

Cross-cultural Recognition of Posed Facial Expressions of Emotion

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The research examined the effects of subject and model culture/ethnicity on the recognition of posed facial expressions of emotion. Twenty-seven Maori and 27 Pakeha subjects were presented with photographs of Maori and Pakeha stimulus persons expressing anger, contempt, disgust, fear, happiness, sadness and surprise. Subjects were then asked to identify each of the expressions from a list of 11 emotional labels. Binomial tests confirmed above chance accuracy for the recognition of all emotions except fear. A 2 x 2 analysis of variance of overall recognition scores revealed main effects for both model and subject ethnicity. The emotional expressions of Maori models were more accurately recognized than those of Pakeha models; Pakeha subjects, however, were more accurate than Maori subjects in their identification of emotions. There was no significant interaction effect.

Within the domain of intercultural communication a primary area of research has been the cross-cultural recognition of facial expression of emotion. Emphasis has been placed on universal features of emotional expression which have been examined through analysis of the recognition rates of basic emotions by individuals from different cultural backgrounds. The most prevalent approach has been to present subjects with posed stimulus pictures and to require identification of the emotions through a matching technique. The majority of investigations have used stimuli with Caucasian models (e.g., Ekman, Friesen & Tomkins, 1971; Izard, 1971) and subjects from diverse ethnic and cultural backgrounds (e.g., Argentina, Brazil, Chile, Japan, Greece, Africa). In this context researchers have compared the accuracy of emotion-matching with chance recognition rates. Using this criterion, research has demonstrated that the primary emotions of anger, disgust, contempt, surprise, sadness, fear and happiness are accurately recognized across cultures.

While studies have most frequently made use of standardized photographs posed by Caucasian models, some researchers have varied the ethnicity of stimulus persons in the investigation of basic emotions. Ekman and Friesen (1971) examined recognition of emotional expressions in subjects from New Guinea and the United States. Although the data collection techniques differed somewhat in the two

settings, above chance recognition rates were attained for both New Guinean and American subjects in response to unfamiliar stimulus persons. Boucher and Carlson (1980) implemented a cross-over design in their study of Americans and Temuan aboriginals from Malaysia and replicated this pattern.

With emphasis specifically on above chance accuracy in the appraisal of posed facial expression of emotion, investigators, for the most part, have not adequately addressed the issue of cross-cultural variation in recognition responses. Cross-cultural research on nonverbal communication suggests that there are significant differences in nonverbal communication styles. Kilbride and Yarczower (1983) summarize the issue: "To conclude that emotional expression, more specifically facial expressions, of one cultural group are recognized by members of a different culture requires that the level of agreement in judgment be significantly greater than would be expected by chance. The demonstration that the agreement is significantly greater than would be expected by chance factors, however, does not suggest, by itself, that specific cultural effects are absent in these very same judgments" (p.40). A similar conclusion was reached by Russell (1991) in his recent review of culture and the categorization of emotion.

The suggestion of culture-specific influences on the recognition of emotion raises a fundamental question for researchers; that is, despite overall accuracy in recognition, will responses vary according to the culture or ethnicity of the subjects and stimulus persons? Ekman and Friesen's neuro-cul-

tural theory of emotion, which emphasizes the effects of both innate biological determinants and culturally conditioned factors on the expression and recognition of emotion, would suggest that this is so, as would intercultural communication research on other forms of nonverbal behaviours (e.g., LaFrance & Mayo, 1976). Izard's (1971) study, for example, revealed cross-cultural differences in recognition of emotional expression; accuracy rates of African subjects were lower than accuracy rates of European subjects when responding to Caucasian models. Kilbride and Yarczower's (1983) reanalysis of the Boucher and Carlson data confirmed that recognition rates were significantly higher when subjects and stimulus persons were from the same cultural group. In their own study with subjects from Zambia and the United States results indicated that although recognition accuracy was not significantly different across cultures, certainty about appraisals was enhanced by a subject-model ethnic match (Kilbride & Yarczower, 1980). More recently, Wolfgang and Cohen (1988) have found evidence of increased recognition accuracy through ethnic matching in their research with Canadians, Latin Americans, Ethiopians and Israelis.

The study described here was designed to assess the effects of subject and model ethnicity/culture on the recognition of facial expression of emotion. In line with previous cross-cultural findings, it was hypothesized that ethnic/cultural matching would facilitate the accurate recognition of emotional expression. More specifically, it was expected that subjects would demonstrate more accurate recognition of facial expressions of emotion posed by stimulus persons from their own ethnic group.

Method

Twenty-seven Maori and 27 Pakeha men and women participated in the study. Participants ranged in age from 15-51 years and were attending work training programmes in Christchurch. Subjects were administered an emotion recognition test consisting of 8 photographs of one Maori ($N=23$) or one Pakeha ($N=31$) stimulus person displaying expressions of: anger, contempt, disgust, fear, happiness, sadness, surprise, and a neutral pose. Subjects were asked to identify each of the eight expressions by selecting their responses from a list of 11 emotional labels.

The stimulus materials were constructed with the assistance of six male models (three Maori and three Pakeha) who posed seven emotions and a neutral expression. While there is some controversy over the use of posed vs. spontaneous cues, Zuckerman and colleagues have argued that posed expressions may be generalized to

spontaneous facial behaviour based on observed similarities in encoding and decoding the two types of cues (Zuckerman, DeFrank, Hall & Rosenthal, 1976; Zuckerman, Larrance, Hall & DeFrank, 1979). Posed cues have the advantage of allowing more precise definition of emotional expression and standardization of stimulus materials.

Two criteria were used in the production of stimulus materials. First, models were required to match their own pictures with the correct emotions. The matching task was undertaken one week after the original photographic session; mismatched expressions were posed and photographed a second time or until the correct match was achieved by the model. Secondly, Ekman and Friesen's (1978) Facial Affect Coding System (FACS) was employed with each of the stimulus pictures. The FACS, which has been used in previous cross-cultural research, is based on the analysis of anatomical features of facial activity and allows a complex facial expression to be broken into its fundamental components and assessed in terms of minimal muscle actions which collectively produce a movement. A minimum criterion of 66% match of FACS defined muscle movements was required for inclusion in the study. The 66% criterion was used to allow for cross-cultural variation in emotional expression.¹ The combination of the model-matching and FACS criteria was used to establish the validity of the stimulus materials both within and across cultures.

Results

Binomial tests were undertaken to assess recognition rates. Anger ($p<.05$), contempt ($p<.001$), disgust ($p<.001$), happiness ($p<.001$), sadness ($p<.001$), surprise ($p<.001$) and the neutral expression ($p<.001$) were recognized accurately at an above chance level. The total recognition score (0-8) was subjected to a 2 (subject culture/ethnicity) \times 2 (model culture/ethnicity) analysis of variance. Results indicated that Pakeha ($M = 3.9$, $SD = 1.7$) subjects were more accurate in their judgments of emotional expressions than Maori ($M = 3.0$, $SD = 1.4$) subjects ($F(1,50) = 5.2$,

Table 1 Mean Recognition Scores for Maori and Pakeha Models

Subjects	Models	
	Maori	Pakeha
Maori		
Mean	3.9	2.4
SD	1.3	1.0
N	11	16
Pakeha		
Mean	4.4	3.5
SD	1.9	1.5
N	12	15

$p < .03$) and that Maori ($M = 4.2$, $SD = 1.6$) models were more accurately identified than Pakeha ($M = 2.9$, $SD = 1.4$) models ($F(1,50) = 9.5$, $p < .003$). The interaction effect, however, was not significant ($F < 1$).² (See Table 1).

Discussion

The data do not support the theory of cultural match; there was no evidence that either Maori or Pakeha subjects were able to judge more accurately emotional expressions posed by stimulus persons from the same ethnic group. Maori models, however, were more accurately recognized than Pakehas. The minimum 66% FACS matching criterion for stimulus materials admits the possibility that Maori models were more expressive than Pakehas. This is in accordance with Metge and Kinloch's (1978) contention that Maoris emphasize body language more and verbalizations less than Pakehas. This suggestion, however, does nothing to explain the lower recognition rates by Maori subjects. While previous exposure to these types of paper and pencil tests, subjects' educational backgrounds, language abilities and preferences, and/or cultural appropriateness of the task may have affected performance in this area, the influence of these factors remains to be tested.

The data are difficult to interpret in a theoretical context, and methodological issues might account, at least partially, for the pattern of results. A larger number of models and a within-subject factor would increase the power of the design. Despite these limitations, the more accurate decoding of Maori expressions raises an interesting question about possible cross-cultural differences in the expression of emotion. Certainly there is research to suggest the cultural influence of display rules on the expression of emotion (Scherer, 1986) as well as studies which have documented cross-cultural differences in the perceived intensity of basic emotions (Ekman et al., 1987), and in the phenomenology of emotional experience (Matsumoto, Kudoh, Scherer & Wallbott, 1988). Overall culture specific elements in the nonverbal communication of emotion, as opposed to the universality of emotional recognition, warrant further exploration, and cross-cultural differences in emotional encoding, particularly in the intensity of expression, might be pursued in future research.

Footnotes

¹The FACS analysis was done by the first author. The 66% criterion was utilized to accommodate possible cross-cultural variations, e.g., Chang cited in Argyle (1982) found differences in the facial expression of disgust

and anger by Chinese and American subjects.

²As each subject received photographs of only one stimulus person and there were only three models for each ethnic group, preliminary analyses were undertaken to compare recognition responses for the three Maori models and for the three Pakeha models. Results revealed that there was no significant effect for model; $F < 1$ for both Maori and Pakeha stimulus persons. A preliminary t-test indicated no differences in responses of male and female subjects; therefore, this factor (subject sex) was omitted in the analysis of variance.

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Book Reviews

David Cohen (Ed.) (1990)
Challenging the Therapeutic State:
Critical Perspectives on Psychiatry and the Mental
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Challenging the Therapeutic State: Critical Perspectives in Psychiatry and the Mental Health System, edited by David Cohen is yet another tome dedicated to vilifying the excesses and deficiencies of the psychiatry of yesteryear. With a few notable exceptions, the contributing authors conceptualize psychiatry and psychiatric treatment as it was 20-100 years ago. Borrowing from David Cohen's preface, psychiatry and the medical model serve to "produce intellectual confusion, iatrogenic disorders, social enfeeblement, and other difficulties" and the mentally ill are "troubled, unhappy, and poor people who break our rules, annoy us, or threaten our values and peace of mind." It is primarily from this standpoint that the contributing authors present their unbalanced treatise against psychiatry.

Highlighting a few notable chapters, R. Liefer classifies psychiatry as a mechanism for extra-legal control. In so doing he highlights injustices of commitment procedures and "pharmacological assault". His accusations are weakened by what appears to be limited understanding and frank naivete about involuntary admission and medical management laws in the United States. Similarly factual errors such as reporting that the medical model considers schizophrenia to be due to a deficiency in dopamine further weakens his case. In fact, schizophrenia is thought to be related to excesses in dopaminergic activity.

Sarbin attempts to support the claim that schizophrenics cannot be differentiated from normal con-

trols reliably on any biological or psychological marker. Not only does he review the literature selectively, but ignores evidence which has culminated in a publication subsequent to his chapter indicating that never-medicated, first break schizophrenics display hypofrontality on NMR spectroscopy (Pettigrew, et al., 1991). This finding also refutes much of what Breggin outlines in his chapter, namely that the brain damage seen in schizophrenia is secondary to neuroleptics rather than a product of the disease itself.

One particularly dangerous essay by Mark Kaplan on Aids seems to reflect the author's personal discomfort with the terms "dangerous" and "promiscuous" to describe high risk sexual behaviour associated with the transmission of HIV. The author argues that these terms are prejudicial and create false perceptions of the gay community. Frankly, it is precisely dangerous and promiscuous behaviour across all individuals not just homosexuals that increases risk of contracting HIV. In fact, the use of these terms and vigorous promotion of lifestyle change have drastically reduced the rate of transmission among homosexuals in the United States. If other afflicted groups could only hope for such a quick and effective response. It seems trivial in the face of an inevitably lethal disorder to squabble over wording.

A few important points are raised, albeit some what obscured by radical verbiage. Scull unearths the critical point that alternative treatments for the chronically mentally ill are required and that this should be reflected in mental health funding. This could hardly be argued given the number of individuals evidencing repeat visits to psychiatric emergency services and a revolving-door admission pattern. Again, hidden beneath extremist critique, Breggin underscores the need for more refined and specific psychiatric drugs—a fact that no practising psychiatrist would contest. One bright spot emerged in Chesler's essay on twenty years since *Women & Madness*. She acknowledged the benefits of psychiatric medication (a breath of fresh air in this book), but proposes making adjunct feminist support available for women in treatment. This wise approach indicates that perhaps the medical model and femi-