Understanding Cross-Cultural Differences between Malaysian Malays and Australian Caucasians in Emotion Recognition

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Abstract
Various studies have proven that culture does influence the way human's process emotion. This study aims to investigate the difference among Malaysian Malays and Australian Caucasians in emotion recognition. There were 38 participants in this study (19 Malaysian Malays and 19 Australian Caucasians). This study consisted of three tasks. The first was the facial emotion recognition (FER) task; the participants were asked to look at pictures of Caucasians and Asians and determine their facial expressions. The second task involved identifying whether the point light display (PLDs) clips shown depicted a human movement or not (biological motion recognition; BMR). In the last task the participants were required to identify the emotional state of the PLD figures (emotion recognition; ER). There were no significant differences found between the two groups of participants for all three tasks. Malaysian Malays used significantly more cognitive reappraisal techniques for emotion regulation as compared to Australian Caucasians.

Keywords: emotion recognition, facial emotion recognition, cross-cultural differences

Introduction

The study of emotions across different cultures has a long history and has made a significant contribution to the field of psychology (Matsumoto & Hwang, 2012). Research has demonstrated that emotion is both universal and culture specific and that cultural and biological determinants can be evaluated by understanding the processing of emotion (Matsumoto & Hwang, 2012). Emotional experience (Mesquita, 2003), emotional meanings (Shweder, Haidt, Horton & Joseph, 2008) and emotional appraisals (Mesquita & Walker, 2003) have been found to vary greatly across cultures. Despite these advances in the current understanding of the relationship between culture and emotion, there continues to be disagreements regarding universality versus cultural-specificity and the contributions of biology and culture (Matsumoto & Hwang, 2012).

For instance, Beaupre and Hess (2009) found that French Canadians recognised sadness better than Chinese and Africans while they also recognised shame better than the Africans. Elfenbien, Beaupre, Levesque and Hess (2007) studied facial recognition among participants from Quebec and Gabon. They found that there were cultural differences especially in emotions that are used for social interactions like anger, happiness, shame, sadness, serenity and contempt. This difference holds true for Caucasians and non-Caucasians which were discovered by Shimmack (1996) as the Caucasians in his study were much accurate in identifying the emotions as compared to the non-Caucasians. These researches show that, there are differences in facial emotion expression and recognition across cultures.

Biological motion (BM) processing plays an important role in adaptive social behaviour (Pavlova, 2011). Humans give cues on their emotions through BM. The use of BM has potential for the cross-cultural study of priming reactions to emotional stimuli as the task requires little verbal interaction and the context is culturally-neutral. Cross-cultural studies using BM have concluded that perception of BM is spontaneous and universal (Pica, Jackson, Blake, & Troje, 2011). However, there are research that yield conflicting findings especially in studies using the special needs or populations with disabilities and when comparing gender (Arrighi, Cartocci & Burr, 2011; Alaerts, Nackeaerts, Meyns, Swinnen & Wendroth, 2011).

Hence, this study aims to investigate the cultural differences between Malaysian Malaysa and Australian Caucasians in facial emotion recognition and biological motion.

Hypothesis

Four hypotheses were developed based on results of past research. They are:

1. There will be a significant difference between Malaysian Malay and Australian Caucasian participants in all three tasks (FER, BMR and ER tasks)
2. There will be a significant negative relationship between depressive symptoms and accuracy rates in all of the three tasks (FER, BMR and ER tasks)
3. The Australian Caucasian participants will score higher on the independence and individualism subscale of the SCS and INDCOL

4. The Malaysian Malays will score higher on the interdependence and collectivism subscale of the SCS and INDCOL

Methodology

Study design

This is a quasi-experimental study comparing two groups of participants from different cultures.

Participants

There were in total of 38 participants who took part in this study. Of which 19 were Malaysian Malays and the other 19 were Australian Caucasians. Participants were from the Klang Valley area in Selangor, Malaysia or Melbourne, Australia.

All participants of this study were between the ages of 18 to 60 years old. They are literate in Malay or English. Participants were excluded from the study if they had a diagnosis of substance dependence, history of psychosis, had organic brain injury, unable to understand simple spoken or written English or Malay, had a permanent physical injury/handicap, had non-corrected vision or had non-corrected hearing and if they were of mixed parentage.

Location

This study was carried out at the Behavioural Sciences Lab, Universiti Putra Malaysia and the Behavioural Lab, Monash University Clayton Campus, Australia.

Measures

There were five measures used in this study. They were:

(a) The Beck Depression Inventory (BDI)-Malay
The BDI-Malay is a 20-item, self-report tool to assess the severity of depression. In Malaysia, the BDI has been used widely and it has a high internal consistency value for all the items that ranges between 0.56 and 0.87 (Quek, Low, Razack & Loh, 2001). The test-retest reliability of the total BDI score after 12 weeks was 0.85 (Quek, Low, Razack & Loh, 2001). On the other hand, the Malay version of this tool has internal consistency values ranging from 0.71 to 0.91 (Mukhtar & Oei, 2008).

(b) WHO Quality of Life BREF Scale (WHOQOL-BREF)
The WHOQOL-BREF is a 26-item questionnaire that intends to examine the individuals' perception of their quality of life. There are four domains derived from the individual items which are (a) physical health (b) psychological (c) social relations and (d) environment. The Bahasa Malaysia version has good internal consistency values which range between .64 to .80 while the test-retest reliability ranges between .49 to .88 (Hasannah, Naing & Rahman, 2003).

(c) The Individualism-Collectivism Scale (IndCol)
The IndCol scale used in this study was developed by Singelis, Triandis, Bhawuk and Gelfand in 1995. This scale is used to identify individualism and collectivism traits in an individual. There are 32 items in this scaleThe Cronbach alpha value for the collectivism items when used with the Indonesian population is .82 while the individualism items had a Cronbach alpha value of .80.

(d) Self-Construal Scale (SCS)
The Self Construal Scale is a 30 item, self-report tool that assesses an individual's independent and interdependent self-construals. The items are equally divided into two subscales which are the independent and interdependent subscales. The internal consistency values for both subscales were between .70 and .74.

(e) The Emotion Regulation Scale (ERQ)
The ERQ is a 10-item questionnaire that was developed by Gross and John (2003) to examine an individuals' use of two emotion regulation strategies which are cognitive reappraisal and expressive suppression. The internal consistency values obtained for both subscales ranged between .48 and .85. The internal correlation coefficient values for items on the cognitive reappraisal subscale ranges from .41 to .82 and for the expressive suppression subscale from .51 to .76.

Stimuli

All three tasks were developed and presented using the E-Prime software (Psychological Software Tools).

(a) The Facial Emotion Recognition (FER) Task
This task involved participants identifying the emotion on various faces as used in previous research. The pictures from the Montreal Set of Facial Displays of Emotion was adapted and used in this task. Participants were shown two sets of pictures; Caucasian and Asian faces, in random order. Individuals in the pictures were expressing one of seven different emotions (neutral, happy, sad, angry, fear, disgust and shame). The participants were required to correctly identify the emotion that is expressed by the individual in the picture.

(b) The Biological Motion (BM) Task
The procedure was developed based on Nackaerts and collegues (2012) and Alaerts and colleagues (2011) studies. Participants watched a series of short movies (duration of 3 s), representing point light displays (PLDs) of white dots against a black background. Participants completed two testing sessions; one consisting of the biological motion recognition (BMR) task with a 2-choice control-test; and the other consisting of the emotion recognition (ER) task and a 4-choice control-test. All of the PLD-movies were presented on a computer. Participants sat at a viewing distance of approximately 50 cm from the screen. Standardized instructions were provided verbally and on the monitor at the start of each test. A set of practice trials was presented only for the BMR task.

For the BMR task, participants were presented with a series of PLDs that either depicted a person's movements ('biological motion') or did not depict a person's movements ('scrambled'). Participants had to indicate as fast and accurate as possible whether the presented PLDs represented ''a person'' or ''not a person''. The response options (person, no person) will be indicated on the respective response buttons. For the ER task, participants were presented with a series of 144 movie trials. Each trial will consist of a 'prime' PLD, followed by a 'target' PLD. Participants were asked to indicate as fast as possible whether the presented point light figure in the 'target' movie performed the displayed action in a different 'emotional state' compared to the point light figure in the 'prime' movie. The emotional state of the target could be indicated as (i) happier, (ii) sadder, (iii) angrier, or (iv)not different, from the prime. The four response options (happier, sadder, angrier, no difference) will be indicated on the respective response buttons on the keyboard.

Procedure

Data collection in Malaysia was carried out by the Malaysian researcher while Australian data was collected by a research assistant from Monash University Clayton Campus, Australia.

Volunteered participants were first given the consent form to complete. It indicates their consent in taking part in this study and to indicate that they understand that information that they provide will be kept confidential. Next, they were given the Beck Depression Inventory (BDI), the Self Construal Scale (SCS), the Individualism-Collectivism scale (IndCol), the emotion Regulation Questionnaire (ERQ) and the WHO Quality of Life Scale (WHO-QOL) to complete. Secondly they will be required to complete the facial recognition task (FER). Then they complete the biological motion recognition task (BMR) and lastly, the emotion recognition task (ER).

Results

Hypothesis 1

The relationship between each of the three tasks (FER, BM and ER) and depressive symptoms was investigated using Spearman's Rho correlation coefficient. Preliminary analyses were carried out to ensure that there was no violation to the assumption of normality, linearity and homoscedasticity for each variable. There was no significant relationship between each of the tasks with depressive symptoms.

Table 1. Correlation between BDI and tasks

Variable	BDI	FER	BM	ER
BDI		.216	-.002	.488
FER			-.099	-.014
BM				-.191
ER				

Hypothesis 2

The differences between Australians and Malaysians in each of the three tasks were analyzed using the independent samples t-test and the Mann-Whitney U test. The analysis showed that there were no significant differences between Australians and Malaysians in all three tasks.

Table 2. Mann-Whitney U test comparing Australians and Malaysians in the BM task

Variable	Mean Rank		
	Australians	Malaysians	z(37)
BM	16.97	20.92	-1.11

Table 3. Independent Sample t-test comparing Australians and Malaysians in the FER and ER task

Variable	Mean Scores		
	Australians	Malaysians	t(36)
FER	27.05	29.84	-1.328
ER	62.47	64.78	-.847

Hypothesis 3 & 4

The t- test and Mann-Whitney U test was used to investigate if there were cultural differences between Australians and Malaysians in terms of self-construals and cultural orientation.

The t-test analysis showed that there was a difference between Australians and Malaysians in terms of the interdependence self-construals, t(36)=-4.514, p=.001. Malaysians (M=81.47, SD=7.68) had higher interdependence scores than Australians (M=68.68, SD=9.67). Hence, Malaysians were more interdependent than Australians.

For cultural orientation, the t-test showed that there were differences between Australians and Malaysians in both subscales of the IndCol, t(36)=-3.504, p=.001 (collectivism) and t(36)=-2.927, p=.006 (individualism). Malaysians (individualism-M=70.00, SD=8.72; collectivism-M=74.10, SD=8.32) had higher individualism and collectivism scores than Australians (individualism-M=62.05, SD=7.99; collectivism-M=65.53, SD=8.31). Hence, Malaysians have more individualistic and collectivistic orientation than Australians.

Table 4. Independent t-test comparing Australians and Malaysians

Variable	Mean Scores		
	Australians	Malaysians	t(38)
Interdependence	68.68	81.47	-4.514**
Collectivism	65.52	74.10	-3.504**
Individualism	62.05	70.00	-2.927**

Note. **p<0.01

Table 5. Mann-Whitney U test comparing Australians and Malaysians

Variable	Mean Rank		
	Australians	Malaysians	z(38)
Independence	17.26	21.74	-1.243**

Note. **p<0.01

Further Findings

The t-test also showed that there were differences between Australians and Malaysians in the environment subscale of the WHOQOL-BREF, t(36)=5.224, p=.001. Australians (M=43.00, SD=3.73) scored higher than Malaysians (M=28.68, SD=2.40). Therefore, Australians had better quality of life in terms of their environment than Malaysians.

Similarly, the Mann-Whitney U test showed that there were differences between Australians and Malaysians for the WHOQOL overall QOL scores. Australians (Mean Rank=23.61) scored higher than Malaysians (Mean Rank=15.39). Hence, Australians perceive that they have a better overall quality of life than Malaysians.

On the ERQ, the t-test showed that there were differences between Malaysians and Australians in the reappraisal subscale. Malaysians (M=31.21,SD=5.59) scored higher than the Australians (M=21.21,SD=9.99). Therefore, Malaysians were more likely to use cognitive reappraisal strategies than Australians.

The Mann-Whitney U test showed that Malaysians (Mean Rank= 24.21) had higher BDI scores than Australians (Mean Rank=14.79), U=91.00, p=.009. Malaysians experienced more depressive symptoms than Australians.

Table 6. Mann-Whitney U test comparing Australians and Malaysians

Variable	Mean Rank		
	Australians	Malaysians	z(38)
Overall QOL	15.39	23.61	-2.34*
BDI	24.21	14.79	-2.62**

Note. *p<0.05
**p<0.01

Table 7. Independent Sample t-test comparing Australians and Malaysians

Variable	Mean Scores		
	Australians	Malaysians	t(38)
Environment	34.00	28.68	5.224**
Reppraisal	21.21	31.21	-3.807**

Note. **p<0.01

Conclusion

The results show that Malaysian Malays are not only an interdependent and collectivistic culture but also independent and individualistic one. The Australian Caucasians have more depressive symptoms while the Malaysian Malays have better overall quality of life despite having poor environment factor. Also, the results

showed that more Malaysian Malays use cognitive reappraisals as a method for emotion regulation. No significant difference was found between Australian Caucasians and Malaysian Malays in all three tasks and between the three tasks and depressive symptoms.

What was found in terms of the tasks proves that the ability to perceive emotion from faces and body movements are similar across the two cultures. This concurs with previous studies and the claim by Darwin stating that expressions are universal (Darwin 1872; Pica, Jackson, Blake, & Troje, 2011).

This, in turn also supports the theory, Biocultural Model of Emotion, by Matsumoto & Hwang (2012). They developed this model to explain the three dimensions of emotions and one of the dimensions is priming reactions. Priming reactions are spontaneous emotional reactions to stimuli which include expressive behaviour and changes in physiology. This domain is mainly influenced by biology and has very little or no influence of culture.

Cognitive reappraisal is a method in which people reevaluate their thoughts and change it which then affects their feelings. According to John & Gross (2004), those using cognitive reappraisal has better well-being. This can explain the results of the Malaysia sample which has higher overall quality of life scores.

In conjunction with that, the higher scores of the Malaysian Malays in the reappraisal domain may be explained by their personality type. The sample collected may be dominated with individuals with a predisposition for using cognitive reappraisals instead of emotion suppression. Personality may have come into play – collectivism and individualism[1,2]

Globalization is a huge phenomenon in the modern world. According to Hong and Chiu (2001), as culture is an entity that is dynamic and can change over time. As such, the influence of globalization can cause a shift in the cultural dimensions. Individuals form one culture can absorb values and thinking patterns from other cultures which then leads to a change in that culture. Perhaps this is what is happening in the Malaysian Malay culture. There is a slow shift in dimension which can explain the equally higher scores of both individualism and collectivism scores. Hong and Chiu (2001) also explained that although overall the culture may be oriented towards one cultural dimension, there may be within culture variations that may explain this as well.

Strengths and Limitations

One of the strengths of this study is the dispersed occupational demographics of the Australian Caucasian participants. Not only that, the stimuli used in this study have been used in previous studies hence it is a well-established stimuli.

On the other hand, the limitations of this study are the low sample size and the high numbers of students in the Malaysian sample. The low sample size may have contributed to the non-significant results due to low power.

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