


# Exploring cultural intelligence truths: A systematic review

**Authors:**

Anthony Solomon<sup>1</sup>   
Renier Steyn<sup>1</sup>

**Affiliations:**

<sup>1</sup>Graduate School of Business  
Leadership, University of  
South Africa, South Africa

**Corresponding author:**

Anthony Solomon,  
78799139@mylife.unisa.  
ac.za

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**Orientation:** To identify and report on cultural intelligence truths.

**Research purpose:** To explore cultural intelligence truths by means of a systematic review of the cultural intelligence literature.

**Motivation for the study:** Cultural intelligence truths must be systemised if the business and academic communities are to derive optimal value from the diverse knowledge base.

**Research design, approach and method:** The research was qualitative in nature, comprising a systematic literature review. The period covered was from 01 January 2002 to 31 May 2015. The final number of included studies was 76, representing 48 different journals. Cultural intelligence hypotheses were identified and thematically categorised. Validated hypotheses constituted truths (i.e. truth statements). Key findings are both reported and commented on.

**Main findings:** Cultural intelligence hypotheses may be classified into 13 separate themes plus a 'not categorised' group. In total, 60% of the hypotheses on cultural intelligence have given rise to truth statements. Accordingly, there remains some divide between theorised cultural intelligence relationships and how these have played out under empirical investigation.

**Practical managerial/implications:** Business professionals will find it easier to consume the cultural intelligence literature, thereby facilitating their understanding of how best to leverage the knowledge in equipping the workforce to function optimally in cross-cultural interfaces. Scholars will be better positioned to tailor the focus and structure of cultural intelligence studies going forward.

**Contribution:** Cultural intelligence truths have been systematically identified, organised and reported on.

## Introduction

Globalisation, a force firmly rooted within the current era of unprecedented technological advancement, is increasingly exposing both individuals and organisations to situations of cultural heterogeneity in which they are required, and indeed expected, to function effectively (Alon et al., 2016). With the aim of explaining why some persons are able to operate more successfully than others in such circumstances, Earley and Ang (2003), through their seminal work, conceptualised cultural intelligence (CQ). CQ targets capabilities to comprehend, process and act effectively in an array of intercultural exchanges and interactions (Ang et al., 2007).

CQ is presently experiencing increased momentum in terms of research efforts to better explain the construct. In this regard, Bücken, Furrer, Poutsma and Buyens (2014, p. 2068) affirm that CQ is 'attracting growing attention in academic literature'. In evaluating such literature, it would be important to ascertain the degree to which it situates within the general body of scientific knowledge framework (see Babbie & Mouton, 2011), particularly in terms of the truth statement elements thereof. Although there have been some efforts to explore the literature – for example, Ang, Van Dyne and Rockstuhl (2015), who reported on the origins, conceptualisation, evolution and methodological diversity of CQ, and Bovornusvakool, Ardichvili and Rana (2015), who considered different CQ approaches – the authors are of the view that further value could be provided if the CQ truths were to be systemised accordingly.

Truth statements consist of knowledge declarations and may arise from testing hypotheses (Schutte & Steyn, 2015), that is, they are generated following the production of empirical evidence

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in support of the hypotheses in question. As such, they are indicative of theory reflected as reality. Hypotheses comprise statements of expectation concerning a proposed relationship between two variables (De Vos, Strydom, Fouche & Delpont, 2013) and are normally associated with quantitative research (Schutte & Steyn, 2015) in that they necessitate the use of measures (Whetten, 1989).

## Purpose

The purpose of this study was to report on CQ truths. As a result, non-validated hypotheses were not considered.

## Research question

The question this study aimed to address was the following: What do the CQ truths reveal?

## Literature review

As this study covered CQ truths, the literature review targeted an explication of both truth and CQ and was hence divided into two separate sections. In the first section, attention was devoted to understanding the concept of truth and the role that science plays in the quest to achieve it. The second section covered CQ and its constituent dimensions.

### Truth and scientific knowledge

For millennia, the topic of truth has stimulated much debate (Glanzberg, 2014). Disagreement exists amongst scholars as to a uniform definition of truth (Badenas, 2012) and this has given rise to a variety of different truth theories, examples of which include the correspondence, coherence and the deflationary theories.

The correspondence theory argues that truth is with a fact and is most often attendant with metaphysical realism, that is, truth is the equation of thing and intellect (Marian, 2015) or the 'correspondence between a statement and the reality' (Badenas, 2012, p. 8). As such, the correspondence theory suggests that a proposition is true only when that proposition and a fact actually correspond. Young (2015) indicates that the coherence theory of truth asserts that a proposition is considered to be true when it is in coherence with a definite set of propositions. The coherence theory thus differs from the correspondence theory in that in the former the truth of a proposition ascends from the existence of an association between additional propositions and the proposition being considered, whilst in the latter a proposition is assessed as true when it is related to a worldly fact. The deflationary theory of truth holds that saying a statement is true is actually nothing more than to declare the statement itself (Stoljar & Damjanovic, 2014). Galinon (2015) points out that the deflationism thesis contends that the 'truth predicate has no explanatory power', that is, truth is 'a purely expressive device' (p. 268).

Sloan (1979, p. 2) points out that 'science is a search for the truth', whilst Weingart (2002, pp. 704–705) notes that

'science produces "true" knowledge'. It follows on that scientific knowledge is motivated by the pursuit of truth through evidence accumulation (Babbie & Mouton, 2011). In contrast, ordinary knowledge, which Babbie and Mouton (2011, p. 5) observe to be 'unsystematic and rather haphazard', is predicated upon either 'personal authority' or 'secondary sources'.

Scientific knowledge thus holds a hallowed position in authoritative dialogues which has resulted in it becoming the archetype of logical practice (Fuchs, 1992). It follows on that knowledge generation through scientific endeavour remains inimitable (Weingart, 2002) in the search for truth. Indeed, Mouton (2013, p. 138) states that 'the search for "truth" or "truthful knowledge" is the overriding goal of science'. To this end, a hypothesis or theory is recognised as 'true' when it has been shown that it is a 'good approximation of reality' (Babbie & Mouton, 2011, p. 10).

Srnka and Koeszegi (2007, p. 38) remark that 'the accepted view in the business and management sciences is that "good" science is based on research leading to results that are valid, reliable, and thus generalizable'. As a basis for conceptualising research problems and the rationality of the research process, Mouton (1996) proposed a structure comprising 'three worlds'. The first world consists of everyday life and lay knowledge (Mouton, 2013). In this world, humans attain knowledge through learning, practice and introspection, the outputs of which are often referenced, amongst others, as common sense, insight and wisdom (Babbie & Mouton, 2011). Although lay knowledge is required in order to handle everyday life better (Mouton, 2013), Babbie and Mouton (2011, p. 7) point out that such knowledge is 'extremely varied in origin, kind and especially truth value'. In the second world, the objective is to produce truthful, that is, reasonable and credible elucidations of the world. The second world is thus that of science and scientific endeavour (Mouton, 2013). In this world, phenomena from the first world are researched. Accordingly, the second world is demarcated by the epistemic imperative (Babbie & Mouton, 2011). Leplin (1981, p. 271) notes that 'a connection between knowledge and truth is characteristic of analyses of second world knowledge'. Truth in the second world is reflected, as pointed out above, to be a best estimate and not absoluteness nor infallibility (Babbie & Mouton, 2011; Mouton, 2013). Reflection is the foundation of the third world. In this world, researchers consider the methodologies or mechanisms through which science may be progressed (Babbie & Mouton, 2011). The third world is thus that of meta-science (Mouton, 2013).

### Cultural intelligence

CQ is a non-academic intelligence (Kumar, Rose & Subramaniam, 2008) that portrays a person's competence in functioning seamlessly in those environments that are representative of cultural variety (Earley & Ang, 2003).

It epitomises a 'theoretical extension of Gardner's (1993, 2011) multiple facets of intelligence' (Chen, 2015, p. 102). CQ incorporates a collection of mental, motivational and behavioural abilities (Presbitero, 2016). Hence, it may be distinguished from general academic talent in that the latter focuses exclusively on the positioning of intellectual aptitudes (Ang et al., 2015). Being an etic type of intelligence (Klenke, 2009), CQ is also distinct from emotional and other non-academic intelligences in that such intelligences are culture constrained (Thomas et al., 2008) as they do not transfer across the cultural spectrum.

Ng, Van Dyne and Ang (2009) observe that CQ, as conceptualised by Earley and Ang (2003), comprises four factors or dimensions: (1) metacognition, (2) cognition, (3) motivation and (4) behaviour. All of metacognition, cognition and motivation situate within the head in that they are mental capabilities, whilst behaviours manifest as explicit actions (Ang et al., 2007; Sutherland, Edgar & Duncan, 2015). Metacognitive CQ encompasses the capacity to both procure and comprehend cultural knowledge (Ang et al., 2015). As such, metacognitive CQ mirrors the ability to think about prevailing cross-cultural assumptions and to modify these as appropriate (Groves, Feyerherm & Gu, 2015), thereby assisting persons to have an improved awareness of their cultural predilections both prior to and in the course of cross-cultural exchanges (Eisenberg et al., 2013). Cognitive CQ refers to the knowledge one has about different cultures (Presbitero, 2016). This knowledge may be sourced from, and developed through, both personal and educational experiences (Huff, 2013). The desire to immerse oneself in other cultures is evidenced by motivational CQ. This dimension also incorporates the utilisation of energy in transitioning to cultural settings that one may be unaccustomed to (Groves et al., 2015). The fourth dimension of CQ is that of behaviour, that is, a person's ability to act and react appropriately during cross-cultural exchanges (Huff, 2013). The actions may be both verbal and non-verbal (Ang et al., 2007).

Thomas (2006) offered an alternative conceptualisation of CQ comprising (1) knowledge, (2) mindfulness and (3) behaviour. Knowledge covers both the principles of cultural behaviour (such as greetings, rituals, etc.) and understanding, for example, the history of a culture (Tuleja, 2014). In addition to having cultural knowledge, the culturally intelligent person is mindful, that is, he or she pays 'attention to the subtle cues in cross-cultural circumstances' and processes these in terms of his or her cultural knowledge (Tuleja, 2014, p. 10). Behaviour reflects the capacity to select suitable actions based on the nature of the intercultural situation (Thomas & Inkson, 2005).

The difference between the above CQ constructs appears to be purely conceptual as metacognitive CQ forms part of the knowledge dimension in the model of Thomas (2006) (Du Plessis, 2011).

## Research design

### Research approach

A systematic review of the CQ literature was undertaken. Systematic reviews, having become broadly accepted (Kable, Pich & Maslin-Prothero, 2012), have as their aim the discovery of all material concerning a particular research question so that a fair and impartial summary of the literature may be offered (Nightingale, 2009). To this end, Crossan and Apaydin (2010, p. 1156) indicate that systematic reviews employ 'an explicit algorithm, as opposed to a heuristic' in delivering on their objective. As such, they may be distinguished from literature reviews pursuant to their repeatable, methodical and dispassionate search style (Burke, 2015). Systematic reviews most often comprise (1) the collection of data, (2) data analysis and (3) data synthesis (Olckers & Du Plessis, 2012). This study followed these steps.

### Research method

As this research sought to report on CQ truths, that is, it did not merge nor integrate the results from the reviewed studies statistically, the methodology was qualitative in nature. With this in mind, O'Neil and Koekemoer (2016, p. 2) point out that qualitative research employs 'a naturalistic and interpretive stance'.

### Sampling

Ross (2010, p. 5) defines a sample as a 'subgroup of the population'. As the intention was to identify all research studies on CQ that satisfied the inclusion criteria set, no sampling techniques were used.

### Data collection

In describing the method by which data was collected, it is necessary to provide details as to both the inclusion and exclusion criteria adopted, as well as the manner in which the studies were identified (Cronin, Ryan & Coughlan, 2008; Nightingale, 2009).

**Inclusion criteria:** Four criteria governed study inclusion.

Publication time frame was set as the first criterion. Despite Earley and Ang (2003) having formally introduced CQ for the first time in 2003 (Thomas et al., 2008), Earley (2002) had already discussed the construct. Accordingly, the beginning of January 2002 was set as the commencement date for the systematic search so as to ensure that the period during which CQ was conceived was included. As the search was performed during May 2015, the end date was taken as 31 May 2015. The time frame was thus 13.4 years.

The second criterion for inclusion required the study to have been reported on in a peer-reviewed journal, that is, textbooks and unpublished material were excluded. The premise for this criterion was the recommendation by Babbie and Mouton (2011) that only research outputs that have been specifically

inspected and accepted by the scientific community be incorporated. In this respect, the titles of all journals in which relevant articles were identified were compared against Ulrichsweb (see Serials Solutions, 2015) to confirm their application of a peer review process.

The third and fourth criteria addressed language of publication and focus, respectively. Only those studies articulated in English were included. The main focus of the study had to be CQ, that is, it was mandatory that both the article title and key words incorporated the term *cultural intelligence* or CQ.

**Study identification:** A comprehensive electronic search was conducted. *Cultural intelligence* and CQ were used as the search terms. In sum, 404 articles were discovered and split as to EBSCO Host Business Source Complete (90), ProQuest ABI/Inform Global (105), ProQuest Psychology (60), SAGE (30) and Google Scholar (119). The 404 article titles from the different databases were then compared and duplicates were removed. The number of unique studies was 157 (representing 101 different journals). Beall's list (see Scholarly Open Access, 2015) was then scrutinised to identify whether any of the journals in which the identified studies were reported on are considered to be potentially, possibly or probably predatory in nature. This investigation indicated that none of the 101 journals were reflected as such. The examination of Ulrichsweb (see Serials Solutions, 2015) revealed that 14 of the journals do not follow a peer review process. A further 10 journals' titles were not found on Ulrichsweb (see Serials Solutions, 2015) and thus their respective websites were inspected in an attempt to establish whether the articles published in them are peer reviewed. Seven of these journals were found to have peer review policies, whilst three did not. The 17 (14 + 3) journals that did not meet the second inclusion criterion represented 21 of the identified studies. These studies were thus removed from the review. This reduced the number of studies to 136 (representing 84 journals).

### Data extraction and analysis

The abstract of each of the 136 studies was first examined to further confirm the focus on CQ. All the articles were then listed on a spreadsheet. Details captured were (1) journal title, (2) article title, (3) author(s), (4) date of publication, (5) key words, (6) hypotheses (if any) and (7) propositions (if any). In sum, 76 of the 136 articles presented hypotheses that had been the subject of empirical investigation, 11 articles offered propositions that had not been empirically tested, whilst 49 articles did not put forward any hypotheses or propositions. The final number of included studies was therefore 76 (representing 48 journals).

Where a single hypothesis contained multiple components, each was counted as a separate hypothesis – for example, a hypothesis that referenced a relationship between a variable

and each of the four CQ dimensions was counted as four hypotheses. This resulted in 590 hypotheses being identified across the 76 studies.

Thematic analysis was used to categorise the hypotheses. Fox (2004, p. 1) indicates that thematic analysis is 'a generic approach to data analysis that enables data sources to be analysed in terms of principal concepts or themes'. Categories (i.e. grouped concepts) become themes (Fox, 2004, p. 1). Ryan and Bernard (2003) describe various techniques by which themes may be identified. They note that certain techniques are 'more suited to rich, complex answers, whilst others are more appropriate for short responses' (Ryan & Bernard, 2003, p. 85). They assert that the technique of repetition identification is a suitable method through which themes in short text may be detected and specifically point out that 'the more the same concept occurs in a text, the more likely it is a theme' (Ryan & Bernard, 2003, p. 89). As hypotheses comprise short text, the repetition identification strategy was followed.

All the hypotheses were scrutinised to discern included concepts. Thereafter the concepts were recorded on the spreadsheet with same or similar ones being arranged into separate groups. In seeking guidance as to the number of times a concept should be repeated (i.e. it appears in different hypotheses), direction was, once again, taken from Ryan and Bernard (2003, p. 89) who submit that 'only the investigator can decide'. To keep the decision pragmatic, it was resolved that the same concept had to be included in two or more separate hypotheses. Those concepts that appeared once only, that is, they did not appear in more than a single hypothesis, were then gathered together and designated 'not classified'. Examples of such last-mentioned concepts are marketing mix adaptations and career competencies. Finally, the results section of each of the included studies was inspected to identify those hypotheses that had been validated. These hypotheses were then marked up as truth statements. The themes thus reflect confirmed CQ relationships based upon the aforementioned concept groupings.

### Data synthesis and reporting

The findings are reported on per identified theme. The discussion section follows the same approach.

## Findings

The number and percentage of hypotheses and truth statements are presented, per identified theme, in Table 1. Out of the 590 hypotheses, 352 were confirmed by the respective studies of which they formed part or, in other words, 60% of all the CQ hypotheses, empirically investigated in the period covered by the systematic review, gave rise to truth statements. In total, 13 themes were determined plus the 'not classified' group. The 13 themes are arranged in descending order based on the number of identified



**TABLE 1:** Cultural intelligence hypotheses and truth statements per identified theme.

Number	Theme	Hypotheses			TS: (Hypotheses supported)			
		(a) NO.	(b) Percentage	(c) Cumulative percentage	(d) NO.	(e) Percentage	(f) Cumulative percentage	(g) TS percentage (d/a)
1	CQ and cross-cultural adjustment relate positively	126	21	21	68	19	19	54
2	Cross-cultural training and experiential learning stimulate CQ	74	13	34	44	13	32	59
3	CQ improves cross-cultural job performance, satisfaction, involvement and adaptation	71	12	46	40	11	43	56
4	International experience and exposure progress CQ	54	9	55	40	11	55	74
5	CQ advances cross-cultural team knowledge sharing, performance and development of shared values whilst team trust enhances CQ	28	5	60	21	6	61	75
6	CQ predicts international leadership potential, effectiveness and styles	23	4	64	11	3	64	48
7	CQ increases cross-cultural communication effectiveness	23	4	68	10	3	66	44
8	CQ correlates with personality	21	3	71	15	4	71	71
9	CQ promotes organisational agility, adaptive capability and commitment	16	3	74	15	4	75	94
10	CQ exists as a discrete intelligence type	14	2	76	10	3	78	71
11	CQ cultivates cross-cultural collaborative dealings	8	1	77	7	2	80	88
12	CQ and self-efficacy share a positive relationship	6	1	78	3	1	81	50
13	CQ and psychological capital are positively related	4	1	79	3	1	82	75
14	Not classified – could not be arranged per above themes	122	21	100	65	18	100	53
<b>Total</b>		<b>590</b>	<b>100</b>	-	<b>352</b>	<b>100</b>	-	-
<b>Total percentage of hypotheses that generated TS (<math>\sum d/\sum a</math>)</b>		-	-	-	-	-	-	<b>60</b>
<b>Average TS% per theme (<math>\sum g/14</math>)</b>		-	-	-	-	-	-	<b>65</b>

CQ, Cultural intelligence; TS, Truth statements.

hypotheses included in each. The ‘not classified’ group is listed below them.

Based on the above order, approximately 55% of the truth statements could be classified into just the first four themes. The top six themes, in turn, accounted for 64% of all the truth statements. These themes are (1) CQ and cross-cultural adjustment relate positively, (2) cross-cultural training and experiential learning stimulate CQ, (3) CQ improves job performance, satisfaction, involvement and adaptation, (4) international experience and exposure progress CQ, (5) CQ advances team knowledge sharing, performance and development of shared values whilst team trust enhances CQ and (6) CQ predicts leadership potential and styles and advances leadership effectiveness.

Whilst the truth statement mean percentage was 65% per theme, the associated range extended from a low of 44% in respect of CQ increasing the effectiveness of communication to a high of 94% regarding CQ and its influence on organisational agility, commitment and adaptive capability. These outcomes should, however, be seen in the context of the relative number of hypotheses, which were tested in the reviewed studies, forming part of the respective themes.

In view of the large number of truth statements, it was not practical, because of space limitations, to offer a synthesis of the findings and associated discussion for each theme. The commentary in this report is hence limited to (1) the first six themes and (2) key observations therein. The reader is reminded that the purpose of this review was to report on CQ truths and thus other findings

(i.e. hypotheses that were not confirmed by the included studies) are not presented.

### Theme 1: Cultural intelligence and cross-cultural adjustment relate positively

A number of studies hypothesised about and tested the relationship between CQ and cross-cultural adjustment, in terms of both the concepts themselves and their respective components. Six studies (Guðmundsdóttir, 2015; Jyoti & Kour, 2015; Lee & Sukoco, 2010; Lin, Chen & Song, 2012; Ramalu, Rose, Kumar & Uli, 2010; Ramalu, Wei & Rose, 2011) established that CQ and cross-cultural adjustment are positively related. Two studies (Chen, Wu & Bian, 2014; Konanahalli et al., 2014) examined the relationship between CQ in aggregate and the components of cross-cultural adjustment (general, interaction and work adjustment). Both of these studies validated a positive association between CQ and (1) general and (2) interaction adjustment, whilst Konanahalli et al. (2014) confirmed the same result in respect of work adjustment (Chen et al., 2014, did not hypothesise about CQ and work adjustment).

The relationships between the dimensions of CQ and the components of cross-cultural adjustment have also been the subject of hypotheses investigated by a number of studies. Motivational CQ was found to be positively related to each of general, interaction and work adjustment (Ang et al., 2007; Guðmundsdóttir, 2015; Huff, 2013; Ramalu, Rose, et al., 2010; Ramalu, Wei, et al., 2011; Templer, Tay & Chandrasekar, 2006) and explained the variance in general, interaction and work adjustment beyond that which the five-factor personality

model could (Huff, Song & Gresch, 2014). Metacognitive CQ showed a positive association with (1) all three of these cross-cultural adjustment components (general, interaction and work) (Guðmundsdóttir, 2015) and (2) with only the general and interaction components (Ramalu et al., 2010; Ramalu et al., 2011). Cognitive CQ and interaction adjustment shared a positive relationship (Ramalu et al., 2010; Ramalu, 2011). Lastly, behavioural CQ predicted each of general, interactional and work adjustment (Ang et al., 2007). The relationship between groups of CQ dimensions (achieved through factor analysis) and the cross-cultural adjustment components have also been examined and reported on in the literature. 'Awareness CQ' (comprising metacognitive and cognitive CQ) was positively related to each of the components of cross-cultural adjustment (Malek & Budhar, 2013), whereas 'Interaction CQ' (consisting of motivational and behavioural CQ) related positively to both general and interaction adjustment only (Malek & Budhar, 2013).

Finally, a single study hypothesised about the moderating effect of the four CQ dimensions on the link between expatriate supporting practices (ESP) and each of the cross-cultural adjustment components. Motivational CQ improved the effect of ESP on work adjustment, whilst metacognitive and cognitive CQ reduced the influence of ESP on (1) general and work adjustment and (2) interaction adjustment, respectively (Wu & Ang, 2011).

### Theme 2: Cross-cultural training and experiential learning stimulate cultural intelligence

The benefit of undergoing academic cross-cultural training with a view to developing CQ was validated by Eisenberg et al. (2013). At a dimension level, (1) academic training was shown to improve metacognitive CQ (Eisenberg et al., 2013), cognitive CQ (Rehg, Gundlach & Grigorian, 2012) and behavioural CQ (Rehg et al., 2012), whilst (2) experiential learning interventions increased metacognitive CQ (MacNab, 2012; Wood & St Peters, 2014), cognitive CQ (Wood & St Peters, 2014), motivational CQ (MacNab, 2012; Wood & St Peters, 2014) and behavioural CQ (MacNab, 2012). Inversely, both metacognitive and motivational CQ acted as stimulants of a learner's commitment to study international business (Ramsey, Barakat & Aad, 2014). Motivational CQ was also found to positively impact cultural effectiveness following a participant's completion of cross-cultural training (Peng, Van Dyne & Oh, 2014). Undergoing expectancy disconfirmation during an experiential education intervention positively associated with the development of each of the CQ dimensions. Furthermore, such expectancy disconfirmation experience mediated the relationship between the perception of optimal cross-cultural contact and the development of all of metacognitive, cognitive, motivational and behavioural CQ (Rosenblatt, Worthley & MacNab, 2013).

Whilst the extensiveness of cross-cultural training had a positive effect on each of the CQ dimensions, only cognitive

CQ was positively influenced by the duration of the training (Moon, Choi & Jung, 2012).

### Theme 3: Cultural intelligence improves cross-cultural job performance, satisfaction, involvement and adaptation

Job performance, or the completion of work obligations (task performance) and the formation and growth of relationships with host country employees (contextual performance), has also been studied in the domain of CQ. CQ demonstrated a positive influence on job performance (Chen, Lin & Sawangpattanakul, 2011; Ramalu et al., 2010; Ramalu, Rose, Uli & Kumar, 2012) and task performance (Jyoti & Kour, 2015). At a CQ dimension level, each of metacognitive, cognitive, motivational and behavioural CQ was positively associated with job performance (Chen et al., 2011). Metacognitive CQ exhibited a positive association with each of task performance (Ang et al., 2007) and contextual performance (Rose, Ramalu, Uli & Kumar, 2010), whilst behavioural CQ was similarly associated with task performance (Ang et al., 2007; Duff, Tahbaz & Chan, 2012) and contextual performance (Rose et al., 2010).

CQ, in aggregate, positively influenced job satisfaction (Bücker et al., 2014) as did the dimensions of metacognition, motivation and behaviour (Yeşil, 2013). Whilst all four of the CQ dimensions displayed a positive impact on job involvement (Chen, 2015), it was only motivational and behavioural CQ that positively affected adaptive performance (Şahin & Gürbüz, 2014).

Finally, the personality trait of openness and metacognitive CQ interacted to enhance task performance, whilst openness and cognitive CQ and openness and motivational CQ constricted task performance (Duff et al., 2012).

### Theme 4: International experience and exposure progress cultural intelligence

Several studies confirmed the positive effect of international experience on all of the CQ dimensions (Engle & Crowne, 2014; Morrell, Ravlin, Ramsey & Ward, 2013; Şahin, Gürbüz & Köksal, 2014). The same result was achieved by Eisenberg et al. (2013) in respect of metacognitive, cognitive and motivational CQ. International non-work (i.e. leisure) experience was positively related to each of the CQ dimensions, whilst international work experience shared a positive association with only metacognitive and cognitive CQ (Moon et al., 2012).

Exposure to other cultures also contributed to improving CQ (Crowne, 2013; Kim & Van Dyne, 2012). Both the depth and breadth of exposure showed positive relationships with CQ (Crowne, 2013). The previous working experience of expatriates (1) in the overseas department of their employer and (2) with foreign nationals within their home country prior to their expatriation displayed a positive relationship with cognitive CQ and metacognitive CQ, respectively (Moon, Choi & Jung, 2013). The number of local staff

members in the host country with whom expatriates worked presented a positive relationship with all of the CQ dimensions (Moon et al., 2013). The number of co-expatriates that expatriates worked with in the host country revealed a negative association with each of cognitive, motivational and behavioural CQ (Moon et al., 2013). Expatriates' perceptions of promotion following conclusion of the foreign assignment positively related to metacognitive and motivational CQ, whilst their knowledge of the duration of the assignment moderated the relationship between such perceptions and their motivational and behavioural CQ (Moon et al., 2013). The self-monitoring of expatriates positively associated with all of the CQ dimensions, whereas the extent of their interaction with local employees moderated the relationship between the number of local employees and the expatriates' metacognitive and behavioural CQ (Moon et al., 2013).

The duration of international work experience and CQ were positively related (Li, Mobley & Kelly, 2013) although even a short-term international experience positively associated with all of the CQ dimensions (Engle & Crown, 2014).

### **Theme 5: Cultural intelligence advances cross-cultural team knowledge sharing, performance and development of shared values whilst team trust enhances cultural intelligence**

All of metacognitive, cognitive and motivational CQ were shown to directly promote knowledge sharing amongst team members, whereas behavioural CQ required the mediation of perceived team efficacy to deliver the same effect (Chen & Lin, 2013). Initial performance levels and the speed with which performance improved were superior for those cross-cultural teams with higher, rather than lower, CQ levels (Moon, 2013). CQ also had a positive impact on the quality of teamwork in creative, as opposed to analytical, jobs (Scholz, 2012).

Team metacognitive and behavioural CQ had a positive influence in facilitating the development of shared values amongst culturally mixed team members (Adair, Hideg & Spence, 2013), whilst team trust enhanced the CQ of team members (Erez et al., 2013).

### **Theme 6: Cultural intelligence predicts international leadership potential, effectiveness and styles**

CQ was validated as a predictor of international leadership potential (Kim & Van Dyne, 2012) and was found to be positively associated with leadership effectiveness, specifically in the context of (1) cross-border activities (Rockstuhl, Seiler, Ang, Van Dyne & Annen, 2011) and (2) culturally heterogeneous teams (Groves & Feyerherm, 2011). CQ and transformational leadership demonstrated a positive relationship both in terms of CQ as an aggregated concept (Ismail, Reza & Mahdi, 2012; Keung & Rockinson-Szapkiw, 2013) and in respect of (1) each of the CQ dimensions (Ismail et al., 2012) and (2) cognitive and behavioural CQ (Keung & Rockinson-Szapkiw, 2013). Motivational CQ and the

democratic leadership style were also shown to correlate (Eken, Özturgut & Craven, 2014). CQ acted as a moderator of the relationship between transformational leadership and (1) both expatriate adjustment and performance (Lee, Veasna & Wu, 2013) and (2) organisational innovation (Elenkov & Manev, 2009).

## **Discussion**

This study was undertaken with the aim of reporting on CQ truths. The discussion that follows is thus a fusion of the findings described above.

### **Theme 1: Cultural intelligence and cross-cultural adjustment relate positively**

CQ has been shown to positively affect the ability of persons to successfully navigate and adapt to the many and varied manifestations of the new cultures they may find themselves exposed to, including living conditions (such as housing and healthcare), daily interfaces with host culture citizens and unique local employment and education practices. The consistency of this CQ and cross-cultural adjustment relationship prevails across a range of persons (including expatriates and students) and countries. Metacognitive CQ followed by motivational and behavioural CQ reveals the most association with and thus positive influence on the components of cross-cultural adjustment.

The moderating effect of the CQ dimensions on the association strength between ESP and cross-cultural adjustment reveals that those expatriates who are more motivated to integrate into the new culture are similarly enthused by and exploit more fully the efforts of their employers to assist with work integration. In addition, those expatriates who have knowledge about foreign cultures and increased ability to process cultural knowledge are less dependent on, and derive reduced benefit from, dedicated support provided by their employers when embarking on international work assignments. In pursuing cross-cultural adjustment, CQ is an indispensable competence.

### **Theme 2: Cross-cultural training and experiential learning stimulate cultural intelligence**

Although training interventions were shown to advance CQ and, in particular, all of metacognitive, cognitive and behavioural CQ, it is important that training programmes be carefully designed to ensure both the thoroughness and applicability of their content. The duration of training, though, appears to be less of a factor.

Experiential learning-type interventions are a key mechanism through which CQ may be developed in that they positively impact each of the CQ dimensions. To promote the study of international business, educators should directly target the enhancement of students' higher-order cognitive cultural processing skills (metacognitive CQ) and desire to engage in



intercultural exchanges (motivational CQ). Cross-cultural training and experiential learning interventions should thus be employed when the aim is to cultivate CQ.

### **Theme 3: Cultural intelligence improves cross-cultural job performance, satisfaction, involvement and adaptation**

CQ and each of its dimensions play a key role in promoting cross-cultural job performance. However, only two of the dimensions, metacognitive and behavioural CQ, specifically influence task and contextual performance. Without the display of culturally apposite behaviours, it is unlikely that a person will be considered to have functioned optimally during exchanges characterised by cultural diversity. The implication is that those persons who wish to ignite their work output and relationships with host country work colleagues should target the growth of their behavioural CQ followed by their metacognitive CQ capabilities.

It is not only cross-cultural job performance but also job involvement and satisfaction that are positively influenced by a person's CQ and its dimensions. Motivational and behavioural CQ also positively impact adaptive performance. It follows on that the development of motivational and behavioural CQ is key in enhancing one's feelings of job involvement and satisfaction whilst also equipping one to adapt as work imperatives evolve. The findings regarding the negative moderating effect of openness on the relationship between (1) each of cognitive and motivational CQ and (2) task performance may suggest that those persons who are open-minded need to pay special attention to completing the task at hand rather than becoming distracted by the cross-cultural interaction itself (Duff et al., 2012).

In preparing for a job in cross-cultural circumstances, persons should develop their levels of CQ with specific attention to the metacognitive and behavioural dimensions thereof.

### **Theme 4: International experience and exposure progress cultural intelligence**

Opportunities to experience foreign cultures, be they leisure or of a work-related nature, impact positively the development of a person's CQ. The reason why the leisure interactions influence all of the CQ dimensions whilst the work exchanges only affect metacognitive and cognitive CQ could be that leisure activities offer a greater assortment of interfaces and thus occasions through which CQ may be developed. Although longer periods of cross-cultural interactions allow for greater experience to be acquired leading to more developed CQ levels, the value of short-term opportunities to interface cross-culturally should not be underestimated.

Interestingly, although cognitive CQ was positively influenced by working in an overseas department within the home country, for metacognitive CQ to be similarly influenced, the individual needed to have actually interacted

with foreign nationals in his or her home country. These findings indicate that where an opportunity was availed to acquire cultural knowledge, knowledge acquisition took place but the actual processing thereof only materialised when expatriates were required to really use such knowledge (i.e. when interactions with foreigners occurred). It is submitted that the negative effect of ongoing exchanges with co-expatriates on cognitive, motivational and behavioural CQ is because such exchanges essentially serve to entrench cross-cultural stereotypes and misconceptions (in respect of cognitive and behavioural CQ) whilst familiarity breeds inertia (in respect of motivational CQ).

Experiencing other cultures, particularly in a non-work context, assists in CQ improvement, especially where persons engage in actual interactions with those native to such cultures.

### **Theme 5: Cultural intelligence advances cross-cultural team knowledge sharing, performance and development of shared values whilst team trust enhances cultural intelligence**

To build an effective team, members need to collaborate in the sharing of knowledge. To this end, all of the CQ dimensions, with the exception of behavioural CQ, fuel information distribution in multi-cultural teams. A possible reason why behavioural CQ only indirectly influences knowledge sharing may be because of behaviour being the physical display of (or failure to display) applicable knowledge, that is, behaviour occurs as a result of knowledge. The fact that metacognitive, cognitive and motivational CQ stimulate and encourage knowledge sharing amongst team members is expected as metacognitive and cognitive CQ represent intellectual processing and cultural knowledge, whilst motivational CQ depicts, amongst others, the desire and effort to acquire cultural knowledge.

In building a base of common values for the team, focus should centre on expanding the ability of team members to process how their culturally heterogeneous colleagues think as well as displaying culturally appropriate behaviours. As trust between team members grows, it is not unreasonable to expect that they will increasingly be pre-disposed to sharing aspects of their respective cultures with their co-workers and hence team member CQ improves. Individual team member CQ is thus especially necessary to ensure the successful building and functioning of multi-cultural teams.

### **Theme 6: Cultural intelligence predicts international leadership potential, effectiveness and styles**

Leadership is a function of culture (Steers, Sanchez-Runde & Nardon, 2012) and, as CQ assists one to function effectively across the cultural gamut, it is rational that CQ would be associated with international leadership potential, leadership effectiveness across borders (i.e. spanning at least two national cultures) and leadership of teams whose members are culturally dissimilar. Apart from the positive relationship



between democratic leadership and motivational CQ, only transformational leaders are, however, associated with having CQ. The inference is that when organisations select leaders required to operate in cross- or multi-cultural environments, they should pursue and select those persons who premise their leadership upon the formulation of a vision of the future and who are adept in arousing their followers to action in the realisation of such vision, that is, leaders who are transformational. Similarly, being culturally intelligent allows transformational leaders to better assist their expatriate followers in adapting to the host country as well as improving their work outputs whilst organisational innovation is advanced.

### Limitations and recommendations

The primary limitation of this systematic review is that it is possible that some material satisfying the inclusion criteria may not have been identified. Despite the broad examination of various databases, it is conceivable that some CQ empirical studies may only have been referenced in databases not scanned. Furthermore, unpublished reports and theses were not considered. It was also not feasible to report on and discuss all of the truth statements, given space restrictions.

It is recommended that future efforts to explore CQ truths should target those themes that exhibited a low truth statement ratio because they are reflective of the areas in which CQ has not acted in a manner consistent with that anticipated. Such themes cover leadership, communication and self-efficacy in particular. Equally, attention should be devoted to further investigating the relationship between CQ and other concepts in those themes which, despite having demonstrated a high truth statement percentage, only incorporated a relatively small number of hypotheses. These themes pertain to psychological capital and collaborative dealings. The 'not classified' group offers an additional area of CQ truths that could be specifically examined.

### Conclusion

The purpose of this study was to report on CQ truths. With this in mind, the CQ truth statements identified, through the systematic review performed, are representative of truth per the correspondence theory and are typical of knowledge that is found in the second world of the three-world structure of Mouton (1996). Whilst the CQ truths appear to be mostly confined to a narrow band of themes, a further 18% of the truth statements locate within the 'not classified' group, evidencing the prevalence of a somewhat diverse array of CQ truths.

CQ truths reveal that cross-cultural training, experiential learning interventions, international experience (both work and leisure related) and trust building (amongst team members) act as levers that the business community may employ in order to promote staff member CQ development. Individual level CQ contributes to cross-cultural adjustment, job performance, satisfaction, involvement and adaption,

team knowledge sharing and team performance. Similarly, CQ instructs the potential of international leaders and is positively linked to cross-border leadership effectiveness.

This study has thus achieved its purpose in that the CQ truths have now been identified, organised and reported on. The results will assist scholars in directing future enquiry whilst at the same time facilitating an improved comprehension of CQ by business professionals.

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### Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

### Authors' contributions

A.S. performed the literature search, data extraction and prepared the manuscript. R.S. provided conceptual and design input as well as commentary on the manuscript drafts.

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