Emotional Intelligence Across Cultures: Theoretical and Methodological Considerations

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Introduction

Societies continue to become more culturally diversified. In part this is due to the globalization of world trade and increase in migration and tourism. In addition, multinational corporations are gaining increased influence. The international workforce continues to become more heterogeneous and the workplace more multicultural. These changes influence the behavioral sciences, which are becoming more cross-culturally orientated (Fontaine, 2005). Researchers and practitioners of industrial/organizational psychology should be cognizant of cultural diversity and its implications in the workplace. One such implication is that cross-cultural psychological assessment continues to increase (Casillas & Robbins, 2005; Van de Vijver, 2002).

Tests of Emotional Intelligence (EI) are increasingly being used extensively around the world. For example, the Twenty-item Toronto Alexithymia Scale-III (TAS-20) (Parker, Taylor, & Bagby, 2003) has been translated into 18 languages. Spanish, French and Portuguese translations of the English Trait Meta-Mood scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) exist (Fernandez-Berrocal, Extremera, & Ramos, 2004; Queirós, Fernández-Berrocal, Extremera, Carral, & Queirós, 2005). The Bar-On Emotional Quotient Inventory (EQ-i, Bar-On, 1997) has been translated into 22 languages and normative data is available in more than 15 countries (Bar-On, 2000). Three peer-reviewed publications that report results based on French (Mikolajczak Luminet, Leroy, & Roy, 2007), Greek (Petrides, Pita, & Kokkinaki, 2007) and Spanish (Petrides, Pérez-González, & Furnham, 2007) translations of the English Trait Emotional Intelligence Questionnaire (TEIQue, Petrides, & Furnham, 2003) exist.

When tests are transported from one culture to another the comparability of psychological measurements across different cultural groups should be

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investigated. More specifically, statistical tests of bias and equivalence should routinely be conducted as such bias and equivalence investigations have theoretical and practical (applied) relevance. Bias refers to a range of factors that introduce disturbances into cross-cultural assessment. The measurement implications of bias in terms of the comparability of scores over cultures, is termed equivalence (Van de Vijver & Leung, 1997). Culture influences the transportability of instruments on various levels. For example, an absence of structural equivalence (i.e., obtaining equal factor structures in various cultural groups, Van de Vijver & Leung, 1997) could point towards bias at the construct level. In practice this could mean that a given psychological construct differs across cultural groups. Research has shown that the dimension *Interpersonal Relatedness* in the Chinese indigenous personality measure, the Cross-Cultural Personality Assessment Inventory (CPAI-2), does not load on any of the Big Five personality factors in the Western model (Cheung, Cheung, Wada, & Zhang, 2003). Another example is conceptions of intelligence in non-Western cultures that include "social intelligence" not included in traditional Western intelligence tests (e.g., the work of Sternberg, 1986).

When anomalies at item level exist, item bias is detected. Differential item functioning could point towards differences in the psychological meaning of items over cultures or inapplicability of item content in a specific culture. Two types of item bias with different practical relevance exist. Non-uniform item bias (i.e., differences in item discrimination) has implications at the metric invariance/equivalence level. The implication of evidence of this type of bias is that latent variables are not measured on the same metric scales across different groups. Hence, workplace decisions (e.g., personnel selection) based on relative differences between groups on the latent trait (e.g., EI) may not be meaningful, except where group specific norms are used to avoid adverse impact (e.g., similar selection ratios for majority and minority groups). Uniform bias (i.e., a difference in item difficulty) exists when the regression of the observed item scores on the latent variable differs across groups in terms of the item intercept. If assumptions of scalar equivalence remain untested, the impact is likely to be minimal for within-cultural-group decisions. This is because within a more or less homogeneous group, effects score bias should be distributed randomly over scores. However, between-group differences may be erroneously interpreted in the absence of scalar invariance evidence. Group differences may be due to measurement bias and not to real differences in the construct or criterion that is the target of measure. In the absence of such equivalence investigations, the truth about group differences on the latent trait (i.e., EI) and subsequent practical implications for group membership in the workplace, is simply not known.

The main focus of this chapter is a brief review of key aspects of three decades of research on emotion (i.e., emotional regulation, expression, and recognition) and culture as cross-cultural research on Emotional Intelligence (EI) is limited. Implications for EI conceptualization and operationalization within the framework of different cultures are discussed. The discussion centers on proposed arguments regarding possible cultural bias elements in

self-report EI instruments by focusing on two prominent self-report mixed model EI measures (i.e., Bar-On Emotional Quotient Inventory Short, EQ-i:S, Bar-On, 2002; Swinburne University Emotional Intelligence Test, SUEIT; Palmer & Stough, 2001). It is argued that the Western cultural origin of both these tests contains descriptions of EI as defined within those cultures (i.e., Australia for the SUEIT and Canada for the Bar-On EQ-i:S). It is proposed that the increasingly multicultural global work environment mostly advocate value systems inherent to the Western industrialized world system (high individualism and low power distance; Hofstede, 1980, 2001). However, respondents being assessed within these environments are increasingly coming from different cultural backgrounds with known differentiation in cultural value dimensions. Hence, cultural differences in values could introduce bias into Western cross-cultural EI measures when these are applied cross-culturally. This has implications for research and practical workplace decisions based on such inventories. Specific items in these inventories are predicted to be susceptible to cultural bias based on the item content which, for example, taps some aspect of individualism or power distance (cultural dimension on which nations tend to differ). Methodological issues related to cross-cultural EI research is also highlighted.

Emotions, Emotional Intelligence and Culture

Next to motivation, perception, and cognition, emotions are viewed as one of the basic functions of the human psyche. Since the relatively recent advent of the construct of Emotional Intelligence (EI) in 1990 (Salovey & Mayer, 1990) the construct has continued to capture the interest of a wide audience of scholars and practitioners. Mirroring advances in emotion research, EI has been connected with numerous cutting-edge areas of psychological science, including neuroscience (Bar-On, Tranel, Denburg, & Bechara, 2003; Gawryluk & McGlone, 2007; Kemp et al, 2005). EI research continues to gain momentum with evidence from various studies displaying an association of EI with psychosomatic and physical health (e.g., Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007; Saklofske, Austin, Galloway, & Davidson, 2007), life satisfaction (Extremera & Fernández-Berrocal, 2005; Gignac, 2006), work performance (Van Rooy & Viswesvaran, 2004), stressor appraisal and task performance (Lyons & Schneider, 2005), team (e.g., Jordan, Ashkanasy, Hartel, & Hooper, 2002) and academic performance (e.g., Parker et al., 2004; Austin, Evans, Goldwater, & Potter; 2005).

One area of research in EI, however, that remains a relatively uncharted domain, is that of cross-cultural EI research. Cross-cultural research aims to develop and extend a more universal psychology by investigating the generalizability of psychological theory in different cultures (the practice of

"transporting and testing"). Failures to establish generalizability (when research methodology and measurement instruments are sound) may be interpreted in terms of cultural variations in behavior (Berry, Poortinga, Segall, & Dasan, 2002). This has two implications for future cross-cultural EI research. Firstly, when monocentered instruments (instruments from a single Western cultural background, Van de Vijver & Leung, 2001) are used in generalizability studies (e.g., from Western to non-Western cultures), they are more likely to run into bias problems (Van de Vijver & Leung, 2001). Therefore, testing of the equivalence of scores across different groups should routinely be conducted (Van de Vijver & Leung, 2001). This is a weakness of the limited cross-cultural EI studies conducted up to this point. Secondly, when cultural bias (construct, item or method) is uncovered, ways to minimize bias (i.e., method bias) in EI assessment should be considered, whilst evidence of construct and item bias should be scrutinized to better uncover the cultural variability of the construct. This knowledge could then be applied in reducing ethnocentrism (Berry et al., 2002; Hofstede, 2001) in current EI instruments, as well as designing better "culturally tuned" EI development programmes (e.g., Herkenhoff, 2004).

This chapter is divided into three main sections. First, a brief overview of the current state of cross-cultural EI research is presented. Next a review of key aspects of three decades of emotions and culture research and possible implications for EI conceptualization and operationalization within the framework of different cultures is discussed. Lastly, methodological issues related to cross-cultural EI research is highlighted. The discussion will focus on two prominent mixed model self-report EI measures (i.e., the EQ-i: S, Bar-On, 2002; SUEIT, Palmer & Stough, 2001). The SUEIT model (Palmer & Stough, 2001) broadly subscribes to the (Salovey & Mayer, 1990; Mayer & Salovey, 1997) EI model. It defines EI in terms of five dimensions (i.e., Emotional Recognition and Expression, Understanding Others Emotions, Emotions Direct Cognition, Emotional Management and Emotional Control). The broader Bar-On model (1997, 2002) proposes that EI encapsulates emotional, social, and personal competencies, skills, and non-cognitive capabilities that may arise from the effective use or regulation of emotions and place emphasis on adaptation to environmental demands.

It will be argued that culture influences the transportability of instruments on various levels (e.g., structural or metric equivalence). For the purpose of this discussion, national culture is defined as the pattern of values, attitudes, and beliefs that affect the behaviour of people from different countries (Hofstede, 2001) described in terms of the Hofstede (2001) cultural dimensions. The relevant dimensions include: Individualism–Collectivism (i.e., the relationship of the individual to the group), Power Distance (i.e., status differentials that exist within groups) and Uncertainty Avoidance (i.e., rituals concerning the future and avoidance of anxiety) (Hofstede, 1980, 2001).

A Brief Review of the Current State of Cross-Cultural EI Research

Based on the Van de Vijver and Leung (1997, 2001) taxonomy[1] of studies in cross-cultural psychology, EI research in this domain has mostly yielded psychological differences and generalizability studies, and the empirical evidence on ethnic differences have been noted to be both "...scant and contradictory" (Matthews, Zeidner, & Roberts, 2002, p. 71). This remains to be true for research on both the prominent ability (the Multifactor Emotional Intelligence Scale, MEIS; and the Mayer, Salovey and Caruso Emotional Intelligence Test, MSCEIT; Mayer, Caruso, & Salovey, 2000) and the mixed model (self-report) measures of EI (e.g., EQ-i, Bar-On, 1997; Schutte Self-Report Inventory/Emotional Intelligence Scale, SSRI/EIS, Schutte et al., 1998, SUEIT, Palmer & Stough, 2001).

For example, a recent psychological differences study with the trait based Emotional Intelligence Scale (EIS, Schutte et al., 1998) surprisingly reported higher total EI scores for minority ethnic groups (Blacks, Hispanics), leading the researchers to pose the question of whether in fact "...majority groups could sue using a claim of test bias" (Van Rooy, Alonso, & Viswesvaran, 2005, p. 694), as group difference in mean predictor scores could be a likely cause of adverse impact. Rozell, Pettijohn, and Parker (2002) reported significant differences between domestic ($n = 219$) and international students ($n = 76$) at an American university, in terms of overall EQ scores and individual factors on the Emotional Quotient test (Goleman, 1995). Acknowledging that the study assumes, and not explicitly tests, for whether cultural test score bias could be the cause of the reported cultural differences, they conclude that opportunities for success in business for the international students might be limited by their EI.

Three generalizability studies, to date, on the EI construct (mixed model measures) across diverse ethnic/cross national cultural groups exist. A study of the EQ-i: YV (Bar-On & Parker, 2000) on Canadian Aboriginal versus non-Aboriginal youth was conducted by Parker et al. (2005). This study is exemplary

[1] The taxonomy entails a 2 × 2 classification of studies in (cross-)cultural psychology, based on two dimensions (i.e., whether the purpose of the study is hypothesis-testing or exploratory, and whether or not contextual variables were included). Four categories are distinguished. Hypothesis testing studies include *generalisability studies* that explore whether research findings obtained in one group (e.g., Western group) can be replicated in another group (e.g., non-Western group). No contextual elements are taken into account. Equivalence is usually assessed. When contextual factors are accounted for in hypothesis testing studies, a *contextual theory/theory driven* study is conducted. Studies that have an exploratory orientation are grouped into *psychological differences* (no consideration of contextual factors) or *ecological linkage/external validation* studies. The former applies an instrument in two cultural groups, without any particular theory regarding the nature of cross-cultural differences to be expected. The latter, by including a set of contextual variables in an exploratory manner, aims to provide evidence for specific interpretation of observed cross-cultural differences (Van de Vijver & Leung, 1997, 2001).

in acknowledging and theoretically proposing how cultural factors might influence the operationalization of the construct in the two different cultural groups. The results of the Parker et al. (2005) study provided preliminary support for equivalence of the EQ-i: YV (Bar-On & Parker, 2000) scores over the two groups (results of a multi-group Confirmatory Factor Analyses, CFA, i.e., configural invariance,[2] is reported), although not to the extent that the full measurement invariance[3] (i.e., configural, metric and, scalar invariance) of the instrument is explicitly investigated. In addition, consistent group differences over the groups on the total EI score and Interpersonal, Adaptability, and Stress Management subscales (aboriginal students scored consistently lower) and post hoc discussions on possible effects and causes of these differences were presented. Evidence, albeit limited, to support the invariant operation of the EQ-i: YV, was presented in this study (Parker et al., 2005).

Rahim et al. (2002) investigated the relationship of self-awareness, self regulation, motivation, empathy, and social skills (Emotional Quotient Index, EQI; Rahim et al., 2002) of supervisors to subordinates' strategies of managing conflict. Single group CFA results for the EQI for the data from seven countries (USA, $n = 303$; Bangladesh, $n = 152$; Hong Kong and Macao, $n = 79$; Greece, $n = 132$; Portugal, $n = 86$; China, $n = 210$; South Africa, $n = 84$) was reported, as well as a fully unconstrained multi-group CFA analysis (configural invariance) for each of the countries with the USA sample. No theoretical explanations for why culture might produce differences in the cross-national CFA results were provided. No further tests of invariance were reported. The authors suggest that the results supported a somewhat consistent cross-country pattern, although admitting that there were differences in results, and that ". . .it is not possible to determine whether these differences came from the small and convenience samples or differences in cultures" (Rahim et al., 2002, p. 321). It should be noted that five of the seven country samples sizes fell below the $n = 200$ structural equation modeling sample size guideline (Hair, Black, Babin, Anderson, & Tatham, 2005), with the smallest sample being 79, casting doubt on the generalizability of the results.

The only cross-cultural EI study that has explicitly tested for full instrument invariance was on two early measures of self-report EI (TMMS, Salovey et al., 1995; TAS-20; Bagby, Taylor, & Parker, 1994) conducted by Ghorbani et al. (2002). By combining the factors of these measures into an input

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[2] Configural invariance (Vandenberg & Lance, 2000) is also known as the test of "factor structure equivalence" (Hair et al., 2005). Evidence for configural invariance points towards a similar conceptualisation of constructs in different groups (absence of construct bias), to the extent of the data supporting the same number of factors and similar items associated with each factor (Meredith, 1993).

[3] A lack of measurement invariance evidence is known to compromise the unambiguous interpretation of between group differences (Byrne & Watkins, 2003; Cheung & Rensvold, 2002; Vandenberg & Lance, 2000) rendering cross-cultural comparisons on cultural mean differences to be misleading and ultimately, possibly meaningless.

(attention to emotions), process (clarity of emotions) and output (repair of emotions) information-processing system, they conducted CFA and measurement invariance procedures to fit the data, obtained from Iranian ($n = 231$) and American ($n = 220$) university students, to the model. Even though CFA and measurement invariance procedures provided evidence for cross-cultural similarities in the fit of the a priori higher-order factor structure, subsequent analyses revealed cross-cultural dissimilarities in the actual processing of emotional information (interrelationships among factors differed). This confirmed the notion that contrasts between Iranian and American social life (individualistic versus collectivistic values; Hofstede, 2001) might have implications for the processing of emotional information in these groups (Ghorbani et al., 2002).

Preliminary research on EI ability measures have proven no better in unraveling cross-cultural differences in EI. The criterion for correctness ("right" answers) on ability EI test items (MEIS, Mayer, Salovey, & Caruso, 2000; Mayer, Salovey, Caruso Emotional Intelligence Test, MSCEIT; Mayer, Salovey, Caruso, & Sitarenios, 2001) are typically based on target, expert or consensus criteria. Mayer, Caruso, et al. (2000) argue that the basis for claiming "right" answers is grounded in evolutionary and cultural foundations for the consistency of emotionally signaled information. They cite the work of Darwin on the evolution of emotion (1872/1965) and that of Ekman (1972) who have provided evidence for a strong universal emotional "language" and facial expression of emotion among humans. In addition, they argue that replications across literary sources and more recently, the Internet, of ideas or "cultural memes" is comparable to biological genes. Therefore, emotional ideas are disseminated and reproduced as popular ideas according to the degree to which they are found useful and functional within a given culture. They conclude that consensus criterion is the best single means of determining a correct answer by stating that "...if one subscribes to the idea that emotional signals evolve, either biologically or culturally, then a wide, representative, sample of observers is probably a good judge of correctness under at least some circumstances" (Mayer, Caruso, et al., 2000, p. 327). Based on this reasoning it could, therefore, be argued that when consensual scoring is used in ability measures, the possible effects of cultural bias in this type of EI measurement might be controlled. Could this be an alternative explanation for results reported by Roberts, Zeidner, and Matthews (2001), who report no differences between ethnic groups when consensual scoring was employed (MEIS, Mayer, Salovey, et al., 2000), but when expert scoring was used, White Americans outperformed minority American groups on many of the subscales? It should, therefore, be asked whether ethnic differences, when uncovered with expert scoring, could be interpreted as "real" differences between these groups, as it seems plausible to argue that cultural bias effects might be masked by

expert scoring. Therefore, should consensus scoring[4] not always be used to minimize any possibility of cultural bias in ability based EI measures?

The goal of the preceding section was to provide a brief and by no means exhaustive overview of previous attempts to study the EI construct over different cultures. As is evident, many theoretical and methodological challenges implicitly embedded in any attempt to study EI and culture, face the researcher attempting to tread this unchartered domain.

Culture and Emotion Research: Implications for EI

An important question central to this discussion is whether the notion of an "ideal" EI profile is context dependent, in the sense that "appropriate" or "effective" emotional behaviour, will in itself be dictated by the cultural origin of the measurement instrument used? For example, the two EI instruments included in this discussion (i.e., SUEIT, EQ-i:S) are classified as monocentered instruments (Van de Vijver & Leung, 2001). To what extent do such instruments and the construct they purport to measure, truly reflect the construct and all its facets in other cultures? Moreover, when imported measures are used, invariant psychometric properties and higher levels of equivalence of the instruments should be investigated. Where is the research evidence to support this? According to Hui and Triandis (1985) cross-cultural equivalence can be conceived in terms of a universality-cultural difference continuum and different levels of abstraction and concreteness. They argue that when imported measures are used, researchers should enhance validity and establish different levels of equivalence in order to surmount the goal of maximising both precision and meaningfulness of comparison in cross-cultural research. This universality-cultural difference continuum (to what extent constructs are considered universally applicable or meaningful in specific cultural context), also known as the etic–emic (Berry, 1969) debate, has permeated emotions research for three decades. Research on depression, anxiety and personality have also not proved to be conclusive on whether imported instruments capture human psychological phenomena that are invariant across cultures (Sue & Chang, 2003). For example, Leong, Okazaki, and Tak (2003) reviewed the assessment of depression and anxiety in Asia, and concluded that some imported measures (e.g., State-Trait Anxiety Inventory, Chinese Beck Depression Inventory) miss capturing culture specific elements (e.g., particular symptomatology in Chinese populations) of these constructs. Cheung et al. (2003) identified the factor, Interpersonal Relatedness, in the indigenous personality measure the

[4] According to Matthews et al. (2002), the test developers of the MEIS/MSCEIT are moving towards an operational definition of ability based consensus scoring, inferring that a person is more intelligent if he or she is closer to the population norm. They question the rationale for scoring an ability on this basis, arguing that, in this context, it is misleading to describe EI as an "intelligence".

Cross-Cultural Personality Assessment Inventory (CPAI-2), developed for the Chinese population. This factor did not load on any of the Big Five personality factors in Western models, whilst they also demonstrated that it was found among Caucasian US students who completed the CPAI-2, suggesting that Western measures may not have captured all meaningful important personality dimensions (Sue & Chang, 2003). Leung and Wong (2003), on the other hand, assert that broad personality patterns are universal. The successful international use and adaptation of the Minnesota Multiphasic Personality Inventory (MMPI-2) underscores this viewpoint (Butcher, Cheung, & Lim, 2003).

For almost three decades, emotion research has been dominated by the disciplinary preferences of researchers, leading to an oversimplification in the debate regarding the cultural universality or relativism of emotional experience. More specifically, psychologists and biologists have been inclined to overlook cultural differences, whilst anthropologists emphasize them, overlooking similarities (Ellsworth, 1994). Recent theoretical models endeavor to give an explanation for both universality and cultural variation by focusing on similarities and differences, across cultural boundaries, of particular components of emotion (Fiske, Kitayama, Markus, & Nisbett, 1998; Mesquita & Frijda, 1992; Scherer & Wallbott, 1994). Matsumoto (1989), for example, has proposed that even though emotions are biologically programmed, learning control of expression and perception is highly dependent on cultural factors. Kitayama and Markus (1994) published a volume of research consolidating empirical research dedicated to the premise that emotions are socially and culturally shaped and maintained. This happens, for example, through collective knowledge that is represented in linguistic convention (e.g., the nature of the affective lexicon and specific meanings of emotions terms; Wierzbicka, 1994, 1999). Therefore, it could be argued that the traits or competencies measured by self-report EI measures (per EI dimensions, e.g., emotional control, management) tap into this collective knowledge of the culture within which the test was developed. In administering a self-report EI instrument, the presence (or absence) of certain "traits", competencies, or behavioural tendencies that would allow a person to respond in an emotionally intelligent way to the environment and cope with environmental pressures, whether that be in the workplace (performance, team work, leadership, ability to cope with stress, burnout, e.g., Ogińska-Bulik, 2005; Slaski & Cartwright, 2002; Van Rooy & Viswesvaran, 2004) or life in general (life satisfaction, psychological and physical health; e.g., Schutte et al., 2007) is measured within the boundaries of the cultural origin of the test. If the potential to display appropriate emotionally intelligent behaviours is context-dependent, then it might be reasoned that the context (socio-cultural context) should be considered when the behavioural manifestations (through which EI is often measured) of EI are captured in the development of a self-report instrument. For example, key cultural dimensions (Hofstede, 2001) such as Individualism versus Collectivism, high or low Power Distance, and Uncertainty Avoidance could be significant influences in this process.

The following section provides a theoretical/conceptual discussion on how cultural group membership might introduce cultural specificity into the development of self-report EI items. The discussion is guided by key findings of three decades of emotion and culture research, specifically focused on emotional appraisal and regulation. It is proposed that cultural difference in values could introduce bias into Western cross-cultural EI measures where these measures are applied cross-culturally. Specific items are predicted to be susceptible to cultural bias based on the item content. Table 1 provides an overview of the proposed affected content of EQ-i: S and SUEIT items included in this discussion (the content in the table is approximations of selected items from these two inventories, i.e. the item content has been slightly modified from the original).

Emotional Regulation in Cultures

Emotional regulation refers to the processes related to influencing emotions that are experienced, situations under which a given emotion is experienced, and how and whether an individual expresses a given emotion (Gross, 1999). It could be argued that the cultural dimensions of Power Distance, Individualism/Collectivism, and Uncertainty Avoidance (Hofstede, 2001) may account for cultural specificity in emotional regulation abilities in respondents from different cultures, attenuating beliefs held about the "correctness" of such behaviours. The concept of emotional regulation appears in the SUEIT (Palmer & Stough, 2001) in the Emotional Control and Management[5] subscales, as well as in the Intrapersonal, Stress Management, and General Mood[6] subscales of the EQ-i:S (Bar-On, 2002). Consider, for example, that in individualistic cultures the identity is defined by personal goals and achievement, and emotion norms encourage emotions signaling independence, authenticity, and assertiveness (Triandis, 1994). In turn, collectivism stresses that behavior is a function of norms and duties imposed by the collective; hence the self is defined by one's relatedness to a social group whilst the views, needs, and goals of the collective are stressed (Triandis, 1988, 1994). Here, emotion norms promote emotions that signal interdependence and endorse harmonious relationships (e.g., sympathy), as opposed to prescribing concealments of emotions that may impede relationships with others (e.g., anger, pride). Apart from specific influence on emotional

[5] Emotional Control refers to how effectively emotional states experienced at work, such as anger, stress, anxiety and frustration, are controlled. Emotional Management refers to the ability to manage positive and negative emotions within both oneself and others (Palmer & Stough, 2001).

[6] The Intrapersonal subscale assesses the respondent's level of inner self-awareness. High scores indicate individuals who, for example, are in touch with and able to express their feelings, as well as are independent, strong and confident in conveying their ideas and beliefs. Stress Management refers to the ability to withstand stress without losing control or "falling apart". General Mood assesses the ability to enjoy life, be content, positive, hopeful and optimistic (Bar-On, 2002).

Table 1 Theoretical framework of predicted cultural bias in (approximated) content[1] of selected SUEIT and Bar-On EQ-i: S items

Item content taps behaviors related to…	Individualism/ collectivism	Power distance	Uncertainty avoidance	Display rules
being helpful towards others	×			
being concerned about others/what happens to them	×			
being more of a follower than a leader	×			
independence in decision making	×			
whether others perceive you as being assertive	×			
easily exploding with anger	×		×	×
having problems to control/manage anger	×		×	×
finding it easy to control anger at work	×		×	×
overcoming anger at work by thinking through what's causing it	×		×	×
experiencing strong emotions at work which are hard to control	×		×	×
finding it hard to control anxiety	×		×	×
expressing intimate feelings	×	×		×
expressing feelings to colleagues when anxious	×	×		×
finding it difficult to convey anxiety to colleagues	×	×	×	×
whether colleagues know you are worried	×	×		×
determining when a colleague's emotional reactions are inappropriate	×			×
whether a colleague's facial expressions reveal a lot to you about the way they are feeling	×			×
being happy/cheerful	×			
finding it difficult to enjoy life	×			
getting depressed	×			
understanding how others feel	×			
whether you can generate positive moods and emotions within yourself to get over frustration at work		×		
when a colleague upsets you at work, whether you think through what the person has said to find a solution to the problem	×			

Note. A cross opposite the item indicates that, due to the respective cultural value dimensions (or display rules); the item may be prone to display bias when included in EI measures that are used for cross-cultural assessment (e.g., transporting a Western developed measure to a non-Western cultural context).
[1] The content of the items has been slightly modified.

regulation discussed below, this cultural dimension might also influence the differential appropriateness of items and other subscales in the two inventories under discussion. It may be argued, for example, that items with content which focuses on behaviours like generally assisting/helping others, independence in decision making and whether one generally cares about other people, might introduce cultural bias into these measures as such item content taps into typical collectivistic values (and their associated behavioural manifestations). This could threaten the construct validity of these measures.

Individualism/Collectivism

According to Triandis and Gelfand (1998) conflict-inducing behaviours are minimized in collectivistic cultures (e.g., Malaysia, Indonesia, Philippines) whilst individualistic cultures (e.g., Australia, Canada, USA) will be more tolerant of individual deviance. Therefore, fewer constraints that govern a wide range of emotion expression experiences in and among members will occur. In addition, Kitayama and Markus (1994) inquire whether it might be that anger is a highly pervasive, central, and natural emotion in Western countries because of the emphasis on independence and the social norm of freely expressing internal attributes, such as rights, goals, or needs and hence because anger is most closely associated with blocking of these rights, goals and needs. Anger is therefore appropriate in situations where personal goals or individual rights are threatened (Averill, 1982). In addition, anger expression allows for restoring honor in this context (Cohen & Nisbett, 1994). In contrast, Asian/Eastern countries stress interdependence among individuals (attending others' needs and goals) (Hofstede, 2001; Triandis, 1994) and therefore Kitayama and Markus (1994) has asked whether it could be argued that anger is less common, natural and integrated into the social life of individuals in non-Western cultures, or even that the two forms of anger (in these two cultures) are distinct? This might have cultural bias implications for items in EI assessment instruments (which measure Emotional Control) that contain the word "anger", e.g. "I find it easy to control my anger at work".

Display Rules

In addition, the linguistic implications of using a term like "anger" in a self report instrument should also be considered. For example, the standard English US translation for "anger" in Japanese is, "ikari". It could be argued that if equivalent translation is assumed when this term is included in self-report questionnaire items, these two references to "anger" resemble each other by sharing important elements such as autonomic arousal and the use of certain face muscles. However, the exact set of participating components (e.g., instrumental responses, inhibitory tendencies) related to "anger" may vary widely across the two cultures (Kitayama & Markus, 1994). The most prominent influence here is the use of display rules in emotional regulation. Display rules

serve as socially and culturally learned norms that specify the appropriateness of displaying and expressing emotions and are known to be a source of cultural variation in emotional phenomena (Ekman, 1972). According to Ekman and Friesen (1975) display rules affect facial expressions of emotion in several ways. Facial expressions of an emotion may be displayed without a corresponding feeling. They could mask the presence of another inappropriate emotion, attenuate or enhance the apparent intensity of a felt emotion, or even entirely mask or inhibit a felt emotion. Recently, Matsumoto, Yoo, Hirayama, and Petrova (2005) found that when displaying fear, anger, or sadness, Japanese and Russian respondents are inclined to soften the impression by adding a slight smile, indicating that although they are distressed, "it isn't really that bad". Americans also express their emotions more visibly than do Japanese or Russian people. According to Matsumoto (1990, 1996) moderate displays of anger are fairly common in the USA. The display of sadness or other negative emotions are more appropriate towards friends and family, than acquaintances, with the opposite being true in the Japanese culture. However, in Japan it is considered appropriate to display anger towards subordinates, but any other display of anger is considered crude and inappropriate (Matsumoto, 1996).

Moreover, Ellsworth (1994) asserts that it is not only a matter of the visible behaviour (e.g., behavioral manifestations of anger); cultures also seem to differ in their beliefs about the appropriateness of even feeling certain emotions in certain contexts. For example, in American culture, in most social contexts it is considered inappropriate for men to cry, and also experience deep grief as strongly and frequently as women. Therefore, it could be argued that each culture's values about emotions and their expression may come to affect the essential experience (and the expression and, ultimately, the definition) of that emotion (Ellsworth, 1994).

Items like "I find it easy to control my anger at work", "I overcome anger at work by thinking through what's causing it", and "At work I experience strong emotions that are hard to control" are used to assess different components of emotional regulation in the EI measures under discussion. By including "anger" as an anchor and standard of cross-cultural comparison and generalization in EI assessment, it might be plausible to argue that an ethnocentric understanding of this emotion in emotional regulation is enhanced and maintained. Furthermore, it might be plausible to argue that respondents from countries with cultures with well-defined display rules, might very seldom "explode" with anger. If these lines of reasoning are followed it should be noted that items in this facet of EI measurement (emotional regulation) might be particularly susceptible to cultural bias (which would influence the transportability of the given instrument from Western to non Western cultural contexts).

Uncertainty Avoidance

The Uncertainty Avoidance (UA) Index refers to the degree a society is willing to accept and deal with uncertainty (Hofstede, 2001). The essence of uncertainty

is that it is a subjective experience, and that extreme uncertainty creates intolerable anxiety (Hofstede, 2001). Countries that score high on the UA dimension (e.g., Italy; Hofstede, 2001) tend to be more expressive cultures. In such cultures it is socially acceptable to express emotions, as anxiety is released through the showing of emotions through which society has created outlets (Hofstede, 2001). In low Uncertainty Avoidance societies (e.g., Malaysia, Hofstede, 2001), anxiety is released through passive relaxation, whilst such cultures are characterized by lower expressiveness. The norm is wide social disapproval of overly emotional or noisy behaviour. Items like, "I overcome anger at work by thinking through what's causing it", "I find it easy to control my anger at work" and "At work I experience strong emotions that are hard to control" therefore might contain cultural bias when used in EI measures applied in different cultures.

Power Distance

Power Distance (PD) prescribes how societies deal with inequality between people (Hofstede, 2001). In high PD societies (also termed a vertical society; Matsumoto, 1996), for example Malaysia, the workplace relations between employer and employee are strictly ruled and dependent on the decisions of the employer. Power is centralised as much as possible. Superiors and subordinates generally consider each other as existentially unequal (Hofstede, 2001). Emotions and behaviours that advertise and reinforce status are encouraged. In low PD societies (horizontal societies; Matsumoto, 1996) employers and employees work closely together, have equal status (even when education levels differ) and democratic practices are applied. Here, general predictions about the experience and expression, and hence regulation, of emotion is largely concerned with who is expected to and allowed to express which emotions to whom. The notion that in high PD cultures dominant strong emotions (e.g., anger and pride) will be expressed by superiors to subordinates (which will, in turn, express submissive emotions, e.g., appreciation, shame), has been confirmed by two studies (Bochner & Hesketh, 1994; Mondillon et al., 2005). In Japan, for example, it is appropriate for a high status person to express anger to subordinates, as this emotion implies high status and a threat to hierarchy (Matsumoto, 1990), whilst the inverse is known to be deeply offensive in Japanese culture (Matsumoto, 1996). A very clear influence of display rules is noted in this culture, as felt emotions by group members/subordinates (anger, sad, afraid) will be controlled to maintain group harmony. Once again, items containing the word "anger" ("I find it easy to control my anger at work" and "At work I experience strong emotions that are hard to control") may be susceptible to cultural bias depending on which group the respondent belong to. Items that refer to emotional regulation directed at group members, rather than members from other groups that imply a PD effect, may have better face validity and not be so prone to cultural bias. However, often 360 degree versions of EI tests, in which subordinates rate their leader's EI, are based on self report measures. An

item like "The person I am rating finds it hard to convey anxiety to colleagues" may be susceptible to bias as a leader in a high PD environment will most probably not convey anxiety to subordinates.

Emotional Expression

Although convincing evidence for the universality of posed and spontaneous facial emotional expression in early cross-cultural studies has been found (Ekman & Friesen, 1971; Ekman, 1972; Friesen, 1972), the concept of display rules (Ekman, 1972) and the neuro-cultural theory of emotion proposed by Ekman and Friesen (1969) served in acknowledging the presence of cultural variation in emotional expression. For example, a study by Pittam, Gallois, Iwawaki, and Kroonenberg (1995) recently reported agreement amongst Australian and Japanese respondents regarding the cultural differences in emotion expressivity (i.e. perceived expressivity of people of different cultural backgrounds). More specifically, Japanese were consistently rated as less expressive than Australians by all subjects (Pittam et al., 1995), providing confirmation of previous reported cultural and ethnic differences in intensity ratings of emotion expressions (Matsumoto & Ekman, 1989; Matsumoto, 1993; Scherer, Wallbott, Matsumoto, & Kudoh, 1988). Recent evidence suggests, furthermore, that these cultural and ethnic differences also hold in Irish and Scandinavian American immigrant groups (Tsai & Chentsova-Dutton, 2003) with Irish Americans consistently being more facially expressive (when asked to relive target emotions like happiness, love and anger), than their Scandinavian counterparts.

Emotional expression appears in the Bar-On (2002) EI model in the Intrapersonal subscale.[7] In the SUEIT, emotional expression appears in the compound Emotional Recognition and Expression[8] factor. Typical items include: "When I'm anxious at work, I find it difficult to express this to my colleagues", "I can portray how I'm feeling to colleagues through my body language", "Colleagues know when I'm worried", and "I find it hard to convey my anxiety to colleagues".

Individualism/Collectivism

A study of the appropriateness of displaying emotions in different social situations (individualistic versus collectivistic cultures), characterised by in-group (i.e., close family and friends) and out-group (i.e., in public, casual acquaintances) members, were conducted by Matsumoto (1990). Japanese subjects

[7] The Intrapersonal subscale measures emotional self-awareness, as well as the ability to express feelings and communicate emotional needs to others (Bar-On, 2002).

[8] Emotional Recognition and Expression refers to the ability to identify one's own feelings and emotional states, as well as the ability to express those inner feelings to others (Palmer & Stough, 2001).

rated the display of anger to out-groups as more appropriate than Americans. Americans, on the other hand, rated the display of disgust and sadness to in-groups as more appropriate. To Americans, the display of happiness in public was more befitting than to Japanese. In general, items in EI tests tapping emotional expression, refer to "others", "other people" or "colleagues" (e.g., "It is hard for me to share my deep feelings with others") with no indication as to the relationship between the expressor and perceiver. This may obscure effective measurement of emotional expression, as respondents are not allowed to indicate when it is more appropriate to display/express certain emotions to "others" or "colleagues". For example, if there is sufficient trust between colleagues, then colleagues may become friends, view each other as part of an in-group, and the expression of negative emotions within the American individualistic culture to "colleagues" should be appropriate. For example, an item like "I can tell others when I am angry at them" may then indicate effective emotionally intelligent behavior, which should facilitate stress relief and lessen burnout. If the same scenario in Japanese culture exists, it would not be deemed appropriate to display anger to friends (i.e. colleagues, the in-group), rendering this item problematic. Hence, it is recommended that items of emotional expression should differentiate between in-group and out-group members to more efficiently determine whether a respondent will appropriately display emotions (given the cultural context) and subsequent emotionally intelligent behaviours.

Emotion Recognition (Judgment) in Self and Others

Classic studies in literate and preliterate cultures (Ekman & Friesen, 1971; Ekman, 1972; Izard, 1971) provided evidence for the universality of recognition of "basic" emotions (i.e., anger, disgust, fear, happiness, sadness, surprise) in facial expressions, at above-chance accuracy. Critics of these studies have questioned the lack of ecological validity of the stimuli used (Mesquita & Frijda, 1992) whilst others have focused on methodological issues (e.g., use of forced choice repose formats; Russell, 1994). Others have argued that cultural differences in the data of these original studies were overlooked as the interest of the researchers was in exploring agreement, not disagreement (Matsumoto & Assar, 1992) and therefore the examination of cultural differences in the same data has received more attention recently (e.g., Mesquita & Frijda, 1992; Russell, 1994). For example, Huang, Tang, Helmeste, Shioiri, and Smoeya (2001) report results (Japanese and Caucasian Facial Expressions of Emotion photo set, Matsumoto & Ekman, 1988) that imply cross-cultural differences between American and Asian viewers in identifying emotions from static facial expressions. This was noted particularly when the posed emotion had negative consequences. In addition, evidence for the cultural universality (Scherer, Banse, & Wallbott, 2001) and differences (Van Bezooijen, Otto, & Heenan, 1983)

in recognition of emotions in vocal affect has been reported. A recent meta-analysis by Elfbein and Ambady (2002) provided compelling evidence to support an interactionist interpretation of emotional recognition. Although evidence was found for the universality of certain core components of emotion, evidence of an in-group advantage (i.e., understanding emotions more accurately when they are expressed by members of the same national, ethnic, or regional group) that accounts for the cultural variability in emotion recognition was also reported. The meta-analysis was based on the results of 97 studies (182 samples). More importantly, the results also suggest that the "...match between the cultural background of the expresser and judge is important..." (Elfbein & Ambady, 2002, p. 229), which is consistent with the theory of cultural learning of emotional behaviour. Moreover, the in-group advantage was also noted in groups that share the same native language (e.g., when English-speaking groups like Scottish, Irish and New Zealanders judged the emotional expressions of Americans) (Elfbein & Ambady, 2002).

Emotional recognition is a core facet of EI. It appears in the revised and refined Mayer and Salovey model (1997) as "branch one" termed Perception of Emotion (i.e., the ability to perceive emotions in oneself and others, as well as in objects, art, stories, and the like). In the Bar-On (2002) model it appears in the Intrapersonal as well as the Interpersonal subscales,[9] whilst being contained in the Emotional Recognition and Expression, as well as Emotional Understanding[10] factors in the SUEIT (Palmer & Stough, 2001). Items that tap into different elements of emotional recognition (verbal and non-verbal) and that may be influenced by an in-group advantage between the expresser and perceiver include: "It is hard to determine how a colleague is feeling from their body language alone", "I can tell how a colleague is feeling by the tone of their voice", "I can determine when a colleague's emotional reactions are inappropriate", and "Colleagues' facial expressions reveal a lot to me about the way they are feeling". It is important that the item content explicitly differentiate between in- and out-group members.

Individualism Versus Collectivism

As there is strong evidence to suggest cultural differences in emotional expression, differences in interpreting emotional displays are likely to exist between cultures. Some have suggested that due to an inward focus in individualistic cultures, individuals tend to project their feelings onto others. In contrast, in collectivistic cultures the ability to be aware of the impact of one's emotions on

[9] The Interpersonal subscales assesses the extent to which an individual is able to establish cooperative, constructive, and satisfying interpersonal relationships as well as the ability to understand and appreciate the feelings of others (Bar-On, 2002).

[10] The Understanding Emotions subscale measures the ability to identify and understand the emotions of others and those that manifest in response to workplace environments (e.g., staff meetings).

others is emphasized (Cohen & Gunz, 2002). Moreover, when estimating the intensity of facial expressions, Japanese tend to rate weak expressions as constituting of stronger underlying emotions than when Americans rate the same facial expression (Matsumoto & Ekman, 1989). In addition, they rate both happiness and negative emotions of lesser intensity than their American counterparts (Matsumoto & Ekman, 1989). These findings have been interpreted in the light of the effect of display rules (Matsumoto, Yoo, Hirayama, & Petrova, 2005). Americans may be more prone to trusting the authenticity of the display, whilst the Japanese are inclined to infer from a weak expression that even though a person feels a strong emotion, they partly inhibited it.

A recent study by Masuda, Ellsworth, Mesquita, Leu, and Veerdonk (2005) on Japanese and American university students, reports that social context affects the perceived intensity of facial expression. The results revealed that the perceived intensity of facial expressions (e.g., a central figure in picture displaying anger) judged by Japanese (collectivist culture), were more influenced by the social context of emotions (e.g., others in a picture showed to the respondent, also displayed anger), than the perceived intensity of expressions judged by individuals from individualistic cultures (i.e., the social context did not play such a big role in the judgment).

Items such as "Colleagues' facial expressions reveal a lot to me about the way they are feeling" and "I can determine when a colleague's emotional reactions are inappropriate" may be susceptible to bias due to the effect of display rules and values embedded in collectivistic versus individualistic cultures, as evidenced by the aforementioned studies. In addition, the item "I'm good at understanding the way other people feel" might be biased as Japanese will rarely describe themselves as "above average", no matter how skillful they actually are (Kalat & Shiota, 2007).

Cross-Cultural EI Research: Methodological Issues

Convergence of Two Approaches

Different terminology for the two distinct approaches, i.e., etic–emic, culture-specific–cultural general, and cultural–cross-cultural, in the research of emotion across cultures are often used. The increasing emergence of the interactionist perspective permeating recent theoretical models (Matsumoto, 1989; Russell, 1994; Scherer & Wallbott, 1994) that account for universality and cultural variation in particular aspects of emotion, concur that both these strategies/approaches are important for advancement in the field. Mirroring these advances in emotion research, research on EI across cultures should aim to harness the potential of both these approaches whilst avoiding known methodological pitfalls. Cross-cultural research in EI to date is rudimentary and limited. Without such cross-cultural comparisons, psychological theory is

confined to its own cultural boundaries (Van de Vijver & Leung, 2001). In conducting cross-cultural EI research, ethnocentrism in current EI theories (and associated measurement instruments) may be reduced as the limitations of current theories are acknowledged, by seeking to extend the data and theory through inclusion of other cultures (Berry et al., 2002). For example, although scientific efforts addressing the matter of if and how EI can be developed, is in infancy (e.g., Wong, Foo, Wang, & Wong, 2007; Zeidner, Matthews, Roberts, & MacCann, 2003; Matthews, Roberts, & Zeidner, 2003), the utility of cross-cultural knowledge to enhance our understanding in this EI domain, should not be underestimated. If it is argued that more congruence (better fit) between personal and cultural norms/beliefs enhance social interactions and adjustment (typical outcomes of individuals with high EI) then a detailed understanding of how culture drives the norms of emotionally intelligent behaviour (in a specific culture), is an essential basis for any development intervention. This highlights the need for EI research studies conducted from within the cultural psychology framework. That is, where individual behaviour (or psychology), and culture are viewed and studied as mutually constitutive phenomena (Miller, 1997). Leung and Zang (1995), for example, noted the need for indigenous research and theorizing, as well as research that integrates different cultural perspectives, as vital to the establishment of more universal psychological theories and their usefulness.

Cultural Bias in EI Measurement Instruments: Construct, Item and Method Bias

The methodological ideal in cross-cultural psychology is to transport a procedure established in one culture, with known psychometric properties, to one or more cultures with the goal of making a cross-cultural comparison (Berry et al., 2002). The methodology of the natural sciences is mirrored in these comparative studies, with the preference for using standard instruments and a priori formulated hypotheses which is being tested in an experimental or quasi-experimental fashion (Poortinga, 1997). However, the practice of "blindly exporting" Western instruments to other cultures, without concern for the appropriateness of the measures, could seriously impede theoretical advances (Van de Vijver & Leung, 2001). In this chapter, various theoretical/conceptual propositions that explore why current Western monocentered self report EI measures might be susceptible to cultural bias, when exported to different cultures, have been suggested. Bias encapsulates a range of factors that introduce "disturbances" into cross-cultural assessment, influencing the comparability of scores across cultures (Van de Vijver, 2003). Hence, if bias is present, the differences in scores of the indicators of a particular construct do not correspond with differences in the underlying trait or ability (Van de Vijver & Tanzer, 1997). This has a bearing on the equivalence of the scores across cultures and more

specifically, the scope for comparing the scores over different cultures, with decisions on the absence or presence of equivalence being grounded in empirical evidence (Van de Vijver, 2003). It has been argued that the problem of bias in cross-cultural research is mostly related to three sources, i.e., the construct being studied, the methodological procedure and the item content (Byrne & Watkins, 2003; Van de Vijver & Poortinga, 1997; Van de Vijver & Tanzer, 1997). Cultural bias, when uncovered, provides systematic information about cross-cultural differences, which should not be equated with measurement error (Berry et al., 2002). Such knowledge (i.e., cultural specificity of the construct) could be applied in modifying existing EI instruments, as well in guiding the development of more culturally appropriate development interventions.

Construct bias is present when the effects of a biasing factor relate to the operationalization of a construct, and therefore the construct contains a degree of disparate meaningfulness when measured over the different cultural groups (Berry et al., 2002; Byrne & Watkins, 2003). If construct bias exists, the psychological construct is not identical across cultures (Van de Vijver & Leung, 1997). Consider, for example, the inclusion of a "happiness" subscale into the EQ-i (Bar-On, 1997). In European-American culture, the right to the pursuit of happiness (e.g., made explicit in American Constitution) shapes the view that happiness should be a defining personal characteristic central to the identity of self. Therefore, expression of unhappiness signals failure (D'Andrade, 1984) and would possibly be equated with less emotionally intelligent behaviour in this culture. In the Asian cultural model of emotion, moderation in emotional experience and expression serves the fundamental belief embedded in dominant religions (e.g., Buddhism) that there is a need for a balance between positive and negative feelings, each moderating the extent of the other (Mesquita & Leu, 2007). Here, the inclusion of a "happiness" subscale with item content that, for example, refers to being happy with your life, finding pleasure in life and generally being cheerful, may obscure the conceptualisation of EI in Asian cultures. That is, it could be argued that happiness may not be a central dimension that defines emotionally intelligent behaviour within the Asian cultural context.

In relation to item content, the effects of a biasing factor can manifest in a single or few items, known as "item bias" or "differential item functioning" (DIF) (Berry et al., 2002). Poor translation or inappropriate items for a specific context may cause item bias (Van de Vijver & Leung, 1997). Item bias involves a lack of equivalence in a separate indicator or item (Fontaine, 2008). Hence, if individuals from different cultural groups with an equal ability/trait/attitude do not have the same probability of giving a correct answer, item bias exists (Van de Vijver & Leung, 1997). If removing biased items eliminates group differences on the scale, the groups may have differed because of DIF rather than from inherent group differences in the construct. The previous sections attempted to explicate how cultural dimensions and subsequent cultural group membership,

could introduce these two types of bias into self-report EI measurement when applied cross culturally.

However, the possibility of method bias in EI measurement should also be considered. Method bias is present if the assessment procedure introduces unwanted inter-group differences (Van de Vijver & Leung, 1997). In this case the biasing factor influences responses on most, or all items (Berry et al., 2002). Four common sources of method bias include differential social desirability, differential response styles (e.g., extremity scoring and acquiescence), differential stimulus familiarity and the lack of comparability of samples (Berry et al., 2002; Byrne & Watkins, 2003). In addition, the language of assessment in multilingual persons, i.e., employees who work in big multinational companies often respond to psychometric questionnaires in their second language, might be a potential source of method bias (Church, 2001).

Applying Measurement Invariance in Cross Cultural EI Research

In cross-cultural psychology, typical statistical techniques used to investigate structural equivalence include Exploratory Factor Analysis, followed by target rotation and the calculation of Tucker's phi (Van de Vijver & Leung, 1997; Van de Vijver, 2003). Obtaining evidence of structural equivalence allows the researcher to conclude that the psychological constructs underlying the instrument are identical (Van de Vijver & Leung, 1997). However, a less popular alternative is to utilize CFA, which allows for the testing of a large set of hierarchically linked hypotheses of cross-cultural invariance (Van de Vijver & Leung, 2001). More specifically, the use of multi-group CFA modeling (Jöreskog, 1971) via Structural Equation Modeling (SEM) is especially functional and effective in establishing cross-national measurement invariance (MI) (Steenkamp & Baumgartner, 1998). Here measurement equivalence (or invariance) is defined as the mathematical equality of corresponding measurement parameters for a given factorially defined construct, across two or more groups (Little, 1997). More specifically, obtaining MI indicates that (Little, 1997, p. 56):

> (1) the constructs under investigation are generalizable to each sociocultural context; (2) that the least possible amount of sources of bias and error are present (e.g., cultural bias, translation errors); (3) it is valid to assume that cultural influences have not impacted the construct's underlying measurement features; and (4) it is permissible to assess between-culture differences as mean-level, variance and covariance, or correlational effects.

An increasing amount of researchers have applied measurement invariance procedures to address aspects of the cross-cultural generalizability of measures and their associated models (e.g., Crockett, Shen, Randall, Russell, & Driscoll, 2005; Culhane, Morera, & Watson, 2006; Little, 1997; Riordan &

Vandenberg, 1994) whilst others have focused on conducting cross-group comparisons with ethnic groups or different nationalities (e.g., Durvasula, Andrews, Lysonski, & Netemeyer, 1993; Ghorbani et al., 2002) as the basis for comparison, as opposed to gender or age (e.g., De Frias & Dixon, 2005; Gomez & Fisher, 2005).

With the recent resurgence of MI research, and increased application of the procedure, the aim is often to uncover instrument invariance as a way to ensure that group differences on the mean scores of a construct are meaningfully comparable. A different, and much less frequent application of MI tests is applying it in a hypothesis testing context where a priori conceptual and theoretical grounds (e.g., diversity in sociocultural contexts) may be identified as to why differences in psychological processes may exist (Vandenberg, 2002), and using MI procedures to uncover such differences. For example, Cheung and Rensvold (2002, p. 252) recently argued that, "metric invariance...need not be seen merely as an obstacle that must be surmounted before the equality of latent means can be assessed; rather it should be seen as a source of potentially interesting and valuable information about how different groups view the world...the same comment can be made with respect to any one of the measurement invariance failures considered." Therefore, in cross-cultural research such an approach to MI testing requires that an absence of non-invariance should be predicted a priori, based on the conceptual basis of differential cultural values (Chan, 2000), across the different groups that are being studied. This could be a powerful way to explore the cultural specificity of the construct, instead of just providing highly speculative, post hoc interpretations of why MI failed to hold over the various groups under investigation.

In extending the use of MI tests as a hypothesis testing tool in the context of cross-cultural research, the only two studies that have attempted this (Cheung & Rensvold, 2000; Riordan & Vandenberg, 1994) have been criticised for not operationalising the "trigger" event – for example, assuming that because a person belongs to a certain nationality, he or she automatically prescribes to the national value system (e.g., US nationals prescribing to an Individualistic value system, Malaysian nationals prescribing to high Power Distance). As the degree of prescription to these value systems was not directly operationalized the validity of the results have been questioned (Vandenberg, 2002). However, it could be argued this is a problem permeating almost all cross-cultural research. Recent empirical advances have seen the development of individual-level measures (Matsumoto, Weissman, Preston, Brown, & Kupperbuscg, 1997; Triandis & Gelfand, 1998) and its related concept of independent versus interdependent self-construals. However, individual level measures to accurately measure the other dimensions of culture still need to be developed and should in future be incorporated into studies as context variables to effectively unpack cross-cultural comparisons (Matsumoto, 2004).

Conclusion

Gohm (2004) in her commentary on the target article of Matthews et al. (2004) in *Psychological Inquiry* ("Seven myths about emotional intelligence"), notes cross-cultural work, especially in non-Western countries, as an obvious area for further investigation to expand our current understanding of EI. In this chapter current available cross-cultural EI research was reviewed. Weaknesses of these studies were outlined. Attention was drawn to the need to examine cultural bias and inequivalence in future culture-comparative EI studies. To this end a review of key aspects of three decades of emotions and culture research was presented, whilst implications for EI conceptualization and operationalization within the framework of different cultures were discussed. The discussion focused on emotional regulation, expression and recognition as key aspects of EI. Suggestions are made how cultures may differ on these aspects of EI. It was argued that such differences may be a result of the fact that cultures (with different cultural value dimensions) differentially define appropriate and adaptive emotionally intelligent behaviours. Hence, cultural differences in values (e.g., Power Distance, Individualism) could introduce cultural bias into Western cross-cultural EI measures when these are applied cross-culturally. Specific items were predicted to be susceptible to cultural bias based on the item content, which, for example, taps some aspect of Individualism or Power Distance values (cultural dimensions upon which most nationalities differ). The presence of cultural bias (construct, method or item bias) would express itself in the structural, metric or scalar equivalence of the given instruments, when measures are transported from one culture (e.g., Western) to another (e.g., non-Western).

As a first step in the advancement of cross-cultural EI research, this chapter illustrated the need to differentiate cultural bias from true construct variance in self-report mixed model measures of EI. This is important in cross cultural EI research in general. It also has practical implications when such measures are utilized in the increasingly multicultural workplace. The equivalence of measurement operations of transported measures should routinely be inspected before mean differences on the latent trait may be meaningfully compared across groups. EI has been described as, "highly influential and important in occupational settings, a construct that may even hold the promise of a predictor with reduced adverse impact" (Zeidner, Matthews, & Roberts, 2004, p. 394). EI has been found predictive of real life criteria (Van Rooy & Viswesvaran, 2004) and is increasingly being used in the workplace as a predictor (Van Rooy et al., 2005). If equivalence assumptions remain untested, the practical utility of EI as a valid predictor when utilised over different cultural groups, may be questionable. An absence of metric equivalence, for example, requires within group norms to avoid adverse impact in personnel selection decisions. Whether such norms are available and being used is an issue beyond the scope of this chapter.

The development of EI inventories in Asia and Africa, independent of Western influences, might add valuable knowledge to the current conceptualization of

the construct. The development of such indigenous scales may uncover other aspects of emotional intelligent behaviors which are cultural specific, and have strong predictive validity within that culture (or even other cultures). It is proposed that the development of such inventories should be completely void of Western influence so as to allow for true cultural conceptualizations of the construct to be captured. For example, even though The Emotional Intelligence Scale (WLEIS) was developed in Hong Kong by Wong and Law (2002) it may still not capture the full conceptualization of EI in this culture. This is because the scale was developed by asking students to generate items for the four Mayer and Salovey (1997) EI dimensions. It may be argued that this imposed a Western, ethnocentric definition of the construct into the scale development process. Although a recent replication in the Beijing and Shandong provinces in mainland China found support for the four factor structure of the WLEIS (Wang, 2007), it does not necessarily preclude the existence of other dimensions of EI in this culture (not included in this scale).

On a practical level cross cultural EI assessment practices should be uniformly applied – especially when research is being conducted. For example, a respondent's verbal ability may influence test results in the form of method bias and confound MI (equivalence) results. Marsh (1996) has demonstrated a negative relationship between the observation of a negatively keyed item factor and verbal ability. This suggests that individuals with less verbal skill (e.g., bilinguals) may have difficulty reading negatively keyed items accurately, particularly those items with double negatives. Wong, Rindfleish, and Burroughs (2003) have also identified cultural variability in the applicability of reverse-worded Likert-type questions. They report such items to be problematic when administered to East Asian, but not Western, populations. Hence, when possible, mother tongue testing should be conducted. This implies that translation equivalent versions of instruments should be used.

In addition, the possibility that method bias exists as a product of national differences in response styles, should also be routinely inspected in cross-cultural research. Extreme Response Styles (ERS) is the tendency to use the extreme ends of a rating scale (Cheung & Rensvold, 2000; Van Herk et al., 2004). Acquiescence Response Style (ARS) is also known as agreement bias, i.e., a tendency to agree with questions, regardless of question content (Johnson, Kulesa, Cho, & Shavitt, 2005). In Western cultures this type of method bias should be minimal as high Individualism (Hofstede, 1980) is associated with less ARS (Van Hemert, Van de Vijver, Poortinga, & Georgas, 2002) and not related to ERS (Johnson et al., 2005). However, method bias may be more pronounced in scores obtained from non-Western societies characterized by Collectivism and high Power Distance (e.g., Malaysia, India). That is because high Power Distance is associated with ERS (Johnson et al., 2005) and more ARS (Van Hemert et al., 2002). Collectivism has also been found to be positively related to ARS (Smith, 2004). Demonstrating that a measure is free of ERS and ARS eliminates alternative explanations for observed cross-cultural

differences. Such response styles may lead to invalid inferences in cross-cultural research (Van Herk, Poortinga, & Verhallen, 2004) if left undetected.

Future research should also be aimed at the quantification of bias and equivalence (Van de Vijver & Leung, 2000). Suspected biasing factors should be measured. For example, by including a social desirability measure together with measures of the target construct in the design of a study, the presence or absence of this type of bias may be confirmed/rejected. In addition, measuring contextual factors (i.e., including explanatory variables) may assist in verifying (or rejecting) particular interpretations of cross-cultural differences. This facilitates a movement away from post-hoc, speculative, unvalidated interpretations, often found in exploratory cross-cultural studies. A monotrait-multimethod research design could also be used to empirically examine bias (Van de Vijver & Leung, 2000).

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