeuchi, 2008); there is a possibility that urban population, specifically the cosmopolitan people with their exposure to multiple cultures on a day to day basis might report higher CQ than rural or ethnic populations with limited intercultural experience.

Likewise, some cultures may also inhibit CQ by promoting extreme adherence to its own value sets, practices and norms to an extent to even institutionally prohibit material products and aspects considered to be part of other cultures. Moreover, every event of cultural contact is unique (Berry, 2005) depending on several factors like the degree of voluntariness of migration, whether migration is permanent or temporary, and each culture's contextual variables like its economic, historical, political aspects. According to Ang and Van Dyne (2008), contextual variables like cultural distance, attitude towards cultural diversity, cultural structure may influence relationship between CQ and its outcomes. Thus, CQ may play different roles in distinct forms of cultural contact and migration like forced migration of refuges and "asylum seekers",[4] immigration, other temporary migration, and second or later generation migration. Therefore, it is important to assess CQ within a larger environmental framework focusing on structure and characteristics of the society and culture. Advocating that need, Ng, Tan, and Ang (2011) proposed organizational level factors; stating that organizational values, practices, and reward structures that promote a global mindset provided opportunities for CQ development.

Multi-level conceptualization is a promising new development for the construct but it still remains at a nascent stage. As such, available measures provide an assessment of only individual level CQ and are also largely based on self-reported measures (Ang et al., 2015) whose efficacy is often probed (Ward et al., 2009). Hence, the need for methodological diversity was raised (Ang et al., 2015; Ward et al., 2009), concurring to which the performance based iSJT was developed by Ang et al. (2014). Furthermore, Leung, Ang, and Tan (2014) also emphasized the use of observer rating measures for the assessment of CQ. In this regard, Van Dyne et al. (2008) reported empirical validity by linking observer ratings with self-reported CQ and a measure of cultural adjustment. In addition, Gelfand et al. (2008) made suggestions for developing other kinds of measures like objective tests of facts pertaining to legal, economic, social systems associated with a culture; implicit measures of cultural knowledge using priming techniques; and cognitive mapping techniques to assess complexity of cultural knowledge. Ang et al. (2015), also suggested the need for evaluating the complementary nature of the measures and their incremental validity over each other in predicting unique outcomes.

While collating research and applications, CQ also attracted critical inquisition. Researchers like, Gelfand et al. (2008) and Ng et al. (2012) claimed the need for more precise theoretical formulations citing findings on predictors and specific outcomes of CQ factors to be "imprecise, inconsistent, and/or contradictory" (Gelfand et al., 2008, p. 378). Moreover, stating the original four dimensions theorized by Earley and Ang (2003) as redundant; Bücker et al. (2015) proposed a two dimensional CQ model naming them as internalized cultural knowledge and effective cultural flexibility. These dimensions were formed combining items of the original four factor CQS (Ang et al., 2007) and were found to be valid on sample of Chinese and Dutch international students (Bücker, Furrer, & Weem, 2016).

The credibility of CQ over other constructs like acculturation (Berry & Ward, 2006), cross-cultural competence, cultural literacy, global mindset (Blasco et al., 2012) was also questioned. Similar to CQ, these constructs also deal with cultural contact but conceptually they are distinct. CQ is largely an individual level ability. However, acculturation refers to individual and group level mutual accommodation between different cultural groups and the outcomes of such accommodation processes (Berry, 2005). Berry and Ward (2006) also drew attention to the lack of clear operational distinction between CQ and acculturative
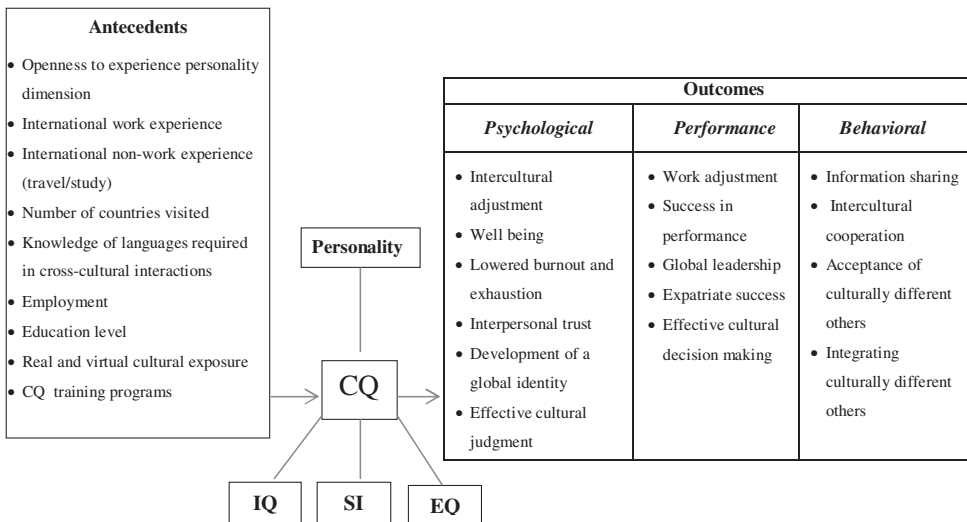
Figure 2. Summary of empirical findings on CQ.

adaptation. In an acculturation framework, adaptation is a possible outcome of cultural contact (Berry, 2006). According to Imai and Gelfand (2010), CQ accounts for the individual difference in cultural adaptation. Further, cross-cultural competence and global mindsets are outcomes of CQ and cultural literacy serves as an antecedent (see Figure 2).

Additionally, the methodologies employed to operationalize CQ was challenged by Blasco et al. (2012) stating it to be a "descriptive/prescriptive" construct rather than one developed on the basis of empirical observations of exemplars (p. 236). They further probed the assigned significance to metacognitive dimension of CQ and raised doubts on the assumption that conflicts in intercultural communications undermine CQ. They also expressed doubts about the trainable characteristic of CQ. Such debates around the findings expound the need for meta-analyses of existing work and to develop new avenues of theoretical enquiry.

Limitations and Future Directions

Despite our best efforts to review CQ research, we acknowledge the possibility of disregarding some publications. Further, we have discussed the critical enquiries by trying to endorse the utility of CQ through theoretical elucidation. However, the authority of our contending of critiques cannot be confidently established without empirical testing.

It is imperative for future research to focus on the operationalization of the proposed multi-level analysis units, that is, environmental, institute/organizational level CQ in terms of their processes, practices and structure. Focus should also be given on delineating the organizational, situational and environmental antecedents of CQ and their interaction with individual factors.

Moreover, the complementary nature and interaction of CQ, IQ and EQ in predicting important outcomes related to cultural adjustment needs empirical evaluation. Crowne (2009) subsumed CQ skills under SI which is considered to be one of the multiple intelligence forms that contribute "together to form a whole" that is the IQ (Albrecht, 2004,

p. 28). Therefore, it is likely that IQ and CQ might complement each other. Furthermore, correlation of CQ to EQ and SI (Crowne, 2009) and incremental validity of CQ over them (Rockstuhl et al., 2011) suggests complementarity of these intelligence forms.

In case of the CQ measures, the validity of the only performance based measure, iSJT (Ang et al., 2014) can be debated since it was based on relatively small sample sizes of each group ($N = 132$ for students, $N = 188$ for working adults, $N = 176$ offshoring professionals). Its validation needs further work and efforts are required to develop other performance based measures. Methodological diversity will permit triangulation of findings (Ng et al., 2012) and provide alternate measures to be used as and when appropriate for different research outcomes. It is also important to investigate the cross-cultural equivalence and validity of Bücker et al. (2015) modified two dimensional CQ model. Validity evidence that authors provided was based on self-reported criteria without any external criteria such as predictive validity assessment (Bücker et al., 2016). Finally, the predictive validity evidence of SFCQS (Thomas et al., 2015) was based only on self-reported criteria. Therefore, much work is also needed on its validation.

Besides, talking about culture in today's globalized world, one cannot ignore the unpleasant consequences of cultural clashes, hostility and discrimination which are often an innate part of daily life for cultural minorities. Such conflicts are a culmination of factors like cultural fanaticism, lack of awareness, social prejudices, perceived social injustice and so on. Often, communication gaps across cultural groups exacerbate clashes. Research must initiate CQ training programs in efforts to facilitate empathy and peaceful coexistence of distinct cultural groups in multicultural societies, while uplifting social position of typically discriminated communities. Furthermore, it is needed to assess ways to make CQ a proximal skill for populations who have had lesser intercultural experience opportunities, specifically those coming from rural areas and societies with authoritarian cultures. It is also essential to evaluate mechanisms underlying the positive influence of intercultural experience on CQ focusing on issues like learning styles, cognitive patterns, transfer of learning, and other possible moderator and mediating variables.

Existing training programs focuses only on individual's adjustment in multicultural context. They largely ignored the abilities to facilitate positive behavior of culturally different others as proposed by Thomas et al. (2008). This concept of manipulating the context of intercultural interaction introduced a new aspect and its proper operationalization has significant scope in CQ training. Individuals can be trained to positively modify intercultural environment and inculcate cultural respect and tolerance in culturally different others, thus, reducing cultural conflicts in any multicultural context. Although, largely unexplored, this other oriented aspect of CQ is ripe for further operationalization and empirical validation.

Applications of CQ construct in the field of clinical psychology may have significant implications. As language skills (Shannon & Begley, 2008) and interactions with culturally different others (Crowne, 2009) predicted CQ, it is likely that clinical conditions like autism, Asperger syndrome, pervasive developmental disorder and others marked by impaired social interaction, deficits in communication and language skills is likely to undermine CQ. This in turn may limit social opportunities available to the clinical subjects. Situation will be despondent particularly in cosmopolitan cities. Effectively integrating CQ in special education programs will promote the functional and social independence and development of clinical subjects. Additionally, cultural competence is important for all professionals in the field of special education and CQ training may serve to it.

Conclusion

CQ is rightly considered an "inexorable" requirement (Goh, 2012, p. 1) of today's world as it is of paramount importance to develop culturally intelligent citizens for any globalized nation's development. Integrating CQ in school curriculum through academic curriculum, classroom activities and reward structures (Goh, 2012) may serve an imperative approach to develop a sense of global citizenship in students at an impressionable age. CQ has emerged as an imperious skill to prosper in the emerging cosmopolitan cities and also in nations which are historically multicultural. Some qualms about the credibility of the construct have been raised, but CQ remains a vibrant research area and crucial capability for all populations experiencing cultural contact and intercultural communication.

Notes

1. EQ is the ability to effectively appraise and regulate emotions in self and others (Mayer & Salovey, 1993).
2. SI is the ability to understand people and effectively manage social relations with them (Thorndike, 1936).
3. PI is the ability to implement ideas to solve every day, real life problems (Sternberg et al., 2000).
4. Unlike the permanent migration of refugees, asylum seekers are people forced to migrate to a different country on a temporary basis (Berry, 2006), usually due to factors of war, internal insurgence, economic turmoil etc. in their country of origin to which they are to return once proper living condition is re-established.

Disclosure statement

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