

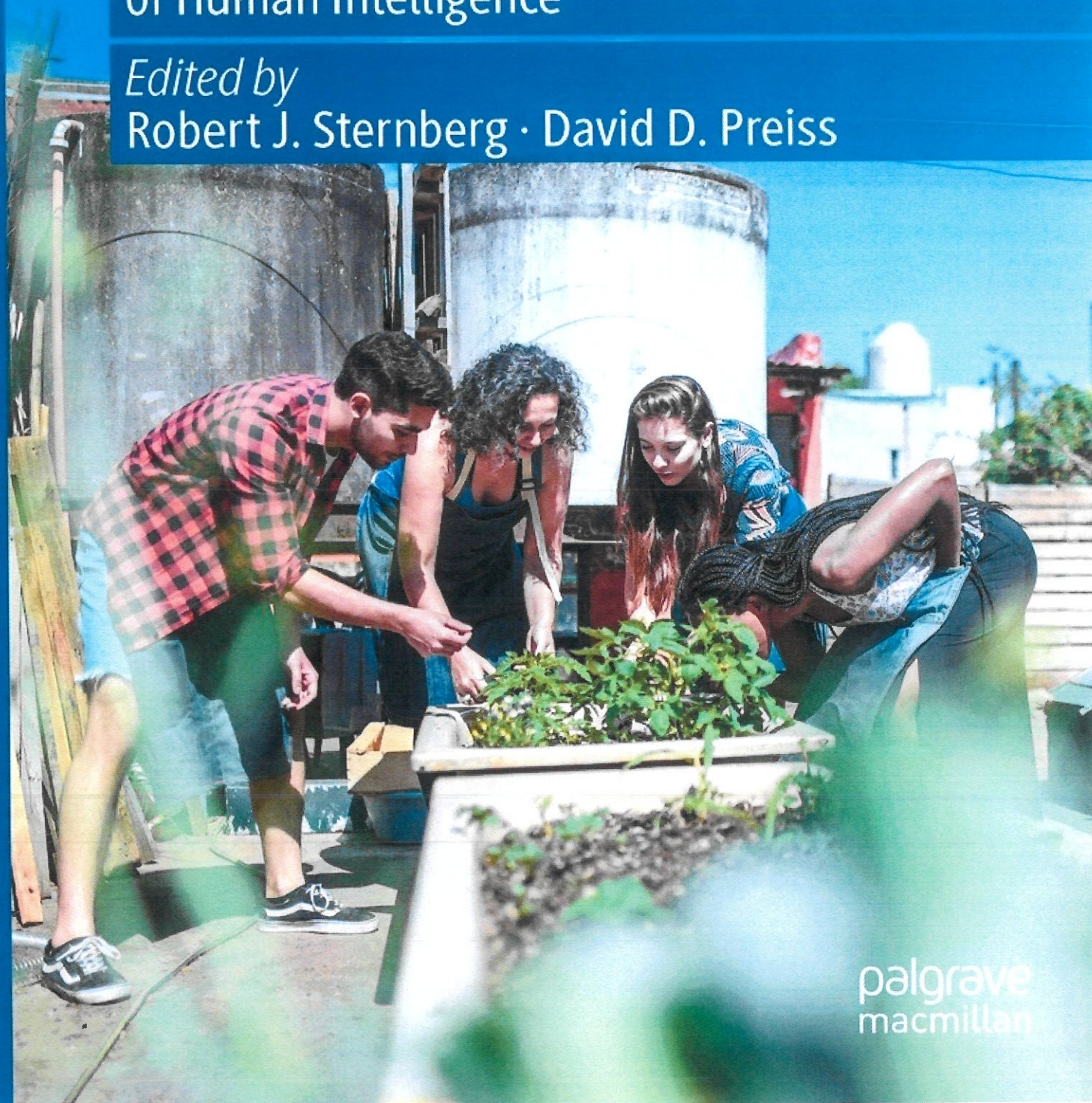


# Intelligence in Context

The Cultural and Historical Foundations  
of Human Intelligence

*Edited by*

Robert J. Sternberg · David D. Preiss



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# 8

## Cultural Intelligence: From Intelligence in Context and Across Cultures to Intercultural Contexts

Kok Yee Ng, Soon Ang, and Thomas Rockstuhl

Interest in intelligence permeates civilizations and cultures. From ancient philosophers such as Homer and Confucius (Niu, 2020; Sternberg, 2020a) to modern-day scientists around the world, the nature of intelligence has been a topic of lively debates. While intelligence is a “real phenomenon to be explained,” it is clear that “people’s perceptions of that phenomenon differ quite radically” (Sternberg, 2019, p. 1). Yet, “for all their disagreements, [scholars] agree on one thing—that intelligence crucially involves the ability to *adapt to the environment*” (Sternberg, 2019, p. 1, emphasis added).

We contribute to the scholarly discussion by expounding on the role of the “environment,” or context, in shaping the myriad views of intelligence in the literature. We surmise that context—defined as the “situational or environmental stimuli that impinge upon focal actors” (Johns, 2019, p. 22)—is a major reason for the multiple views of intelligence.

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Environmental stimuli may be temporal, geographical, cultural, cognitive, or emotional (Avgerou, 2019). Explicating the nature of context in intelligence research is therefore of essence in deepening our understanding of the literature and pushing the boundaries of intelligence research.

In this chapter, we describe three streams of research on intelligence that arise from different conceptualizations of context. The first stream of research—intelligence in context—responds to the traditionally narrow focus of intelligence as IQ by defining different intelligences for different contexts beyond academic settings. The second stream of research—intelligence across cultures—adopts an ethnological perspective, and examines how views of intelligence are shaped by national cultures. We propose a third stream of research—cultural intelligence, a perspective that integrates the first two streams of research. Essentially, cultural intelligence (CQ) shifts the research focus from a comparative approach to examining a capability to function effectively in the specific context of intercultural interactions (Earley & Ang, 2003). CQ is therefore a form of meta-intelligence crucial for the twenty-first century that is marked by global interconnectedness.

Below, we elaborate on the three streams of intelligence research and the role of context in each. We discuss our views of intelligence in conceptualizing CQ and conclude with implications for intelligence in the Anthropocene epoch.

## **Intelligence in Context: From School-Smart to Street Smart**

This stream of research defines intelligence as abilities required for success in the major domains of life that apply to most, if not all, societies (e.g., schools, social contexts, and real-world problem-solving). In fact, the origins of modern measurement of intelligence can be traced back to efforts to identify intelligence in a very narrow context—schools. Of all the early intelligence scholars, Alfred Binet is often seen as the “father of intelligence testing” (Aiken, 1996). In 1904, Binet was commissioned to develop tests to identify students who struggled with learning and



required special education. Together with his colleague, Theodore Simon, Binet devised tests to assess mental abilities relevant to success in schools. They include memory, reasoning ability, numerical faculty, comprehension, object comparison, and others (see reviews by Aiken, 1996; Sternberg, 2020b).

Although IQ was developed for the specific context of schools, it became widely used outside of academic settings. To some extent, this could be attributed to longitudinal studies of gifted students by Terman and colleagues (e.g., Terman & Oden, 1959) that showed a positive relationship between IQ and real-world measures of success. As a result, IQ became a popular selection tool for industrial and organizational psychologists. In a meta-analysis of 85 years of research in personnel selection, Schmidt and Hunter (1998) found that IQ tests were one of the strongest and most consistent predictors of job performance. Such research inadvertently fueled the international spread of standardized IQ testing and propagated the view of a “universal” cognitive intelligence that predicts superior human behavior in wide-ranging contexts.

There were, however, critiques to such a narrow view of intelligence. Several scholars observed that individuals who succeed in school settings may not necessarily adapt well in real-world settings (Sternberg & Wagner, 1986). Sternberg (2019) noted that the standardized set of cognitive abilities is “related only vaguely, if at all, to intelligence as adaptation” in broader contexts (p. 2). That is, there appears to be a clear distinction between academic success versus practical problem-solving, or what Sternberg characterizes as “book smart” versus “street smart” (Wagner & Sternberg, 1990). Moreover, Sternberg (2019) noted that despite increasing IQ scores in the world, many real-world problems remain unresolved.

As a result, several forms of nonacademic intelligences emerged. For instance, Wagner and Sternberg (1985) proposed the idea of practical intelligence, which encompasses broadly one’s ability to succeed in everyday life, including managing one’s jobs, one’s career, oneself, and others. Subsequently, Sternberg (1997, 2020c) proposed the theory of successful intelligence, which refers to one’s ability to achieve one’s goals in life by adapting to, shaping, and selecting environments, through a combination of analytical, creative, and practical abilities.

Similarly, Gardner (2006) rejected the view "that an individual who has a high *g* could be equally accomplished in any intellectual area" (p. 69). In response, Gardner (1993) developed the theory of multiple intelligences comprising eight different abilities that would predict success in different contexts such as occupations or social roles. These abilities are: linguistic, logical-mathematical, and spatial intelligence (typically relevant for academic contexts); musical and bodily kinesthetic (relevant for contexts involving the arts and sports); intrapersonal and interpersonal (relevant for social contexts); and naturalistic intelligence (relevant for contexts involving nature).

Other scholars have also advanced different types of nonacademic intelligences targeted at meeting demands of different contexts. Social intelligence, which refers to the ability to understand and manage people and to act wisely in human relations (e.g., Kihlstrom & Cantor, 2020), is important for contexts involving interpersonal interactions. Emotional intelligence, which refers to the ability to process and act on affective information gathered about both the self and others (e.g., Rivers et al., 2020), is important for contexts involving the effective management of human emotions.

## **Intelligence Across Cultures: An Ethnological Approach**

While the first stream of research examines intelligence in major domains of life applicable to all societies (e.g., schools, social contexts, real-world and problem-solving), the ethnological approach views intelligence in the cultural context of a society or nation (Ng & Earley, 2006). The cultural context of a nation comprises the objective and subjective culture (Triandis, 1994).

Objective culture, commonly studied by anthropologists, refers to observable and visible artifacts and practices of cultures that address fundamental human needs of gathering food and relating to others, the environment, and the universe (Brown, 1991). Examples include different economic, political, legal, religious, social, and education systems;

languages, technologies, and arts and crafts. Subjective culture, commonly studied by cross-cultural psychologists, refers to the less visible psychological features of culture such as shared values, beliefs, norms, and assumptions. Common dimensions of subjective culture include values of individualism-collectivism, power distance, or uncertainty avoidance (e.g., Hofstede, 1980; House et al., 2004; Triandis, 1995).

Greenfield (1998) succinctly captured the essence of the ethnological approach to intelligence when she described culture as defining intelligence by what is adaptive in their particular niche. Sternberg and Grigorenko (2004) observed that “intelligence, considered outside its cultural context, is in large measure a mythological construct” (p. 1428). Similarly, cross-cultural scholars have argued that intelligence is a cultural product, in that different cultures ascribe different meanings and expressions to intelligence (e.g., Berry & Ward, 2006; Sternberg & Kaufman, 1998).

Evidence that culture affects intelligence comes from several streams of research. One stream of cross-cultural research examines and compares the philosophical underpinnings and operational definitions of intelligence across culture. For example, Yang and Sternberg (1997a) reviewed Chinese philosophical conceptions of intelligence. They noted that the Confucian perspective not only shares with Western notions the idea that intelligence relates to learning capabilities but also emphasizes the characteristic of benevolence and of doing what is right. By contrast, the Taoist tradition places greater emphasis on humility, freedom from conventional standards of judgment, and deep knowledge of oneself and external conditions.

A second stream of cross-cultural research compares lay perceptions of intelligence, or what Sternberg (1985) termed the “implicit theories of intelligence” across different cultures. These studies have a long history. Early examples include Berry’s (1966) study of the perceptual abilities between Inuit in the Canadian Arctic and Temne in Sierra Leone, and Serpell’s (1974) exploration of lay perceptions of intelligence among the Chewa adults in Zambia. Several extensive reviews of this literature demonstrate that different cultures possess different implicit theories of intelligence (e.g., see Niu, 2020; Sternberg & Kaufman, 1998).

For instance, findings from the United States show that people tend to emphasize cognitive abilities akin to those measured by IQ tests (Neisser, 1979) as well as problem-solving and social competence (Sternberg et al., 1981). Studies in China show that while cognitive abilities are central to intelligence (Wan et al., 1997), qualities such as diligence and malleability (e.g., Fwu et al., 2017); values such as benevolence and filial piety (Chen & Wong, 2014); and intrapersonal knowledge and skills to express oneself appropriately in social settings are just as important (e.g., Yang & Sternberg, 1997b). In Africa, intelligence goes beyond having knowledge and cognitive abilities, to include social skills that facilitate harmonious and stable relationships (Grigorenko et al., 2001).

A third stream of research examines cross-cultural differences in the relative effects of intelligence on adaptation outcomes. In a study of urban versus rural Yup'ik children in Alaska, Grigorenko et al. (2004) assessed children's academic and practical intelligence and compared their effects on adaptation skills valued by the Yup'ik people (e.g., good thinker, respectful of elders, and great hunter). As expected, results show that practical intelligence, assessed by tests of everyday-life knowledge (e.g., knowledge of herbs and berries, and fishing), was more predictive of adaptation skills for rural children than urban children because rural children engaged in more activities with nature than their urban counterparts.

Another example can be found in the management literature. Miao et al. (2018) hypothesized that leaders' EQ has a stronger relationship with subordinates' task performance and organizational citizenship behaviors in low power distance, collectivistic, feminine, and high uncertainty avoidance cultures. Using a meta-analysis of 17 samples, the authors found general support for their hypotheses, suggesting that culture serves as a boundary condition to the intelligence-performance relationship.

In summary, the ethnological perspective suggests that culture influences intelligence in two ways. First, culture exerts a main effect on intelligence by shaping the philosophical conceptions and implicit theories of intelligence, as demonstrated in the first two streams of research described in this section. Second, culture can also serve as a boundary condition that affects the magnitude of the relationship between intelligence and



outcomes, as demonstrated in the third stream of research described above. This latter view of the relationship between culture and intelligence is consistent with arguments of trait-activation theory (Tett & Burnett, 2003), whereby the cultural context accentuates or dampens the impact of intelligence on outcomes.

## **Intelligence in Intercultural Context: Cultural Intelligence**

The “intelligence in context” and the “intelligence across cultures” perspectives examine the nature of intelligence in a relatively bounded context. The former examines the abilities required to succeed in a domain of life (e.g., academic, social, and musical), while the latter examines the abilities required to succeed in a particular culture. Both perspectives assume a bounded and stable context that poses clear demands on individuals, which in turn lead to a set of core abilities required for effective adaptation in these contexts.

However, what happens when the context is no longer clearly bounded with distinct demands and cultural “rules”? What if the boundaries of the context are porous and dynamic, as characterized by today’s increasingly “flat” (Friedman, 2005) and interconnected world? As Bandura (2001, p. 12) noted, “Revolutionary advances in electronic technologies and globalization are transforming the nature, reach, speed, and loci of human influence.” Within this “flatter” world, cultural boundaries are blurred as people comingle in all spheres of life.

The new reality of global interconnectedness implies that intelligence can no longer be examined in specific, bounded cultural contexts. Instead, we need a new form of intelligence that embraces a much broader and diverse context where a confluence of cultures exists. Cultural intelligence (Ang & Van Dyne, 2008; Earley & Ang, 2003) offers a third perspective of intelligence that shifts the focus from a cross-cultural comparative approach to one that emphasizes intercultural interfaces.

Soon Ang first recognized the need for a new intelligence in the 1990s in the wake of the impending “Y2K” bug (Ang, 2021). As huge numbers

of programmers were needed, she helped organizations select programmers from different countries, including Australia, China, India, Malaysia, the Philippines, Vietnam, and others. Yet, despite being selected for their technical competence, cognitive ability, and practical intelligence, the programmers failed to work effectively with one another. Differences in cultural norms and habits created huge conflicts between local managers and programmers, as well as among the programmers from different countries. The powerful yet invisible role of culture was striking, and it became clear that having a knowledge of cultural differences was not enough. This experience and realization sparked the journey into conceptualizing and measuring this new form of intelligence.

## Conceptualization of Cultural Intelligence

The concept of cultural intelligence (CQ) was first introduced in Earley and Ang's (2003) book, published by Stanford University Press. Defined as an individual's capability to function effectively in contexts characterized by cultural diversity, CQ aligns with the widely accepted definition of intelligence as an ability to adapt to the environment, with several important nuances and assumptions.

First, CQ emphasizes a *capability* rather than an ability. The APA dictionary defines ability as an "existing competence or skill to perform a specific physical or mental act" and capability as "an ability, talent, or facility that a person *can* put to constructive use" or "a characteristic that *can* be developed for functional use" (emphasis added). These definitions reveal a subtle but important distinction: ability connotes demonstrated performance, while capability emphasizes the potential for performance. We view intelligence as a potential for performance rather than demonstrated performance to avoid confounding the criterion (adaptation/performance) with the predictor (intelligence).

Second, we use the phrase "function effectively in culturally diverse contexts" to suggest that intelligence goes beyond merely adapting, or changing oneself to fit the context (Sternberg, 2019). Here, we concur with Sternberg's more expansive view of adaptation that includes shaping the environment and finding new environments. We argue that to

succeed in culturally diverse contexts where the “rules” for interactions are varied and even conflicting, individuals need the meta-intelligence as well as skills to enact one of these options: to adapt, to adhere to one’s culture, or to create a new culture.

Third, we view CQ as malleable, which means it can be developed through experience, education, and training. This is consistent with Gardner’s (1993) argument that for a construct to qualify as an intelligence, it must show a definable developmental history. There is growing empirical evidence that CQ can be developed. For instance, Raver and Van Dyne (2017) reviewed 28 studies on CQ training interventions and found that training enhanced all four factors of CQ, although effects tend to be stronger for cognitive and metacognitive CQ, than for motivational CQ and behavioral CQ.

Fourth, our conceptualization of CQ as a multidimensional construct clearly supports the view of intelligence as going beyond cognitive abilities. Specifically, we draw on Sternberg’s (1986) “multiple loci” of intelligence argument to highlight the importance of motivation, cognition, metacognition, and behavior for a more comprehensive definition of intelligence. CQ is therefore an aggregate multidimensional construct that comprises four dimensions: (1) motivational CQ—one’s energy and effort directed toward functioning effectively in intercultural situations; (2) cognitive CQ—one’s knowledge about cultural similarities and differences; (3) metacognitive CQ—one’s level of conscious cultural awareness during intercultural interactions; and (4) behavioral CQ—one’s repertoire of verbal and nonverbal behaviors for intercultural interactions (Ang & Van Dyne, 2008; Ang et al., 2007).

In a major conceptual refinement, Van Dyne et al. (2012) advanced more granular subdimensions to allow for a better-articulated conceptual space for each CQ factor. Specifically, metacognitive CQ comprises subdimensions of planning, awareness, and checking. Cognitive CQ includes both culture-general and culture-specific knowledge. Motivational CQ includes intrinsic interest, extrinsic interest, and self-efficacy for intercultural encounters. Behavioral CQ includes subdimensions for repertoires of verbal behavior, nonverbal behavior, and speech acts.

Specifying subdimensions of the four broad CQ factors facilitates (a) more nuanced theorizing, especially in terms of explicating underlying

processes of CQ effects; (b) more precise matching of cultural intelligence predictors and outcomes; and (c) identifying concrete ways to train cultural intelligence (Ang, forthcoming). Importantly, the distinction between culture-general and context-specific knowledge in cognitive CQ enables a more contextualized application of CQ to different domains. Culture-general knowledge refers to understanding of universal (etic) elements of culture, as measured in the original Cultural Intelligence Scale (CQS). By contrast, context-specific knowledge assesses understanding of domain-specific (emic) norms and expectations of a specific group of people. Domains could be a country, a specific subculture based on professions (e.g., business managers, teachers, and diplomats), or demographic groupings (e.g., age and gender). Incorporating context-specific knowledge offers a “plugged and played” source for more precise predictions in different contexts.

## CQ Versus Other Intelligences

How does CQ relate to other forms of intelligence, such as IQ, EQ, practical intelligence, and social intelligence? According to the “intelligence in context” argument, CQ differs from other forms of intelligence by its context. As described earlier, IQ tends to focus on academic contexts, EQ and social intelligence on social contexts, and practical intelligence on real-world problem-solving contexts. CQ, by contrast, focuses on a context characterized by diverse cultures. Although CQ and EQ involve interpersonal interactions, EQ focuses on the ability to perceive and manage emotions without consideration of the cultural context, whereas CQ explicitly addresses the role of cultural context (see review by Ang et al., 2020b). Moreover, CQ’s four factor structure, derived from Sternberg’s (1986) multiple-loci argument, is unique and distinct from the other intelligences.

Empirical research has supported the conceptual distinctiveness of CQ from cognitive ability (e.g., Rockstuhl et al., 2011) and EQ (e.g., Groves et al., 2015). In addition, empirical evidence suggests that CQ has incremental predictive validity over cognitive ability and EQ in predicting



cross-border leadership effectiveness (Rockstuhl et al., 2011) and negotiation effectiveness (Groves et al., 2015).

## Contributions of CQ to Research and the Real World

In a reflection piece on the future of intelligence research, Hunt (2011) noted that “the biggest challenge (and opportunity)” will be to expand research...from observations within the conventional testing paradigm to ... understanding how intelligence is used in the workplace and in everyday life” (p. 882). CQ, developed at the turn of the twenty-first century, represents a concerted effort to understand and tackle a grand challenge and opportunity for humankind—globalization.

CQ advances research on intelligence by integrating the “intelligence across cultures” and “intelligence in context” perspectives to address new demands posed by our increasingly global environment. Whereas the “intelligence across cultures” perspective proposes culture-specific conceptualizations of intelligence, the CQ perspective advances a new, culture-general intelligence that transcends cultural boundaries (Ng & Earley, 2006). In essence, CQ offers a form of “meta-intelligence in context,” where the context is composed of diverse cultural settings.

CQ also advances empirical research on intelligence through validated report-based (Ang et al., 2007; Van Dyne et al., 2008, 2012) and performance-based measures (Ang et al., 2014; Rockstuhl et al., 2015; Rockstuhl & Lievens, 2021). Report-based measures involve self- and/or observer ratings of CQ, while performance-based measures assess a person's CQ through a series of multimedia situational judgment tests (SJTs).

To date, most empirical research on CQ uses the report-based, 20-item CQS developed and validated by Ang et al. (2007). The CQS has been found to demonstrate factor structure validity and cross-cultural measurement equivalence, two criteria set out by Van de Vijver and Leung (2009) for intercultural instruments (for reviews, see Ang et al., 2020a; Leung et al., 2014). Importantly, CQ has amassed compelling evidence regarding its predictive validity. A meta-analysis involving 167 empirical papers and 199 independent samples ( $N = 44,155$ ) revealed that CQ relates meaningfully to a diverse range of outcomes (Rockstuhl & Van

Dyne, 2018). Examples of outcomes include (1) sociocultural adjustment (e.g., Chen et al., 2010); (2) cultural judgment and decision-making (Ang et al., 2007); (3) job performance, including task (e.g., Chen et al., 2012) and contextual performance (Ng et al., 2019); (4) leadership performance (e.g., Rockstuhl et al., 2011); (5) negotiation effectiveness (Imai & Gelfand, 2010); (6) creativity (Chua & Ng, 2017); and (7) cultural learning (Morris et al., 2019).

The impact of CQ on real-world outcomes is profound (Ang, forthcoming). In terms of research, CQ influences research in as many as 23 academic disciplines, including management, social sciences, economics and finance, arts and humanities, decision sciences, engineering, and medicine. CQ is cited in 763 journals, proceedings, and book chapters (SCOPUS citation report, Sept 2019), and has spawned 1304 doctoral theses in 20 disciplines (ProQuest Dissertation).

Beyond academia, CQ shapes the policies and practices of global human capital across a wide range of industries (including aviation, consulting services, education, finance, high tech, food, real estate, oil and gas, etc.) as well as government and nonprofit sectors (e.g., armed forces, education, mental health, judiciary courts, counseling, public service, and religious missions). To date, more than 100,000 people across 161 nations have received their CQ profile via the CQS (Ang et al., 2007) or the expanded CQS (Van Dyne et al., 2012).

## Future Research Directions

As we step into our third decade of research on CQ, it is timely to pause and reflect on what the future of CQ, as well as the broader field of intelligence, could look like. The world is now witnessing some of its greatest environmental, health, economic, and geopolitical crises. We are also seeing a dramatic increase in conflicts arising from social inequalities across the world, including ethnic/racial, religious, and gender discriminations. Against this context, Sternberg's (2019) call for scholars and society to "think more about what they mean by 'intelligence'" (p. 12) is timely. The aim of clarifying and redefining intelligence in the Anthropocene

epoch is to identify and teach skills that will sustain our environment and propagate the human races.

The term “Anthropocene epoch” was introduced by the atmospheric chemist Paul J. Crutzen and limnologist Eugene F. Stoermer to describe the growing impact of human activities in shaping geology and ecology on a global scale (Crutzen & Stoermer, 2000). Thus, the term “Anthropocene” recognizes that humans *actively* shape their environment. In this sense, the notion of Anthropocene aligns well with our agentic view of intelligence as a capability to function effectively in a particular environment. Below, we offer three ideas to advance our understanding of CQ and the broader field of intelligence to resolve the global grand challenges in the Anthropocene epoch.

## The Role of CQ in Resolving Global-Local Tensions

Despite rising sentiments of nationalism and protectionism, the fates of nations are more intertwined today than ever before. Many pressing issues of our time, ranging from dealing with global pandemics to addressing global climate change, represent inherent dilemmas between global and local concerns. An example is the recent case of vaccine intellectual property (IP) rights in the wake of the Covid-19 pandemic. To boost vaccine supplies in poorer countries, U.S. president Joe Biden mooted the idea of waiving IP rights related to vaccines production at the World Trade Organization. Many European countries however, rebuffed the idea. Pope Francis, who is a staunch proponent of fair access to vaccines, attributed the reluctance to waive vaccine IP rights to a “virus of individualism” (May 8, 2021; Reuters/aj). He continued to describe that “a variant of this virus is nationalism, which prevents, for example, an internationalism of vaccines.” Pope Francis astutely pointed out the global-local dilemma underlying the IP waiver issue.

Addressing the global-local dilemma requires leaders to detect and balance local and global demands and do so in a way that is culturally intelligent. This offers exciting opportunities for future research on CQ. One such opportunity would be to shift from variance-based to process-based theorizing in research on CQ. Variance-based theorizing emphasizes how

individual differences in CQ relate to outcomes, while process-based theorizing seeks to understand what culturally intelligent individuals do to be effective (Mohr, 1982). In essence, variance-based theorizing focuses on the “what” and “why” questions, while process-based theorizing focuses on the “how.” To date, we know much more about the “what” and “why” of CQ (see meta-analyses by Rockstuhl & Van Dyne, 2018; Schlaegel et al., 2021), and much less of the “how.” For example, we know little of the actual strategies that leaders use to resolve global-local dilemma, and which strategies are more effective. Should leaders, for instance, toggle between global and local demands, akin to what the literature describes as a frame-switching model (LaFromboise et al., 1993), or combine elements of both global and local demands in a type of fusion model (Janssens & Brett, 2006)?

To answer these questions, we suggest that future research could adopt scenario-based methods to identify effective versus non-effective strategies. For instance, Barros et al. (2020) presented a series of multimedia conflict scenarios to C-suite executives and senior leaders from more than 40 countries and conducted verbal protocol analyses on how they resolved these conflicts. Surprisingly, they discovered that leaders who were rated by their peers as highly effective in conflict management often compromised to resolve conflicts. This finding debunks the hype on win-win strategies and shows that compromises can be an effective, if not a more realistic, conflict resolution strategy in real life. Future studies could adopt a similar research methodology to construct a taxonomy of strategies for resolving global-local dilemmas.

## **CQ 2.0: From Horizontal to Vertical Differentiation**

Diversity is a double-edged sword, depending on the view we take. When we view diversity through a horizontal differentiation lens (Bunderson & Van der Vegt, 2018), where different people have different values, perspectives, and skills sets, we are more amenable to detect and leverage on differences. Even though these differences could create anxiety and uncertainty (Gudykunst, 1993) due to unfamiliar interactions, they can be mitigated and overcome through cultural knowledge and training.



Horizontal differentiation is the dominant lens adopted in cross-cultural competence research. Similarly, CQ research to date has adopted a horizontal differentiation lens, viewing people as different because of their deep-rooted cultural values, worldviews, and practices, and identifying skills to help people detect and resolve differences.

However, when we view diversity through a vertical differentiation lens (Bunderson & Van der Vegt, 2018), where different people are conferred with different power, status, prestige, and privilege, we get embroiled in social injustice, a phenomenon that is inherently negative and potentially explosive. Recent global social movements such as #MeToo and Black Lives Matter underscore an urgent need for managing diversity through a vertical differentiation lens. This offers a fertile ground for future CQ research to address. We term this research as CQ 2.0 to reflect the qualitatively different phenomenon from that which current CQ research is addressing.

The vertical differentiation lens is premised on social injustice, status, and power disparities (Bunderson & Van der Vegt, 2018). Status characteristics theory suggests that evaluations people make of others often result in unequal social interactions. Due to sociohistorical events of colonization, oppression, and marginalization, attributes such as nationality, ethnicity, and gender could evoke inequality and power imbalance during interpersonal encounters (Berger et al., 1980). Interactions characterized by a vertical differentiation lens create different concerns for members of the dominant group versus the minority groups. For instance, research on interracial interactions demonstrates that members of the minority group are concerned with receiving prejudicial treatment (Shelton et al., 2005), while members of the dominant group are concerned with appearing prejudiced (Vorauer, 2006). A study by Dupree and Fiske (2019) shows that in order to avoid appearing prejudiced, dominant group members tend to downplay their self-presentation of competence during interactions with minority group members, which inadvertently results in patronizing behaviors.

Future research could broaden or reconceptualize the dimensions of CQ required to address interactions between dominant and minority group members. Although the existing four-factor framework (i.e., meta-cognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ)

could still hold, the specific nature of each CQ factor would have to incorporate new knowledge bases and skills to detect and manage unequal social interactions often riddled with prejudice, micro-aggressions, discrimination, and victimization.

## **A New Intelligence for the Anthropocene Epoch**

In addition to furthering research on CQ, we offer the idea of a new intelligence for the Anthropocene epoch that extends beyond the capability to function effectively in a culturally diverse context. While CQ specifies a set of knowledge and skills required to adapt to, shape, or make new cultures, what is perhaps missing is a more “spiritual” element. Emmons (2000) defined spirituality as “the personal expression of ultimate concern” (p. 4) and argued that it is a critical capability that facilitates the achievement of goals and problem-solving. Key to the concept of spirituality is the idea of transcendence—“a fundamental capacity of persons that enables a person to sense a synchronicity to life and to develop a bond with humanity” (Emmons, 2000, p. 10).

We define this new form of intelligence as the capability for individuals to create an “overview effect.” The overview effect in psychology refers to having an expansive mindset that views humanity as a whole (Shapiro et al., 2019). White (2014) coined the term after discovering that astronauts who returned to earth from their space travel commonly reported a profound “shift in their view of human relations, experiencing the world’s troubles as secondary to the Earth as a whole and believing that even significant struggles can be resolved through a more holistic perspective” (Shapiro et al., 2019, p. 361). Astronaut Edgar Mitchell described the experience as an “overwhelming sense of oneness and connectedness ...accompanied by an ecstasy” (Hunt, 2015, p. 73).

Global conflicts fundamentally stem from a deep-seated distinction between “us” and “them,” as suggested by social identity theory (Tajfel & Turner, 1986). Shapiro (2017) coined the term “tribes effect” to describe a divisive mindset that bifurcates one’s identity into an oversimplified in-group–out-group distinction. The capability to create an overview effect is therefore the antithesis to the tribes effect. We suggest that future

research on intelligence could define and measure capabilities that will help parties “redefine their identity in the conflict as not purely tribal but also communal, cultivating a broader affiliation that is connective rather than adversarial, compassionate rather than self-righteous, and open to, rather than insulated from, learning new perspectives” (Shapiro et al., 2019, p. 361).

## Conclusion

As with many scholars, we view intelligence as a set of capabilities that enable individuals to adapt to their contexts. We argue that intelligence is inherently rooted in contexts, and describe three streams of intelligence research that arise from different conceptualizations of contexts. The first stream of research—intelligence in context—responds to the traditionally narrow focus of intelligence as IQ by defining different intelligences for different contexts beyond academic settings. The second stream of research—intelligence across cultures—adopts an ethnology perspective and examines how views of intelligence are shaped by national cultures. The third stream of research—cultural intelligence—shifts from a comparative approach to examining a capability to function effectively in the context of intercultural interactions (Earley & Ang, 2003). In doing so, CQ integrates the “intelligence in context” and “intelligence across cultures” perspectives to tackle one of the grand challenges that humankind faces—globalization.

Humanity’s enduring interest in intelligence testifies to the power of the construct. The biggest challenge for intelligence research, however, is to ensure its relevance to individuals and to humankind in the Anthropocene epoch. To sustain the relevance of intelligence, research on intelligence should endeavor to develop constructs that reflect the changing contexts and demands of the twenty-first century. In this spirit, we offer future research directions to advance CQ research and propose a new form of intelligence to mitigate destructive global conflicts and sustain humankind.

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