Received 8 May 2015
Accepted 8 May 2015

Exploring the potential effects of expatriate adjustment direction

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Abstract

Purpose – The expansion of the phenomenon of two-way flow expatriation due to the accelerated process of globalization has resulted in an increasing need for a better understanding of cross-cultural transitions. Given the absence of convincing a priori theoretical explanations, as part of an inductive discovery process, the purpose of this paper is to examine the relationships between cultural intelligence (CQ), job position, and cross-cultural adjustment (CCA) for expatriates.
Design/methodology/approach – Explicit consideration is given to uncovering the potential importance of cultural distance asymmetry (CDA) effects. Structural equation modelling techniques are employed to analyse survey data from a two-flow sample of expatriates between Australia and China.
Findings – Results indicate that motivational CQ has a statistically significant effect on CCA. CDA is found to moderate the relationship between job positions and expatriate adjustment, such that the relationship depends on the direction of cultural flow between more and less authoritarian cultural contexts.
Originality/value – These findings discover and highlight the potential importance of identifying the direction of cultural flows of expatriation in understanding successful expatriates' CCA.

Keywords Cultural intelligence, Cross-cultural adjustment, Adjustment direction, Two-way flow expatriation
Paper type Research paper

Introduction

The cross-cultural adjustment (CCA) of assigned expatriates within and across different cultural and national boundaries has been an issue of critical significance in the international management literature (Hofstede, 2001; Molinsky *et al.*, 2012; Selmer, 2001, 2006; Trompenaars and Hampden-Turner, 1997; Ward and Kennedy, 1993). Starting with Black and Mendenhall (1991) and others in the 1990s, expatriate adjustment theories and models have been developed in the psychological, socio-cultural, and human resource management domains. However, only scant literature exits in examining empirical regularities relating to the direction of cultural flows in describing the CCA of expatriates (Zhang, 2013). The absence of definitive a priori theoretical explanations of the observed effects of two-way flows of cultural asymmetry on CCA requires empirical research which can discover and therefore induce potential theoretical explanations. This paper attempts to explore and discover whether the success of the expatriation process depends not only on the expatriates' competencies and local cultural environments, but also on the effects of the direction of cultural flows that an expatriate is assigned.

This study also goes beyond the cultural perspectives and proposes a holistic approach to examinecultural intelligence (Earley, 2002) themes at the micro (individual difference) level and the organizational-level antecedents of expatriate adjustment.

Cross Cultural & Strategic Management
Vol. 23 No. 1, 2016
pp. 158-183

2059-5794
DOI 10.1108/CCSM-05-2015-0062

It is suggested that single-level perspectives related to either macro or micro circumstances alone cannot adequately represent an overall panorama of cross-cultural management adjustment processes. As a multidimensional phenomenon, expatriate adjustment needs to be studied using a systemic cross-level approach. In particular, this paper explores the relationships between cultural intelligence (CQ), job position, and CCA for expatriates, and the role that cultural distance asymmetry (CDA) may play in moderating these relationships.

The study involves a sample of a two-way flow expatriation between a "western" country (Australia) and an "eastern" country (China) and employs structural equation modelling (SEM) techniques for data analysis. The paper seeks to uncover important empirical relationships to foster the development of appropriate theoretical frameworks for explaining the phenomenon of two-way flow expatriation. The next section of the paper outlines some relevant literature which investigates the broad issue of CCA and in particular the notion of CDA and how this may potentially impact on adjustment. A series of tentative propositions are developed to potentially uncover some important empirical relationships.

Background and research questions

CCA

CCA is a term used to signify the socio-cultural sense of adjustment and psychological feelings of well-being that expatriates experience when working in a foreign culture (Searle and Ward, 1990; Black *et al.*, 1991). Culturally adjusted expatriates tend to be open to the host culture and are able to add new behaviours, norms, and rules to the foundation provided by home cultures (Church, 2000). In contrast, maladjusted expatriates are unable or unwilling to accept overseas assignments and adjust their behaviour to the host country behaviours, norms, and rules.

Two distinct types of CCA (i.e. socio and psycho) have been identified in the international management literature. These two constructs are conceptually inter-related but have different connotations. Socio-cultural adjustment (SCA) refers to an individual's willingness and capability to become involved in, fit in, or effectively interact and interrelate with host country nationals (Black *et al.*, 1991). Black *et al.* (1991) proposed a distinction between three inter-related aspects of being able to function successfully on the job (work adjustment), to adapt to everyday living conditions (general living condition adjustment), and to interact well with people in the country where assigned (interaction adjustment). Together, these three facets of adjustment encompass the work and non-work domains of the expatriation experience, and have been empirically tested in previous research on individuals' cross-cultural abilities (e.g. Black and Stephens, 1989; McEvoy and Parker, 1995). Psycho-cultural adjustment (PCA) refers to individuals' subjective well-being or satisfaction in their new cultural environments (Ward and Kennedy, 1996). It focuses on adjustment processes that reflect cultural variance in behaviour, language and meaning, emotional state, cognitive perceptions, attitudinal factors, and personal trait variables. It has been applied in studies of the adjustment of expatriate managers (Anderzen and Arnetz, 1999; Nicholson and Imaizumi, 1993).

This research focuses on two potential predictors of CCA, i.e. cultural intelligence (CQ) and role positions, based on their importance in prior research (e.g. Ang *et al.*, 2015; Caligiuri and Cascio, 1998; Leung *et al.*, 2014). Ang *et al.* (2015) reviews the empirical evidence of CQ as a valid measurable construct and asserts the significant relationships between individual-level CQ and perceived environmental differences and adaptations. In recent reviews of intercultural competence models, Leung *et al.* (2014) and

Matsumoto and Hwang (2013) both conclude that the CQ model is one of the most promising intercultural competence models. Meanwhile, Caligiuri and Cascio's (1998) conceptual paper proposes that female expatriates with higher status within an organization may be better adjusted cross-culturally. Caligiuri *et al.*'s (1999) study empirically examined factors affecting the performance and CCA of female expatriates on global assignments on a sample of 38 female expatriates from the US-based companies. They found that female expatriates with higher position were more adjusted to new cultural environment than are those employed in lower position levels in the organization (Caligiuri *et al.*, 1999).

It is observed from the theories and studies that CQ and role positions represent critical individual and organizational factors in the CCA process. Both CQ and role position are considered as resources that help with the challenges of adjustment. However, although prior research suggests positive relations of CQ and role position with CCA, no research to date has systematically examined the effects of the direction of adjustment. The current study intends to conduct an inductive examination of the cultural asymmetry phenomenon, and explore how cultural asymmetry could potentially affect adjustment outcomes. When the adjustment challenges differ based on cultural asymmetry, the importance of CQ and role position for CCA might also vary based on asymmetry. In other words, it is speculated that the potential moderating effects of asymmetry might exist in the relationships between adjustment and individual-level CQ, and adjustment and organizational-level factor, role position.

Specifically, the research questions for the current study are:

RQ1. To what extent does cultural asymmetry moderate the CQ and CCA relationships?

RQ2. To what extent does cultural asymmetry moderate the relationships between role positions and CCA?

Cultural intelligence

Earley and Ang (2003, p. 59) advanced the concept of cultural intelligence as a basis for explaining individual differences in capability to function in intercultural settings with a definition of "a person's ability to adapt effectively to a new cultural context". Many adjustment studies at the micro level (Ang *et al.*, 2007; Earley, 2002) over last ten years have identified cultural intelligence as a vital cross-cultural construct that determines expatriates CCA process in international assignments. Expatriates with higher levels of CQ are reported to be more likely to adjust at quicker rates (Ang *et al.*, 2007, 2015; Earley and Mosakowski, 2004; Leung *et al.*, 2014).

Earley and Ang (2003) proposed four dimensions that constitute cultural intelligence: meta-cognitive, cognitive, motivational, and behavioural. Metacognitive CQ involves planning, self-monitoring, and use of cognitive strategies (Butterfield, 1994). Individuals with greater metacognitive skills should be better able to understand, interpret, and act according to these cues (Earley, 2002; Earley and Peterson, 2004). Cognitive CQ refers to the knowledge of a new culture that individuals may obtain and the understanding that they build up through a range of cues (Earley, 2002). Motivational CQ refers to individuals' willingness to face and engage the new culture and their inward desire to persevere when faced with difficult situations (Earley and Peterson, 2004). Motivation has been considered a vital aspect of CCA as Earley (2002) asserts that if the motivational facet of cultural intelligence is weak, adjustment will not occur. Behavioral CQ requires that individuals have a

well-developed collection of behaviours and are able to choose appropriate behaviours from this repertoire and exert culturally appropriate behaviours in new cultural circumstances with ease and comfort (Earley, 2002). Those with high levels of behavioural CQ are likely to be capable of exerting situational appropriate behaviours based on their broad range of verbal and non-verbal capabilities, such as presenting culturally appropriate words, tone, gestures, facial expressions, and body language.

Prior empirical studies have indicated that CQ construct predicts expatriate cultural judgement, decision making and task performance (Ang *et al.*, 2007), cultural adaptation (Ang *et al.*, 2007; Williams, 2008; Ramalu *et al.*, 2011), cross-cultural experiences, and need for control (Tay *et al.*, 2008). The understanding of the significance of CQ conceptualization for CCA in diverse cultural environment still remains at an early stage (Ramalu *et al.*, 2011), therefore there is considerable room for researchers to explore the relationship between the different dimensions of CQ and CCA. More than a new concept in cross-cultural study, CQ is also a new perspective to look at CCA. It provides robust answer to the research question of why some expatriates adjust more easily than others from a micro angle. In developing the conceptual framework, the present research incorporates this crucial construct of CQ to represent individual variability.

CDA

Culture refers to a set of attitudes, beliefs, values, and behaviours that are shared by a group of people and are communicated from one generation to the next (Hofstede, 2001). Culture can be studied at different levels, such as individual, national, regional, ethnical, organizational, gender, generation, and social class. Culture, in particular national culture, provides important insights into business management behaviour and has been increasingly employed in the management literature (e.g. Adler, 2002; Hofstede, 2001; Kogut and Singh, 1988; Steenkamp and Geyskens, 2012; Trompenaars and Hampden-Turner, 1997; Trompenaars and Woolliams, 2003).

Cultural distance refers to the extent to which the cultural norms in a host country subsidiary company differ from those of its parent company in home country (Kogut and Singh, 1988). Kogut and Singh (1988) popularized the concept of cultural distance on the basis of Hofstede's (1980) work to examine the magnitude of differences in national culture. The traditional symmetric view has been that growing cultural distance will increase adjustment difficulties and sources of conflict between cultural systems that potentially undermine the cross-cultural interaction.

Brewster *et al.*'s (1993) qualitative study examined British and Swedish management culture using a sample of British expatriate managers in Sweden and Swedish expatriate managers in Britain. The qualitative data collected from interviews, focus groups, and case studies revealed that Swedish expatriate managers found it easy to adjust to a more authoritarian culture in the UK, whereas British expatriate managers stated they had difficulties adjusting to a less autocratic style of management in Sweden and that the consultative style of the Swedes was inefficient. It has certain face validity to many expatriate managers from their personal experience to adjust to cultures of various degrees of authoritarianism in two-way transfers (Brewster *et al.*, 1993). That is, the degree of adjustment achieved among the expatriate managers on reciprocal transfers is not identical, and is affected by the degree of authoritarianism in the host environment.

Selmer's (2007) quantitative study also endorsed a similar asymmetric positioning as in Brewster *et al.*'s (1993) qualitative study. Selmer *et al.*'s (2007) study used a two-flow

sample of US expatriates in Germany and German expatriates in the USA. The study found that there were considerable between-group differences for all the adjustment variables in the sample groups. German expatriates in the USA were better adjusted, both socio-culturally and psychologically, than American expatriates in Germany. The results offered immediate evidence against the symmetric assumption of the impact of cultural distance on expatriate adjustment. Selmer (2007) noted, however, that more rigorous replications of the highly exploratory study are urgently needed to establish whether the result holds true for expatriates from different cultures.

Findings from Brewster *et al.*'s (1993) qualitative study and Selmer's (2007) quantitative study of cultural asymmetry both suggest that the adjustment challenges might differ for expatriates based on the direction of adjustment. In other words, the direction of cultural flow should be taken into account when considering the effect of cultural differences. Shenkar (2001) notes that, "distance" connotes "symmetry", which in the cultural application conceals the different roles of the home and host environments, and confuses firm and environment as "presumably interchangeable". That is, many current scholars in the field rest on an unjustified presumption of symmetric cultural distance impact, for example, the assumption that an expatriate sent from country I to country II faces the same hurdles as an expatriate from country II to country I. If the symmetrical assumption of "growing cultural dissimilarities will increase adjustment difficulties" holds true, there would be no difference in the extent ofSCA and PCA of business expatriates on two-way flow transfers. Nevertheless, the existing empirical evidence does not seem to support the symmetric assumption on cultural distance.

Importantly, Shenkar (2001) and Selmer *et al.* (2007) each challenged the unsupported symmetric measure of cultural distance, indicating that by using cultural distance as a predictor of adjustment, many researchers have neglected the direction of the adjustment required by the assignment. Thus, the construct of CDA is refined and conceptualized, for the purpose of this research, as the asymmetrical impact of cultural distance that is contingent on the direction of cultural flows of the expatriates' foreign assignment.

Propositions

CQ is expected to be related to SCA, because CQ is an individual's cross-cultural capability to function well in new social-cultural contexts (Earley, 2002). Culturally intelligent expatriates are expected to be mindful of the difficulties caused by the changing environment (i.e. mind), to possess higher motivation after early experiences of cross-cultural stress or failures (i.e. heart), and to have greater range of culturally appropriate behaviours in cross-cultural interaction (i.e. body) (Earley and Ang, 2003).

This cross-cultural capability should function in the areas of expatriates' work and non-work adjustment experience, including work; host country national interaction; and general living conditions in Black *et al.*'s (1991) three-dimensional SCA model. Empirically, Ang *et al.*'s (2007) study showed that certain CQ facets such as motivation and behaviour could counteract psychological stress, and thus result in higher levels of CCA, including both SCA and PCA.

Hence, it is proposed that each of the four dimensions of cultural intelligence (i.e. metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ) will be related to SCA. That is:

P1a. CQ is positively related to SCA.

At the same time, it is also expected that there is a relationship between individual CQ and PCA. Cross-cultural interactions involve a series of stress provoking life changes that resort

to resources and necessitate coping responses to maintain a culturally safe zone for oneself. Individuals have a psychological desire or innate tendency to maintain home country norms and values rather than an uncritical imposition of one's own understandings and beliefs during cross-cultural interactions (Wood and Schwass, 1993). The conscious or unconscious motive to cling to home-based norms and values is presumed to hinder CCA.

The promoters of possessing higher levels of CQ require less desire to maintain familiarity with one's home culture, critical reflection on one's own personal and cultural history, wider contextualization of one's values and beliefs, and the acquisition of the knowledge base of different cultures that would enable culturally appropriate behaviours (Earley and Ang, 2003). Individuals with high levels of CQ are expected to be more flexible with the culturally safe zone; be more able to conduct critical reflection about oneself and the new environment; be mindful of their own socio-cultural, economic, and historical location; and thus are more likely to avoid culturally unsafe practices in building the bicultural relationship and multicultural relationship in CCA.

Therefore, it is postulated that each of the four dimensions of cultural intelligence (i.e. metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ) will be related to PCA:

P1b. CQ is positively related to PCA.

Moderating effects of CDA

Cultural tightness-looseness theory (Gelfand *et al.*, 2006; Triandis, 1989) suggests individual characteristics, for example, CQ, have a stronger effect on individual decision (attitude and behaviour) when the cultural context is loose rather than tight and when the cultural context activates cues related with the characteristics. CQ would have a stronger or weaker effect on the expatriates' adjustment depending on the direction of cultural flows. As the direction of cultural flows of the international assignment change, individual differences inmeta-cognitive awareness, cultural knowledge, motivation, and culturally appropriate behaviours may emerge as the most important individual difference within the context of cultural distances (Kim *et al.*, 2006; Tett and Burnett, 2003).

It is speculated that the CDA moderation effects might also exist and function at a higher level in the relationships between position levels and CCA. This tentative speculation is based on power distance theory (Carson *et al.*, 1993; Hofstede, 2001; Schwartz, 2006) which suggests that the position status of an individual may underpin the perception of power bases (Carson *et al.*, 1993), which may, in turn, influence the individuals' adjustment and performance at work (Caligiuri and Cascio, 1998).

In exploring the role CDA plays at the macro level in the CCA process, Brewster *et al.*'s (1993) qualitative research and Selmer *et al.*'s (2007) quantitative study both revealed an asymmetrical impact of varying degrees of authoritarianism in two-way transfers. That is, the degree of adjustment achieved among the expatriate managers on reciprocal transfers is not identical, and is affected by the degree of authoritarianism in the host environment. It is postulated that CDA moderates the relationship between CQ and adjustment, such that the relationship between CQ and adjustment is stronger when the direction of cultural flow is from a less authoritarian cultural context to a more authoritarian cultural environment; conversely, the relationship between CQ and adjustment is weaker when the direction of cultural flow is from a more authoritarian cultural context to a less authoritarian cultural environment. Hence, it is proposed that:

P2. The relationship between CQ and CCA strengthens or weakens as the direction of cultural flow changes.

Specifically, possible moderating effects of cultural distance may exist at individual level on the relationships between expatriate CQ and adjustment such that:

P2a. The relationship between CQ and adjustment is stronger when the direction of cultural flow is from a less authoritarian cultural context to a more authoritarian cultural environment.

P2b. The relationship between CQ and adjustment is weaker when the direction of cultural flow is from a more authoritarian cultural context to a less authoritarian cultural environment.

High-status people are more likely to adopt "strategies involving the control of resources (power bases)" (Stahelski and Payton, 1995, p. 55). This underscores Hofstede's (2001) observation that managers in all settings almost certainly learn to behave as autocratically as their subordinates allow them. Expatriates at higher position levels are more likely to have more managerial discretion. It is acknowledged that expatriates in managerial positions have more authority, additional budgets and therefore, greater autonomy to access cross-cultural coping strategies when needed. When managers have greater discretion and autonomy, they have a wider range of alternatives from which they may choose (Hambrick and Finkelstein, 1987) and this might lead to better CCA. In contrast, non-managerial expatriates may not havel; as many possible coping options with limited resources and little position power (Caligiuri and Cascio, 1998).

Therefore, position level represents a critical organizational factor in the CCA process with a potential CDA moderating mechanisms. managerial discretion theory (Hambrick and Finkelstein, 1987) suggests that when managers have greater discretion, they have a wider range of alternatives from which they may choose and this should lead to better CCA. It is possible that managers would experience potential changes from employing their traditional style in their home cultures to more attuned leadership styles in new environments. However, necessary power, status, and authority, which are more easily delegated to managerial-level individuals, will facilitate CCA when an expatriate manager is sent from low- to high-power distance countries. This is because the authoritative leadership style is deeply embedded in high-power distance cultures, and managerial expatriates would thus face remarkably less adjustment obstacles than the ones from the other way round.

Conversely, when a managerial expatriate who is accustomed to authoritative decision making in high-power distance culture is sent to a low-power distance environment that does not tolerate highly centralized power, the manager's authority, discretion and status may be easily challenged in the less authoritarian, more liberal and more egalitarian low-power distance setting. Therefore, the high-power distance home environment is presumed to cause comparatively more adjustment difficulties to a managerial expatriate attempting to adjust to a less authoritarian environment than the other way round.

Similarly, non-managerial expatriates from low-power distance countries being sent to work in a more authoritative, sometimes highly centralized power environment are likely to face larger disparities between superiors and subordinates. For example, in large power distance cultures, such as China, individuals are not supposed to make organizational decisions without the manager's input (Adler, 1997). Higher levels of adjustment capabilities are needed to tolerate highly centralized power and to face the challenge of at least expecting to be consulted in decision-making and leadership style.

In contrast, because low-power distance cultures put more value on individual worth and freedom, when non-managerial expatriates from high-power distance countries are

sent to work in a more liberal environment (low power distance countries), their self-efficacy level may be enhanced considerably through easier interaction between superiors and subordinates. They would face potentially fewer disparities, less centralization of power, and more egalitarianism between managers and technical workers. Therefore, it is proposed that non-managerial expatriates native to low-power distance cultures when adjusting to high-power distance cultures are likely to face less obstacles than the other way round.

The relationship between position status and adjustment should potentially be moderated by the direction of cultural flow of the international assignments. In other words, it is highly probable that the CDA moderation effect exists in the relationship between position status and CCA. Therefore, the following proposition is developed:

P3. The relationship between organizational position level and CCA strengthens or weakens as the direction of cultural flow changes.

Specifically, possible moderating effects of cultural distance should exist on the relationships between positional level and adjustment such that:

P3a. The relationship between positional level and adjustment is stronger when the direction of cultural flow is from a less authoritarian cultural context to a more authoritarian cultural environment.

P3b. The relationship between positional level and adjustment is weaker when the direction of cultural flow is from a more authoritarian cultural context to a less authoritarian cultural environment.

To conclude, although the above arguments suggest that CDA might moderate relationships of CQ and role position with CCA, no theories to date could offer definite explanation as to which direction of the two-way flow would be more challenging. Therefore, the current study takes an inductive approach to discover the effects of CDA.

Figure 1 summarizes the key relationships in the proposed model.

Method

Sample

To address the research propositions to uncover potentially important empirical relations, an appropriate two-flow way sampling frame of Australian expatriates in

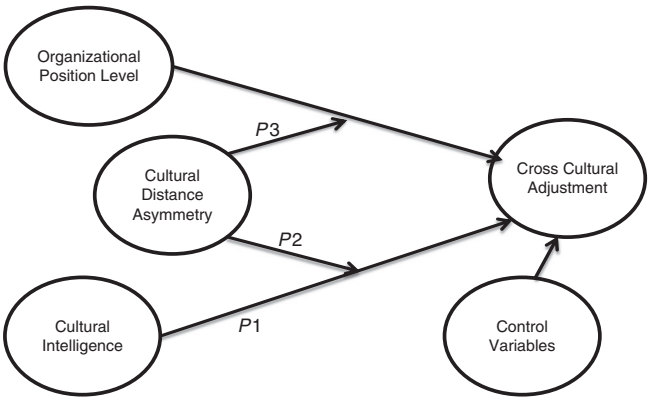

Figure 1. Cross-cultural adjustment model

China (AusChn) and Chinese expatriates in Australia (ChnAus) was chosen. The chosen sampling frame reflects two geographically and culturally distant countries which exhibit large discrepancies in cultural characteristics. For example, Hofstede's (2001) typology of the cultural dimensions, suggests that Australia scores low for power distance and long-term orientation but high for individualism. In contrast, China scores high for power distance and long-term orientation but low for individualism. These distinctive characteristics and the comparison of a western vs eastern culture, make these countries a particularly useful vehicle through which the hypotheses can be investigated.

The principal sources employed as the sampling frame were the member directories of the Australian Chamber of Commerce in China and Australian Chinese Chamber of Commerce. These directories were supplemented by identifying expatiates through other business groups and corporations who employ reciprocal transfers and professional networking internet sites. In total, approximately 2,000 expatriates were identified as part of the sampling frame. A four-wave communication procedure was employed to elicit responses: a pre-approach communication about the research; an initial distribution of the survey instrument; a second survey distribution two weeks later; and finally a follow-up reminder containing an information letter and invitation to a web survey link approximately four weeks later. The survey instrument was distributed both as a paper mail survey and as a web-based instrument.

Using the methods of forward translation (Hambleton, 1993) followed by back translation (Brislin *et al.*, 1973), all the questions that were sourced from English language publications were translated into Chinese in order to ensure that the contents were fully understood by expatriates from China. The back translation method is important in cross-cultural studies to ascertain the equivalence of meanings of different languages. This improves the reliability and validity of research conducted in different languages (Hui and Triandis, 1985), and it allows the development of the research instrument to be devoid of any linguistic bias (Brislin *et al.*, 1973). The original and back-translated versions were then compared, redrafted, and edited. Cronbach's α coefficients for each of the measures were comparable between the English version and the Chinese version of the scales.

A number of research design features were implemented to reduce the potential impact of any common-method bias, Podsakoff *et al.* (2003). Respondents were assured of their anonymity when answering the questions and the measures employed have been extensively validated in previous studies. These procedures reduce respondents evaluation apprehension and any comprehension ambiguity. The use of different scale end-points for the items (1-7 and 1-4) also reduces the likelihood of significant acquiescence bias. As a check for common-method bias Harman's single-factor test (Podsakoff *et al.*, 2003) was employed to examine whether a single factor provided an adequate fit of the collected data. An exploratory factor analysis suggests that one factor extracts only 36.6 per cent of the variation in the data. A confirmatory factor analysis (CFA) of a single factor fitted the data poorly ($\chi^2 = 6{,}755.4$, $df = 990$, $\chi^2/df = 6.82$; RMSEA = 0.157, CFI = 0.587), implying that respondents did not respond to all the items in a similar way. This check provides some evidence for the absence of any common-method bias due to the data collection process.

In total 267 responses were returned from the survey distribution, implying a 13.3 per cent response rate. Among the returns, 26 cases contained more than 25 per cent missing values and were discarded. Checks were performed to gauge the degree of sample representativeness and non-response bias. Goodness of fit χ^2 tests for the concordance between the sampling frame and sample for industry type

($\chi^2(3) = 3.92$) and organizational employee size ($\chi^2(2) = 2.45$) indicated no significant differences (at the 5 per cent level) between the sampling frame and sample. A series of mean *t*-tests on differences between early and late respondents were conducted for the key variables, the majority 68 out of 71 (95.8 per cent) indicated no significant differences between early and late respondents which may indicate the absence of any significant non-response bias.

The Mahalanobis distance measure was used identify potential outliers and an analysis of the data both with and without outliers indicated an unusual influence of one case which was subsequently deleted from the sample. This resulted in a usable sample of 238, 109 of which relate to AusChn and 129 to ChnAus. In the overall sample, most of the expatriates are males (83.7 per cent) and married (76.6 per cent). Most of the sampled participants were between ages 30 and 39 (49.8 per cent), possessed a university degree (49.8 per cent), worked in 1-3 prior overseas assignments (59.4 per cent), and had 1-5 years previous time spent in the host country (46.4 per cent). The main attribute differences between the two sub-samples are: AusChn are older (less than 39 year age group: 41.2per cent (AusChn) and 76.8 per cent (ChnAus)); have more postgraduate degrees (37.6 per cent (AusChn) and 15.5 per cent (ChnAus)); and hold higher positions (managers or directors 60.6 per cent (AusChn) and 39.5 per cent (ChnAus)).

Measures

The endogenous dependent variable CCA, is represented by two sub-constructs SCA and PCA. SCA was measured using the Black and Stephens's (1989) 14-item scale. The measure has been found to be valid and reliable when applied on culturally dissimilar samples (Robie and Ryan, 1996). It is designed to measure three dimensions of SCA: work adjustment, general living conditions, and the host country nationals' interaction adjustment; and is operationalized as a second-order factor construct. To assess PCA the 12-item general health scale developed by Goldberg (1972) is employed. The scale has been applied to monitor levels of well-being in organizational contexts (Forster, 2000), and has been extensively employed in expatriation studies as measures of expatriates' subjective well-being and psychological adaptation in overseas assignments (e.g. Anderzen and Arnetz, 1999; Selmer, 1999, 2007; Williams, 2008).

Cultural intelligence is measured by the 20-item CQ scale instrument developed by Ang *et al.* (2004). It has been used widely in recent cross-cultural management studies (e.g. Ang and Inkpen, 2008; Ramalu *et al.*, 2011; Templer *et al.*, 2006; Williams, 2008). Ang *et al.* (2007) cross-validated the CQ Scale and found it to be highly reliable and valid. The scale measures four facets of cultural intelligence, namely, the meta-cognitive (CQ_MC), cognitive (CQ_COG), motivational (CQ_MOT), and behavioural (CQ_BEH) dimensions. Consistent with previous studies and to explore possibilities of explanatory differences across the facets of CQ, the four first-order dimensions are used in modelling[1].

Over time, the validity of Hofstede's (1980) index on cultural dimensions has been confirmed by many studies (e.g. Van Oudenhoven, 2001; for an overview of earlier replications, see Søndergaard, 1994), suggesting that they can reliably be used to classify countries according to their national cultures and to measure the cultural distance between them. Although some scholars have become increasingly critical of the index and of Hofstede's underlying work (e.g. Shenkar, 2001; Steenkamp, 2001), the main stream of international business research still include cultural distance as an explanatory variable and most studies have measured cultural distance through Hofstede's (1980) index on dimensions of national culture (see Harzing, 2003

for an overview). This is mainly because little progress has been made in developing reliable alternatives, and recently developed scales may easily under- or over-estimate cultural distance. Therefore, cultural distance is treated as an objective rather than a perceptual measure in this research.

The moderator is CDA and is represented by the direction of cultural flows between the two cultural groups. A categorical moderating variable based on the two groups AusChn and ChnAus is used with multiple-group analysis to model the moderating impact of CDA. Organizational position level is represented by a binary variable describing the position as either managerial/director or non-managerial.

A series of control variables are also employed to capture any variation in the relationships due to factors not controlled by the sample design. The control variables employed are: age, gender, spouse support, education, local language ability, previous time in the host country, and prior international assignments; these variables have been shown to have a potential effect on adjustment in previous research (Black *et al.*, 1991; Hechanova *et al.*, 2003).

Analysis

A two-step approach was employed for estimation, initially a measurement model of the reflective measures was estimated using CFA and then full structural equation models were estimated to examine the propositions. For the SEM estimation two models were examined; first, the model without the moderating variable to examine *P1* and second the model with the moderating variable to examine *P2* and *P3* as depicted in Figure 1. Estimation was performed using AMOS (ver 20.0) and full information maximum likelihood, with an explicit recognition of missing data. All the employed items are detailed in the Appendix and the correlations and summary statistics of the employed variables are provided in Table I.

The estimation of the measurement model with all the original scale items resulted in a marginally poor fit ($\chi^2 = 2{,}595.5$, df = 975, $\chi^2/\text{df} = 2.66$; RMSEA = 0.084, CFI = 0.884). An examination of residuals, loadings, and modification indices suggested the removal of seven items to achieve an acceptable model fit ($\chi^2 = 1{,}420.6$, df = 681, $\chi^2/\text{df} = 2.08$; CFI = 0.941; RMSEA = 0.068). A comparison of the average variance extracted (AVE) and squared correlations for all pairs of constructs (Fornell and Larcker, 1981), indicate acceptable degrees of discriminant validity (Table I). All AVEs exceed 0.5 implying good convergent validity and Cronbach α coefficients are acceptably high exceeding 0.80, illustrating useful reliability properties.

To examine *P1* the structural equation model without the moderating effect of cultural groups was estimated and yielded satisfactory fit indices ($\chi^2 = 1{,}814.8$, df = 946, $\chi^2/\text{df} = 1.92$; RMSEA = 0.062, CFI = 0.934). Following Byrne (2010), to examine *P2* and *P3* a series of multiple-group analyses were conducted to assess the categorical cultural group moderator variable effects on the posited relationships. The estimated models varied from all coefficients being unconstrained between groups to all coefficients being constrained. Based upon an evaluation of goodness of fit statistics and χ^2 difference tests, the preferred multiple-group model assumes that only the measurement weights between the two groups are equal and results in an acceptable fitting model ($\chi^2 = 3{,}377.09$, df = 1,921, $\chi^2/\text{df} = 1.80$; RMSEA = 0.057, CFI = 0.898). The χ^2 difference test between the null model of measurement weights invariance and the unconstrained model is statistically insignificant ($\Delta\chi^2 = 24.4$, df = 29, $p = 0.701$). This indicates the existence of measurement invariance across the two countries.

Table I.
Correlation coefficients and summary statistics

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Gender	1															
2. Age	−0.028	1														
3. Marital	−0.113	0.202**	1													
4. Spouse support	−0.090	0.161*	0.636**	1												
5. Home country	−0.003	−0.390**	0.017	0.141*	1											
6. Education	0.056	0.278**	−0.013	0.115	−0.174**	1										
7. Position level	0.027	−0.194**	0.005	0.102	0.209**	−0.161*	1									
8. Prior assignment	−0.029	0.138*	−0.057	−0.056	−0.032	0.083	−0.107	1								
9. Time host country	0.028	0.219**	−0.036	0.223**	−0.058	0.108	−0.028	0.037	1							
10. Local language	0.052	0.103	−0.047	−0.014	0.077	−0.073	0.037	0.033	0.020	1						
11. CQ_MC	0.024	0.029	−0.109	0.231**	−0.007	0.035	0.301**	−0.184**	0.442**	0.181**	1					
12. CQ_COG	0.030	0.051	−0.107	0.173**	−0.096	0.008	0.240**	−0.154*	0.403**	−0.002	0.715**	1				
13. CQ_MOT	−0.010	0.110	−0.090	0.269**	−0.108	0.090	0.242**	−0.218**	0.493**	0.212**	0.863**	0.792**	1			
14. CQ_BEH	−0.064	0.047	−0.050	0.296**	0.039	0.053	0.266**	−0.191**	0.472**	0.134*	0.870**	0.721**	0.900**	1		
15. SCA	0.006	0.060	−0.006	0.575**	0.017	0.131*	0.274**	−0.154*	0.634**	0.190*	0.767**	0.676**	0.831**	0.822**	1	
16. PCA	0.098	0.135*	−0.118	0.163*	0.029	0.161*	0.193**	−0.018	0.265**	0.163*	0.419**	0.424**	0.476**	0.414**	0.500**	1
α											0.925	0.927	0.946	0.951	0.949	0.856
AVE											0.819	0.731	0.844	0.830	0.837	0.766
Mean	1.16	2.50	3.43	2.09	1.54	2.01	1.51	2.04	1.70	3.06	4.98	4.53	5.00	4.96	5.01	2.87
SD	0.37	0.95	1.09	0.81	0.50	0.71	0.50	0.64	0.73	1.18	1.54	1.42	1.50	1.47	1.52	0.92

Notes: $n = 238$. CQ_MC, meta-cognitive cultural intelligence; CQ_COG, cognitive cultural intelligence; CQ_MOT, motivational cultural intelligence; CQ_BEH, behavioural cultural intelligence; SCA, socio-cultural adjustment; PCA, psycho-cultural adjustment. Point Biserial correlations presented for binary variables; α denotes Cronbach's α; AVE is the average variance extracted; SD is the standard deviation; gender (1 = male, 2 = female); age ($1 \leqslant 30$, 2 = 30-39, 3 = 40-49, 4 = 50-59, $5 \leqslant 60$); marital status (1 = single, 2 = married); spouse support (1 = not at all, 2 = a fair amount, 3 = a great deal); education (1 = below degree, 2 = bachelor, 3 = postgraduate); position level (1 = managerial/BOD, 2 = non-managerial); prior assignment (1 = 0, 2 = 1-3, $3 \leqslant 4$); time in host country($1 \leqslant 1$ year, 2 = 1-5 years, 3 = 6-10 years, $4 \leqslant 11$ years); local language ability (1 = inadequate, 2 = adequate, 3 = good, 4 = very good, 5 = excellent); All multi-item measures employ a 1-7 scale except for PCA which uses a 1-4 scale. *,**Significant at the 5 and 1 per cent levels, respectively

Results

The estimates for examining the propositions between the various facets of cultural intelligence and CCA are presented in Table II. To examine *P1*, the full sample results clearly reveal that only the motivational dimension of CQ is statistically significant for both SCA ($\beta = 0.286$, $p < 0.05$) and PCA ($\beta = 0.447$, $p < 0.05$). The effect of the behavioural dimension of CQ on SCA was also found to be statistically significant ($\beta = 0.300$, $p < 0.01$). These results find moderate support for *P1*, particularly with regard to the motivational dimension of cultural adjustment. It appears, however, that the meta-cognitive and cognitive dimensions of cultural intelligence have little impact on aspects for CCA for the two-flow sample of Australian and Chinese expatriates.

For examining *P2* and *P3*, and the moderating impact of CDA through the use of multiple-group analysis, the differences between the estimates for the two sub-groups are examined. Overall the null hypothesis that there is no difference in the parameters between the groups is rejected ($\Delta\chi^2 = 1{,}562.3$, df = 975, $p < 0.0001$). No between-group differences were found to be statistically significant for the relationships between the various facets of cultural intelligence and either socio-cultural or PCA. In other words, the relationship between expatriate cultural intelligence and CCA appears not to be moderated by CDA (i.e. the direction of cultural flows) and so *P2* is not supported.

Noticeably, between-group statistical significant differences have been identified for the effect of position level on both SCA ($P < 0.01$; $t = -4.79$) and PCA ($P < 0.01$; $t = -3.30$). Specifically, significant negative impacts of position level on both SCA ($\beta = -0.104$) and PCA ($\beta = -0.181$) are estimated for AusChn, whereas significant positive impacts of position level are estimated for both SCA ($\beta = 0.208$) and PCA ($\beta = 0.250$) for ChnAus. These results support *P3*, and indicate that for the sample group of AusChn, managerial expatriates cross-culturally adjust better than the non-managers; while in contrast, for the sample group of ChnAus, expatriate non-managers have better CCA experiences than managerial expatriates[2]. Some other less important differences between the groups for SCA are identified for spouse support and time in the host country.

Discussion

The results uncover some interesting empirical relationships and in part confirm some previous propositions. The importance of motivational cultural intelligence has previously been identified by (e.g. Ang *et al.*, 2007; Ramalu *et al.*, 2011; Templer *et al.*, 2006; Williams, 2008) for SCA and by (e.g. Ang *et al.*, 2007; Williams, 2008) for PCA. Our findings endorse the credibility of these previous results, and underscore the importance of strong relationships between expatriates' motivational cultural intelligence and CCA. An important implication of this repeatedly same finding across diverse samples, across different methods, and across various studies is that, high motivational CQ will direct successful SCA and PCA.

The results of current study provide some support for the positioning taken by Ang *et al.* (2007), showing that higher order meta-cognitive and cognitive cultural intelligence do not automatically predict either SCA or PCA. The SEM analysis did not demonstrate significant path coefficients between the relevant variables, indicating that cognitive capabilities do not necessarily translate into effective work and non-work adjustment actions and behaviours. The result also echoes Hall's (1993) study on overseas expatriates in which cognitive training failed to significantly improve cultural adjustment, implying that knowledge itself does not guarantee appropriate behavioural outcomes in new cultural environments. Being knowledgeable

Table II.
Structural equation model estimates: cross-cultural adjustment

	Socio-cultural adjustment				Psycho-cultural adjustment			
	Full sample	AusChn	ChnAus	Group difference	Full sample	AusChn	ChnAus	Group difference
Meta-cognitive cultural intelligence	−0.015	−0.094	0.069	−0.163	−0.034	−0.179	0.053	−0.232
	(−0.19)	(−0.84)	(0.68)	(−1.08)	(−0.23)	(−0.69)	(0.32)	(−0.76)
Cognitive cultural intelligence	0.049	0.095	0.103	−0.008	0.103	0.091	0.200	−0.109
	(0.86)	(1.14)	(1.36)	(−0.002)	(0.97)	(0.46)	(1.59)	(−0.32)
Motivational cultural intelligence	0.286*	0.271*	0.259*	0.012	0.447*	0.353*	0.443*	−0.090
	(2.56)	(2.06)	(2.21)	(0.03)	(2.17)	(2.10)	(2.43)	(−0.12)
Behavioural cultural intelligence	0.300**	0.334*	0.223	0.111	0.002	0.226	−0.192	0.418
	(2.99)	(2.49)	(1.95)	(0.66)	(0.01)	(0.73)	(−0.86)	(1.07)
Age	−0.056	−0.030	−0.142	0.112	0.058	−0.053	0.117	−0.170
	(−1.66)	(−0.74)	(−1.46)	(1.82)	(0.93)	(−0.55)	(1.49)	(−1.46)
Gender	0.013	0.011	−0.041	0.052	0.144*	0.122*	0.099*	0.043
	(0.40)	(0.28)	(−0.90)	(0.85)	(2.42)	(2.58)	(2.31)	(0.48)
Spouse support	0.144**	0.268**	0.097*	0.171*	0.003	0.226*	0.029	0.197
	(4.11)	(5.84)	(2.04)	(2.40)	(0.05)	(2.33)	(0.37)	(0.22)
Education	0.061	0.078	0.049	0.029	0.069	0.002	−0.045	−0.047
	(1.84)	(1.89)	(1.07)	(0.31)	(1.12)	(0.02)	(−0.60)	(−0.80)
Local language	0.122**	0.108*	0.101*	0.007	0.027	0.103	−0.020	0.123
	(2.94)	(2.45)	(2.18)	(0.07)	(0.42)	(0.99)	(−0.26)	(0.95)
Time host	0.332**	0.256**	0.335**	−0.079*	−0.055	−0.110	0.062	−0.172
	(8.36)	(5.42)	(5.88)	(−2.12)	(−0.78)	(−1.00)	(0.68)	(−1.19)
Prior assignment	−0.016	−0.022	−0.006	−0.016	0.125*	0.057	0.148	−0.091
	(−0.49)	(−0.56)	(−0.14)	(−0.30)	(2.05)	(0.60)	(1.93)	(−0.52)
Position level	0.068	−0.104	0.208**	−0.312**	0.052	−0.181	0.250**	−0.431**
	(1.92)	*(−2.50)	(4.19)	(−4.79)	(0.78)	*(−1.96)	(3.09)	(−3.30)

Notes: Standardized β estimates presented with t-ratios in parentheses. Group difference = Australians in China (AusChn) less Chinese in Australia (ChnAus).
*,**Significant at the 5 and 1 per cent levels, respectively

about cultures may assist, yet cannot automatically ensure the application of cultural knowledge, as "awareness does not guarantee flexibility" (Earley and Peterson, 2004, p. 106). Although this finding contradicts Ramalu *et al.* (2011) where significant relationships were found between cognitive cultural intelligence and adjustment, it should be noted that Ramalu *et al.* (2011) focused on a particular group of expatriates that worked in one specific country, Malaysia. Country-specific knowledge may become more relevant for the adjustment process when the sample is confined to one particular country.

On the other hand, some of the findings of the current study differ, to some extent, from those of Ang *et al.* (2007). Ang *et al.* found that behavioural cultural intelligence was positively related to SCA as well as PCA. While our results are consistent with Ang *et al.*'s (2007) findings in that behavioural cultural intelligence relates to SCA, the present study does not support behavioural cultural intelligence being related to SCA. The following is offered as a possible explanation of contradictory findings. First, the concept of PCA is measured differently in the two studies, Ang *et al.* (2007) measure concentration, contribution, decision making, and responsibilities. Second, sample variability is distinct, Ang *et al.*'s (2007) sampled undergraduate students and short-term expatriates from several different countries. Finally, the studies had different foci Ang *et al.*'s (2007) purpose was to cross-validate the cultural intelligence scale.

The asymmetry property of cultural distance in the propositions is not supported for the cultural intelligence and CCA relationships. This finding seems to suggest that, for Chinese expatriates who live and work in Australia, Australian culture (less authoritarian cultures) could be as difficult to adjust to as Chinese culture (more authoritarian cultures) for AusChn. ChnAus face many of the same hurdles as AusChn. More generally the finding suggests, business expatriates from country A assigned to country B need to possess the same degree of cultural intelligence to bridge the cultural distance gap as those transferred from country B to country A. That is, the impact of cultural distance is not contingent on the direction of the international assignment. Therefore, higher levels of cultural intelligence are needed when adjusting to new cultures irrespective of the cultural characteristics of home and host environments.

The rejection of the asymmetric moderation effect calls into question previous propositions attesting to the moderation effects of cultural distance on the CQ and adjustment relationships, and challenges the geographic scope limitations of the CDA model in testing its cross-cultural equivalence. However, the interpretation of this result should be treated with caution as it is based on the investigation of a single two-way flow sample of business expatriates in Australia and China only, and more research is needed to test the validity of these findings. Until more research is conducted, the findings should be revisited and qualified in terms of the direction of the cultural flows of international assignment.

Importantly, the findings indicate the existence of a significant moderation effect of cultural flows on the relationships between organizational position level and CCA. The position level was significant for CCA for both groups, and there was a major moderation effect of CDA on the relationships between the position level and CCA (including both SCA and PCA). The results suggest that AusChn managerial expatriates have better CCA than the expatriates in non-managerial roles; in contrast, ChnAus expatriate non-managers have better CCA experiences than managerial expatriates both psycho-culturally and socio-culturally.

No previous cross-cultural research appears to have explored and reported on this possible interaction of cultural flows on organizational position level and CCA.

More generally, the results imply that higher positioned individuals, when sent from less authoritarian countries to more authoritarian countries, are more ready for the adjustment process (compared to lower positioned expatriates); and that the CCA processes for higher positioned individuals, when sent from authoritarian countries to less authoritarian countries are more difficult (compared to lower positioned expatriates).

Speculative explanations for this thought provoking result can be found in power distance theory (Hofstede, 2001) and managerial discretion theory (Hambrick and Finkelstein, 1987). According to the power distance theory, people in cultures dominated by high-power distance cultural characteristics tend to accept centralized power and depend heavily on superiors for structure and direction. Meanwhile, in low-power distance countries, people generally do not tolerate highly centralized power, and they expect to be consulted in organizational decision making, and social structures are more loosely weaved in low-power distance countries (Hofstede, 2001).

Australia shows significantly different cultural characteristics compared with China in Hofstede's five dimensional cultural model. For example, Australia scores 36 (below average) on power distance whereas China has a considerably larger power distance index, 80 (high above average). This means there are larger disparities between expatriate managers and technical expatriates, deeper lines separating social classes which limit interaction between classes and movement from one socio-economic class to another, and greater centralization of power and authority in the high-power distance countries, China (Hofstede, 2001). There is a clear line between superiors and subordinates, and authoritative decision-making and leadership style is expected in China (Adler, 1997). In contrast, as noted by Hutchings (2005), Australia shows apparent characteristics as a low-power distance country, whose society demonstrates fewer disparities, less centralization of power and authority, and more equalitarianism between managers and non-managerial workers.

Further, drawn from the managerial discretion theory, in high-power distance countries, managerial positions are more likely to be given greater discretion which allows influential managerial procedures, and consent in the face of executive actions, and are less likely to question decision makers or the basis upon which actions are taken; while in low-power distance countries, leaders are less patronizing and less as empowered decision makers, and radical strategic actions are more liable to come under scrutiny (Crossland and Hambrick, 2011). Using this basis of power distance theory and managerial discretion theory, the interaction between position levels and cultural flows is further detailed:

(1) *Managers: low- to high-power distance cultures.* When a manager (from a low-power distance country, e.g. Australia) who has traditionally been exposed to and practices participative decision-making leadership is assigned to a high-power distance environment (e.g. China), the manager will expect to receive the delegated power and authority necessary to undertake the new role more easily, due to the deeply embedded authoritative leadership style in high-power distance cultures. That is, greater latitude of managerial discretion is easily available to managers from low- to high-power distance cultures, which greatly assist their cultural adjustment, especially work adjustment in managerial roles. Necessary power, status, and authority are more easily delegated to managerial-level individuals, and greater levels of managerial discretion available in high-power distance countries greatly benefit management practice and status recognition (Brewster *et al.*, 1993;

Hambrick and Finkelstein, 1987), and thus facilitate CCA of this direction. Greater decision-making authority available to managers allows the environment setting and work roles to adapt to expatriate managers rather than adapting themselves to the work situation, and it certainly contributes to adjustment.

(2) *Managers: high- to low-power distance cultures.* Conversely, when a manager (from a high-power distance country, e.g. China) who has been long accustomed to authoritative decision-making and leadership style is sent to a low-power distance environment (e.g. Australia) that does not tolerate highly centralized power, the manager's authority and status may be easily challenged in the less authoritarian and more egalitarian low-power distance setting. The clear line between superiors and subordinates that the manager has been used to in high-power distance cultures might become vague and even unacceptable. Therefore, expatriate managers assigned from high- to low-power distance countries face additional adjustment difficulties associated with less availability of managerial discretion because the latitude of managerial action is restricted to managers in low-power distance cultures, as compared to the reverse direction of cultural flows.

(3) *Non-managers: low- to high-power distance cultures*. Power distance theory (Hofstede, 1980) also provides insights into the regulation effects of CDA on non-managerial expatriates' adjustment. Non-managers from low-power distance countries (e.g. Australia) being sent to work in a more authoritative, sometimes highly centralized power environment (e.g. China), indeed, come across larger disparities between superiors and subordinates in the high-power distance environment. For example, in some high-power distance countries, authoritative leadership style does not allow individuals to make any organizational decisions without the manger's input (Adler, 1997). Therefore, more preparation programmes are needed to help non-managerial expatriates from low- to high-power distance cultures tolerate highly centralized power and to face the challenges of at least expecting to be consulted in decision making.

(4) *Non-managers: high- to low-power distance cultures*. In contrast, when non-managers from a high-power distance country (e.g. China) are sent to work in a more liberal environment (e.g. Australia), their self-efficacy level is more likely to be enhanced through easier interaction between superiors and subordinates. This is because low-power distance cultures put more value on egalitarianism, where individual worth and freedom counts more (Hofstede, 2001; Trompenaars and Hampden-Turner, 1997; Adler, 2002). Non-managerial expatriates, when carrying out day-to-day technical, functional, or operative jobs, face considerably fewer disparities and less centralization of power, between managers and non-managerial workers. Therefore, non-managers from low- to high-power distance cultures encounter less adjustment obstacles than the other way round. Again, greater individual worth and freedom available to non-managers and fewer disparities allows the environment setting and work roles to adapt to non-managerial expatriates rather than adapting themselves to the work situation, and this certainly contributes to the adjustment process.

Therefore, the findings on the impact of position level on adjustment in current study can be summarized such that, managers usually enjoy higher power in a high-power distance cultural context than in a low-power context, thus, they face greater power loss moving from high- to low-power distance cultures than moving from low- to

high-power distance cultures. Thus, the former situation results in worse adjustment than the latter situation. Non-managers usually enjoy more autonomy in a low-power distance cultural context than in a high-power context; thus, they come upon greater autonomy loss moving from low- to high-power distance countries than moving from high- to low-power distance countries. Thus, the former situation results in worse adjustment than the latter situation.

Although more rigorous replications of these results in various contexts are needed, these findings have important implications for both academia and practices of expatriate staffing and training decisions. The findings of the current study starts to question the assumption that many models of CCA apply equally well to all expatriates in all circumstances, ignorant of factors that expatriates carry with them to their overseas assignments that moderate some of the proposed relationships. Indeed, the expatriates' CCA process and the type and level of stress that expatriates would encounter, vary with factors such as changing cultural flows, cultural distance, hierarchical rankings, position status, and differences in the nature of work.

Limitations and implications for future study

In summary, our results suggest the possible existence of some important relations for explaining expatriate CCA. We have offered some tentative theoretical explanations for the emergence of these findings. Certain limitations, however, should be taken into consideration when interpreting the findings of the study, and these limitations specified below provide avenues for future research.

A larger sample size may identify more significant asymmetry results if time and resources allow. The smallness of the sample sizes implies that the statistical tests may lack sufficient power to identify appropriate parameter differences between the groups. The findings of the current study suggested important implications of power distance theory as a strong theoretical explanation for the test results, and cultural distance is asymmetric, depending on the direction of cultural flow and the position status of the expatriate (i.e. manager or non-manager expatriates). This interesting interaction between CDA, position levels and adjustment can be followed up with empirical studies to test the relationships in widely differing cultural contexts with larger sample sizes. This compels further study with a greater focus on measuring power distance and examining its effect on cultural intelligence and CCA in broader contexts. The sample groups and the host countries could be expanded beyond Australia and China. By including participants from many countries adjusting to many new cultures, the test results can be revisited and a fuller picture would emerge of the interaction of individual differences and CCA. The findings will be interesting and there is value in pursuing them.

A number of methodological limitations also possibly impact of the veracity of the results. Even though we attempted to mitigate the effects of common-method bias, the impact of such bias cannot be totally ruled out for our findings. A number of negatively worded items were excluded from the employed measures to improve the empirical fit of the estimated models. The relative poor performance of these items may cast some doubt on the validity of the remaining items. A number of the variables in the estimated models have high pairwise correlations (see Table I) which may have some implications for the precision of structural equation estimates. Investigations into assessing a second-order model for CQ to reduce the impact of multicollinearity, indicate that the presented results appear to be relatively robust. In any event the consequences of high multicollinearity cannot be totally ruled out and results need to be interpreted with this caveat.

It is acknowledged that concerns might exist in that there are other relevant micro-, meso-, and macro-level factors that are important in addressing the original research question, for example, firm-level cultural intelligence is also an important set of meso-level factors affecting expatriate adjustment (e.g. Chen *et al.*, 2010). Future research should include these potentially other important factors to present a more comprehensive analysis of the issue under investigation.

The rejection of the symmetric moderation challenges the geographic scope limitations of previous cultural distance models in testing their cross-cultural equivalence. Finding a significant moderation effect of CDA on the relationships between individual differences and CCA is a potentially important contribution to the body of knowledge in the cross-cultural management and international human resource management fields.

Since this is the first attempt to integrate the central relational constructs of the macro-level cultural distance, meso-level organizational position status, and micro-level individual cultural intelligence on the CCA in one comprehensive model, it is expected that this research would serve as a valuable reference source for similar types of future research. While a number of prior studies postulated that larger cultural distance will increase adjustment difficulties, this study takes the initiative to investigate the cultural distance impact on individual differences and adjustment relationships empirically in a comparative context involving Australia, a developed country, and China, a developing country.

This research is not only of value to Australian expatriates and Chinese expatriates working in China and Australia, but also for all expatriate managers and non-managers who wish to gain insights into the expatriation process on reciprocal transfers in high- or low-power distance countries all over the world. The results are also of interest to academics, researchers, overseas students in Australian and Chinese institutions, business management, and human resource practitioners for preparing and selecting expatiates.

A significant dimension of expatriate development derived from this study would be to focus on the involvement of CDA (i.e. direction of cultural flows in expatriation) that has strong influence on the relationships between expatriate's position levels and their SCA and PCA. This should motivate HR management to explore ways and means to differentiate criteria set for expatriate candidates of different managerial or technical roles overseas. Additional attention should be given to the pre-departure training for expatriate managers assigned from high- to low-power distance countries, as they face added adjustment difficulties due to less availability or restriction of managerial discretion in low-power distance cultures. The same applies to non-managers, assigned from low-power distance countries to work in a more authoritative, sometimes highly centralized power environment, who are likely to face larger disparities between superiors and subordinates in the high-power distance setting. More preparation programmes, for example, training programmes aiming for enhancing awareness of the social structures in the target cultures, more extensive local language skill training, and continuous in-country support for the expatriate family, are needed to help non-managerial expatriates assigned from this direction to tolerate highly centralized power and to face the challenge of at least expecting to be consulted in decision making and authoritative leadership style. There is empirical evidence that expatriate preparation is correlated with the success of the overseas assignment (see Black and Mendenhall, 1990).

More importantly, insights from the propositions developed in this research could also be incorporated into expatriate training decisions and existing expatriate development programmes. Higher levels of CQ of individuals indicate better socio-cultural and PCA; hence, recognizing the importance of CQ for their business expatriates to overcome cultural distance on two-way flow transfers should stimulate many MNCs, MNEs, and MNOs that do not offer any CQ training for their expatriates at the moment, to contemplate that such training and preparation are crucial for successful expatriates' adjustment.

It is suggested that, first, CQ should be accounted over emotional and social intelligence as one of the crucial pre-departure preparation elements. Second, individuals high on CQ_MOT may catch up on other aspects of cross-cultural capabilities more easily and quickly and, therefore, deserve more attention when it comes to prioritizing and optimizing the preparation and training programmes. Third, training programmes should focus primarily on building up CQ (especially onmotivational, and behavioural capabilities) for individuals to adjust their existingcognition, motivation, and actions according to different cultural distances. Fourth, for expatriates who are likely to experience higher levels of CCA difficulties caused by the destination environment, the direction of cultural flows of the international assignment should require more extensive pre-departure training in CQ and in-country support to provide the foundation for more informed adjustment and performance levels. Fifth, individual differences, cultural settings, and assignment directions intertwine in this regard and need to be identified and considered comprehensively in the design of training that would seek to enhance expatriate development capacity in overseas assignments. Last but not least, management awareness and HRD programmes should take into account differences between various expatriate groups, cultural environments, and assignment directions.

The practical contributions of this research are also extended to the career development of expatiates themselves. Individuals can benefit by having a greater understanding of themselves, including their own cultural intelligence, the effects of cultural distance, and direction of international assignments, and thus work to compensate for personal differences while on a variety of overseas assignments in new cultural environments. This will help expatriates to be prepared to take greater ownership of their careers. An international assignment is an opportunity for expatriates to build career capital, which depends considerably on the expatriate's CCA, because international assignments lead to a restructuring of career capital with overall net gains in knowing-whom, knowing-how, and knowing-why for the well-adjusted expatriate (Haslberger and Brewster, 2009). Therefore, there is a broad connection between expatriate adjustment and their career development. Successful adjustment offers career advantages.

Acknowledgements

Funding for this research was provided by International Postgraduate Research Scholarship, Charles Sturt University, Australia, and Program of Research on the Model and Mechanism of Decision-making of Sustainable Innovation Opportunity for Innovative Enterprises from National Natural Science Foundation, China (No. 71262016). The assistance of Professor Yunlong Duan and Dr Alan Fish is gratefully acknowledged. Comments from an associate editor and two anonymous reviewers are also acknowledged.

Notes

1. We point out later that even though the individual factors of CQ are highly correlated, they are measured with high degrees of reliability and convergent validity and are found to be empirically different as testified by the Fornell and Larcker (1981) discriminant validity check.
2. As a robustness check, given the high correlations between the first-order CQ factors we examined whether estimating a model with a second-order factor model for CQ and assessing its impact on PCA and SCA modifies the presented results. The treatment of CQ as a single construct in the modelling does not lead to any substantive differences in results. CQ is significant in explaining both SCA and PCA and no significant differences in these relationships exist between countries (the *t*-ratios for the differences for the impact of CQ are, SCA $t = -0.84$, PCA $t = 0.13$). The significant differences between countries for the relation between position level into SCA ($t = -5.64$) and PCA ($t = -3.79$) remain in the modified model. Given these results, the use of individual factors for CQ are more informative as they indicate which factors of CQ are important for SCA and PCA. The importance of individual CQ factors cannot be determined by an approach which examines a single CQ construct.

References

Adler, N. (1997), *International Dimensions of Organizational Behavior*, 3rd ed., SouthWestern College Publishing, Cincinnati, OH.

Adler, N. (2002), *From Boston to Beijing: Managing with a World View*, South-Western/Thomson Learning, Cincinnati, OH.

Anderzen, I. and Arnetz, B. (1999), "Psychophysiological reactions to international adjustment: results from a controlled, longitudinal study", *Psychotherapy and Psychosomatics*, Vol. 68 No. 2, pp. 67-75.

Ang, S. and Inkpen, A.C. (2008), "Cultural intelligence and offshore outsourcing success: a framework of firm-level intercultural capability", *Decision Sciences*, Vol. 39 No. 3, pp. 337-358.

Ang, S., Van Dyne, L. and Rockstuhl, T. (2015), "Cultural intelligence: origins, conceptualization, evolution and methodological diversity", in Gelfand, M., Chiu, C.Y. and Hong, Y.Y. (Eds), *Handbook of Advances in Culture and Psychology*, Vol. 5, Oxford University Press, New York, NY, pp. 273-308.

Ang, S., Van Dyne, L., Koh, C. and Ng, K.Y. (2004), "The measurement of cultural intelligence", paper presented at the Academy of Management Meeting's Symposium on Cultural Intelligence in the 21st Century, New Orleans, LA, August 23-24.

Ang, S., Van Dyne, L., Koh, C., Ng, K.Y., Templer, K.J., Tay, C. and Chandrasekar, N.A. (2007), "Cultural intelligence: its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance", *Management & Organization Review*, Vol. 3 No. 3, pp. 335-371.

Black, J.S. and Mendenhall, M. (1990), "Cross-cultural training effectiveness: a review and a theoretical framework for future research", *Academy of Management Review*, Vol. 15 No. 1, pp. 113-136.

Black, J.S. and Mendenhall, M. (1991), "The U-curve adjustment hypothesis revisited: a review and theoretical framework", *Journal of International Business Studies*, Vol. 22 No. 2, pp. 225-247.

Black, J.S. and Stephens, G.K. (1989), "The influence of the spouse on American expatriate adjustment and intent to stay in Pacific Rim overseas assignments", *Journal of Management*, Vol. 15 No. 4, pp. 529-544.

Black, J.S., Mendenhall, M. and Oddou, G. (1991), "Toward a comprehensive model of international adjustment: an integration of multiple theoretical perspectives", *Academy of Management Review*, Vol. 16 No. 2, pp. 291-317.

Brewster, C., Lundmark, A. and Holden, L. (1993), *A Different Tack: An Analysis of British and Swedish Management Styles*, Studentlitteratur, Utbildningshuset.

Brislin, R., Lonner, W.J. and Thorndike, R.M. (1973), *Cross-Cultural Research Methods*, Wiley, New York, NY.

Butterfield, E.C. (1994), "Metacognition", in Sternberg, R.J. (Ed.), *Encyclopedia of Human Intelligence*, Macmillan, Inc., New York, NY, pp. 725-732.

Byrne, B.M. (2010), *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*, 2nd ed., Routledge, New York, NY.

Caligiuri, P. and Cascio, W. (1998), "Can we send her there? Maximizing the success of Western women on global assignments", *Journal of World Business*, Vol. 33 No. 4, pp. 394-416.

Caligiuri, P., Joshi, A. and Lazarova, M.B. (1999), "Factors influencing the adjustment of women on global assignments", *International Journal of Human Resource Management*, Vol. 10, pp. 163-179.

Carson, P.P., Carson, K.D. and Roe, W. (1993), "Social power bases: a meta-analytic examination of interrelationships and outcomes", *Journal of Applied Social Psychology*, Vol. 23 No. 14, pp. 1150-1169.

Chen, G., Kirkman, B., Kim, K. and Farh, C. (2010), "When does cross-cultural motivation enhance expatriate effectiveness? A multilevel investigation of the moderating roles of subsidiary support and cultural distance", *Academy of Management Journal*, Vol. 53 No. 5, pp. 1110-1130.

Church, A.T. (2000), "Culture and personality: toward an integrated cultural trait psychology", *Journal of Personality*, Vol. 68 No. 4, pp. 651-659.

Crossland, C. and Hambrick, D.C. (2011), "Differences in managerial discretion across countries: how nation-level institutions affect the degree to which CEOs matter", *Strategic Management Journal*, Vol. 32 No. 8, pp. 797-819.

Earley, C. (2002), "Redefining interactions across cultures and organizations: moving forward with cultural intelligence", *Research in Organizational Behavior*, Vol. 24, pp. 271-299, available at: www.sciencedirect.com/science/article/pii/S0191308502240083

Earley, C. and Ang, S. (2003), *Cultural Intelligence: Individual Interactions Across Cultures*, Stanford University Press, Stanford, CA.

Earley, C. and Mosakowski, E. (2004), "Cultural intelligence", *Harvard Business Review*, Vol. 82 No. 10, pp. 139-146.

Earley, C. and Peterson, R.S. (2004), "The elusive cultural chameleon: cultural intelligence as a new approach to intercultural training for the global manager", *Academy of Management Learning & Education*, Vol. 3 No. 1, pp. 100-115.

Fornell, C. and Larcker, D.F. (1981), "Evaluating path analysis models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Forster, N. (2000), "The myth of the 'international manager'", *International Journal of Human Resource Management*, Vol. 11 No. 1, pp. 126-142.

Gelfand, M.J., Nishii, L.H. and Raver, J.L. (2006), "On the nature and importance of cultural tightness-looseness", *Journal of Applied Psychology*, Vol. 91, pp. 1225-1244.

Goldberg, D. (1972), *The Detection of Psychiatric Illness by Questionnaire*, Oxford University Press, London.

Hall, E.T. (1993), *The Anthropology of Everyday Life*, Anchor Books, New York, NY.

Hambleton, R.K. (1993), "Translating achievement tests for use in cross-national studies", *European Journal of Psychological Assessment*, Vol. 9 No. 1, pp. 57-68.

Hambrick, D.C. and Finkelstein, S. (1987), "Managerial discretion: a bridge betwen polar views of organizational outcomes", *Research in Organizational Behavior*, Vol. 9, pp. 369-406.

Harzing, A.W. (2003), "The role of culture in entry mode studies: from negligence to myopia?", in Cheng, J.L.C. and Hitt, M.A. (Eds), *Advances in International Management*, Vol. 15, Elsevier JAI, Amsterdam, pp. 75-127.

Haslberger, A. and Brewster, C. (2009), "Capital gains: expatriate adjustment and the psychological contract in international careers", *Human Resource Management*, Vol. 48 No. 3, pp. 379-397.

Hechanova, R., Beehr, T.A. and Christiansen, N.D. (2003), "Antecedents and consequences of employees' adjustment to overseas assignment: a meta-analytic review", *Applied Psychology*, Vol. 52 No. 2, pp. 213-236.

Hofstede, G. (1980), *Culture's Consequences: International Differences in Work-Related Values*, Sage, Beverly Hills, CA.

Hofstede, G. (2001), *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2nd ed., Sage, Beverly Hills, CA.

Hui, C.H. and Triandis, H.C. (1985), "Measurement in cross-cultural psychology: a review and comparison of strategies", *Journal of Cross-cultural Psychology*, Vol. 16 No. 2, pp. 131-152.

Hutchings, K. (2005), "Koalas in the land of the pandas: reviewing Australian expatriates' China preparation", *International Journal of Human Resource Management*, Vol. 16 No. 4, pp. 553-566.

Kim, K., Kirkman, B.L. and Chen, G. (2006), "Cultural intelligence and international assignment effectiveness", paper presented at the Academy of Management Annual Meeting Proceedings, Atlanta, GA.

Kogut, B. and Singh, H. (1988), "The effect of national culture on the choice of entry mode", *Journal of International Business Studies*, Vol. 19 No. 3, pp. 411-432.

Leung, K., Ang, S. and Tan, M.L. (2014), "Intercultural competence", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 1 No. 1, pp. 489-519.

McEvoy, G.M. and Parker, B. (1995), "Expatriate adjustment: causes and consequences", in Selmer, J. (Ed.), *Expatriate Management*, Quorum Books, Westport, CT, pp. 97-114.

Matsumoto, D. and Hwang, H.C. (2013), "Assessing cross-cultural competence: a review of available tests", *Journal of Cross-cultural Psychology*, Vol. 44, pp. 849-873.

Molinsky, A., Davenport, T.H., Iyer, B. and Davidson, C. (2012), "3 skills every 21st-century manager needs", *Harvard Business Review*, Vol. 90 Nos 1/2, pp. 139-143.

Nicholson, N. and Imaizumi, A. (1993), "The adjustment of Japanese expatriates living and working in Britain", *British Journal of Management*, Vol. 4 No. 2, pp. 119-134.

Podsakoff, P.M., MacKenzie, S.B., Lee, J. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Ramalu, S.A.L.S., Chuah Chin, W. and Rose, R.C. (2011), "The effects of cultural intelligence on cross-cultural adjustment and job performance amongst expatriates in Malaysia", *International Journal of Business & Social Science*, Vol. 2 No. 9, pp. 59-71.

Robie, C. and Ryan, A.M. (1996), "Structural equivalence of a measure of cross-cultural adjustment", *Educational and Psychological Measurement*, Vol. 56 No. 3, pp. 514-519.

Schwartz, S. (2006), "Value orientations: measurement, antecedents and consequences across nations", in Jowell, R., Roberts, C., Fitzgerald, R. and Eva, G. (Eds), *Measuring Attitudes Cross-Nationally – Lessons from the European Social Survey*, Sage, London, pp. 249-288.

Searle, W. and Ward, C. (1990), "The predication of psychological and sociocultural adjustment during cross-cultural transitions", *International Journal of Intercultural Relations*, Vol. 14 No. 4, pp. 449-464.

Selmer, J. (1999), "Culture shock in China? Adjustment pattern of Western expatriate business managers", *International Business Review*, Vol. 8 No. 5, pp. 515-534.

Selmer, J. (2001), "Psychological barriers to adjustment and how they affect coping strategies: Western business expatriates in China", *International Journal of Human Resource Management*, Vol. 12 No. 2, pp. 151-165.

Selmer, J. (2006), "Adjustment of business expatriates in Greater China: a strategic perspective", *International Journal of Human Resource Management*, Vol. 17 No. 6, pp. 1994-2008.

Selmer, J. (2007), "Which is easier? Adjusting to a similar or to a dissimilar culture: American business expatriates in Canada and Germany", *International Journal of Cross-Cultural Management*, Vol. 7 No. 2, pp. 185-201.

Selmer, J., Randy, K.C. and Oded, S. (2007), "Cultural distance asymmetry in expatriate adjustment", *Cross Cultural Management*, Vol. 14 No. 2, pp. 150-160.

Shenkar, O. (2001), "Cultural distance revisited: towards a more rigorous conceptualization and measurement of cultural differences", *Journal of International Business Studies*, Vol. 32 No. 3, pp. 519-535.

Søndergaard, M. (1994), "Hofstede's consequences: a study of reviews, citations and replications", *Organization Studies*, Vol. 15, pp. 447-456.

Stahelski, A.J. and Payton, C.F. (1995), "The effects of status cues on choices of social power and influences strategies", *The Journal of Social Psychology*, Vol. 135 No. 1, pp. 553-560.

Steenkamp, J.-B. and Geyskens, I. (2012), "Transaction cost economics and the roles of national culture: a test of hypotheses based on Inglehart and Hofstede", *Journal of the Academy of Marketing Science*, Vol. 40 No. 2, pp. 252-270.

Steenkamp, J.B.E.M. (2001), "The role of national culture in international marketing research", *International Marketing Review*, Vol. 18 No. 1, pp. 30-44.

Tay, C., Westman, M. and Chia, A. (2008), "Antecedents and consequences of cultural intelligence among short-term business travelers", in Ang, S. and Dyne, L.V. (Eds), *Handbook on Cultural Intelligence: Theory, Measurement and Applications*, M.E. Sharpe, Armonk, NY, pp. 126-144.

Templer, K.J., Tay, C. and Chandrasekar, N.A. (2006), "Motivational cultural intelligence, realistic job preview, realistic living conditions preview, and cross-cultural adjustment", *Group & Organization Management*, Vol. 31 No. 1, pp. 154-173.

Tett, R.P. and Burnett, D.D. (2003), "A personality trait-based interactionist model of job performance", *Journal of Applied Psychology*, Vol. 88 No. 3, pp. 500-517.

Triandis, H. (1989), "The self and social behavior in differing cultural contexts", *Psychological Review*, Vol. 96 No. 3, pp. 506-520.

Trompenaars, F. and Hampden-Turner, C. (1997), *Riding the Waves of Culture: Understanding Cultural Diversity in Business*, 2nd ed., Nicholas Brealey, London.

Trompenaars, F. and Woolliams, P. (2003), "A new framework for managing change across cultures", *Journal of Change Management*, Vol. 3 No. 4, 361pp.

Van Oudenhoven, J.P. (2001), "Do organizations reflect national cultures? A 10-nation study", *International Journal of Intercultural Relations*, Vol. 25, pp. 89-107.

Ward, C. and Kennedy, A. (1993), "Acculturation and cross-cultural adaptation of British residents in Hong Kong", *Journal of Social Psychology*, Vol. 133 No. 3, pp. 395-397.

Ward, C. and Kennedy, A. (1996), "Crossing cultures: the relationship between psychological and socio-cultural dimensions of cross-cultural adjustment", in Pandey, J., Sinha, D. and Bhawuk, D.P.S. (Eds), *Asian Contributions to Cross-Cultural Psychology*, Sage Publications India Pyt Ltd, New Delhi, pp. 289-307.

Williams, M.E. (2008), *Individual Differences and Cross-Cultural Adaptation: A Study of Cultural Intelligence, Psychological Adjustment, and Sociocultural Adjustment*, TUI University, CA.

Wood, P.J. and Schwass, M. (1993), "Cultural safety: a framework for changing attitudes", *Nursing Praxis in New Zealand*, Vol. 8 No. 1, pp. 4-15.

Zhang, Y. (2013), "Expatriate development for cross-cultural adjustment: effects of cultural distance and cultural intelligence", *Human Resource Development Review*, Vol. 12 No. 2, pp. 176-198.

Further reading

Bandura, A. (1977), *Social Learning Theory*, Prentice Hall, Englewood Cliffs, NJ.

Bandura, A. (2002), "Social cognitive theory in cultural context", *Applied Psychology: An International Review*, Vol. 51 No. 2, pp. 269-290.

Berry, J.W. (1999), "Intercultural relations in plural societies", *Canadian Psychology*, Vol. 40 No. 1, pp. 12-21.

Erez, M. and Earley, P.C. (1993), *Culture, Self-Identity, and Work*, Oxford University Press, New York, NY.

Hambrick, D.C. and Abrahamson, E. (1995), "Assessing managerial discretion across industries: a multimethod approach", *Academy of Management Journal*, Vol. 38 No. 5, pp. 1427-1441.

Klein, K.J. and Kozlowski, S.W.J. (2000), "From micro to meso: critical steps in conceptualizing and conducting multilevel research", *Organizational Research Methods*, Vol. 3 No. 1, pp. 211-236.

Molinsky, A. (2007), "Cross-cultural code-switching: the psychological challenges of adapting behavior In foreign cultural interactions", *Academy of Management Review*, Vol. 32 No. 2, pp. 622-640.

Sternberg, R.J. (2004), *International Handbook of Intelligence*, Cambridge University Press, Cambridge.

Sternberg, R.J. and Detterman, D.K. (1986), *What is Intelligence? Contemporary Viewpoints on its Nature and Definition*, Ablex, Norwood, NJ.

Stryker, S. (1987), "Identity theory: developments and extensions", in Yardley, K. and Honess, T. (Eds), *Self and Identity: Psychosocial Perspectives*, Wiley, London, pp. 89-103.

Triandis, H. (1972), *The Analysis of Subjective Culture*, Wiley, New York, NY.

Wang, X. (2003), "Expatriate adjustment from a social network perspective: theoretical examination and a conceptual model", *International Journal of Cross-Cultural Management*, Vol. 2 No. 3, pp. 321-337.

Appendix. Item measures

Socio-Cultural Adjustment (SCA): adapted from Black and Stephens (1989)

Work adjustment
Specific job responsibilities
Performance standards and expectations
Supervisory responsibilities

General living adjustment
Living conditions in general
Housing conditions
Food
Shopping
Cost of Living
Entertainment/recreation facilities and opportunities
Health care facilities

Host country national interaction adjustment
Socializing with host nationals
Interacting with host nationals on a day-to-day basis

Interacting with host nationals outside of work
Speaking with host nationals

Psycho-Cultural Adjustment (PCA): adapted from Goldberg (1972)
Have you recently felt you couldn't overcome your difficulties?*
Have you recently felt capable of making decisions about things?
Have you recently been feeling unhappy and repressed?*
Have you recently felt that you are playing a useful part in things?
Have you recently been able to concentrate on what you are doing?
Have you recently lost much sleep over worry?*
Have you recently been thinking of yourself as a worthless person?*
Have you recently been reasonably happy, all things considered?
Have you recently been able to enjoy your normal day-to-day activities?
Have you recently been able to face up to your problems?
Have you recently felt constantly under strain?*
Have you recently been losing confidence in yourself?*

Cultural Intelligence (CQ): adapted from Ang *et al.* (2004, 2007)
Meta-cognitive (CQ_MOC)
I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.
I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.
I am conscious of the cultural knowledge I apply to cross-cultural interactions.
I check the accuracy of my cultural knowledge as I interact with people from different cultures.

Cognitive (CQ_COG)
I know the legal and economic systems of other cultures.
I know the rules (e.g. vocabulary, grammar) of other languages.
I know the cultural values and religious beliefs of other cultures.
I know the marriage systems of other cultures.
I know the arts and crafts of other cultures.
I know the rules for expressing non-verbal behaviours in other cultures.

Motivational (CQ_MOT)
I enjoy interacting with people from different cultures.
I am confident that I can socialize with locals in a culture that is unfamiliar to me.*
I am sure I can deal with the stresses of adjusting to a culture that is new to me.
I enjoy living in cultures that are unfamiliar to me.
I am confident that I can get accustomed to the shopping conditions in a different culture.

Behavioral (CQ_BEH)
I change my verbal behaviour (e.g. accent, tone) when a cross-cultural interaction requires it.
I use pause and silence differently to suit different cross-cultural situations.
I vary the rate of my speaking when a cross-cultural situation requires it.
I change my non-verbal behaviour when a cross-cultural situation requires it.
I alter my facial expressions when a cross-cultural interaction requires it.

*denotes a deleted item

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