A STUDY ON PERCEPTION OF FACIAL EXPRESSIONS OF EMOTIONS IN DEPRESSION

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SUMMARY

The study was designed with a view to examine the relationship between perception of facial affects and psychopathology. Forty normal and twenty depressive subjects were asked to recognize the facial emotions provided and to discriminate the emotional tone in terms of intensity of expression while presented in pairs. A pair comparison solution indicates that the depressives are highly evaluative in the effect of sadness and less evaluative in happiness, in comparison to normals.

In many respects the face may be the most important body area and channel to nonverbal communication. In studies designed to determine what kind of information could be derived from observing facial behaviour, it was found that inferences about emotions, interpersonal roles, and severity of pathology can be made by observers who have had no specialized training (Ekman and Friesen, 1972, 1975). Such inferences are usually accurate in that they coincide with independent assessments of person's total behaviour. But the question rises on how do observers decode the nonverbal behaviour to make judgements about emotion, attitude and personality or are the nonverbal acts which are informative about emotion also informative about pathology or personality.

Ekman and Friesen (1972) developed their own theory on how personality and psychopathology may be manifest in facial behaviour. Pivot to their concept is display rules, which is the social norms regarding facial appearance, probably acquired in early life and functioning on a habitual basis. These socially learned display rules may modify facial expression through 1) intensification, 2) deintensification, 3) neutralizing the mark of a felt emotion or 4) masking it with the facial configuration of another emotion. For them, as a result of particular display rules learned within the family, individuals may in their adult life show 'blocks' in facial expression of emotion. Further, "Personality and psychopathology may be manifest...not just in a patient's blocks in the facial expression of certain emotions, but in blocks in his sensitivity to or understanding of the facial expressions of others" (Ekman and Friesen, 1972).

One experiment (Shannon, 1970) compared general medical patients, schizophrenics, and depressives. No gross difference was found among them in understanding the facial expressions of emotion. But depressives were less accurate on fear, while schizophrenics were less accurate on disgust. Cohen and Rau (1972) observed that the more depressed the patient's affect, based on interview ratings, the more depressive was the pictures of facial affect chosen by them. They found that the technique can discriminate appropriately within the depressive group. Stuart's (1962) data indicate that the depressives are highly evaluative in their subjective experi-

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**Scalar Unit Position of the Photographs of Facial Affect**

**Profile No. 1**  
**Happiness**

![Graph A](image1)

**Profile No. 2**  
**Sadness**

![Graph B](image2)

**Scale:** 1 cm = 0.05

A = Control  
B = Depressive
**Scalar Unit Position of the Photographs of Facial Affect**

**Profile No. 3**

**Fear**

| 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A   | 5   | 4   | 3   | 2   | 1   |     |     |     |     |     |     |     |     |     |

**Profile No. 4**

**Anger**

| 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A   | 5   | 4   | 3   | 2   | 1   |     |     |     |     |     |     |     |     |     |     |     |

**Profile No. 5**

| 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| B   | 5   | 4   | 3   | 2   | 1   |     |     |     |     |     |     |     |     |     |     |     |     |

**SCALE 1cm = 0.1**

A = Control

B = Depressive
ences and Blumberg (1981) found that while conversing with the helpless-dependent face, depressives showed a strikingly high percentage of negative self statements. Aim: The aim of the present study is to investigate the perception of facial expressions of emotions in certain type of mental patients. The relationship between the type of mental illness, and perception of facial expressions of emotions, and how they differ from persons who are not mentally ill will be studied. For the present study, patients of depression were taken.

METHOD

Subjects: The sample of the present study consists of two groups, viz., control and experimental group. Two groups were matched with respect to age, sex, level of intelligence and socio-economic status.

The control group was actually a non-complaint group having equal number of male and female subjects totalling forty. The experimental group consists of patients of depression. Patients were selected from the age group of 20-40 years. Only those cases which did not receive any psychopharmacological agent in the last thirty days were included in the study so as to avoid the possible effect of drug on perception of facial expressions of emotions. Twenty cases of depression—ten male and ten female were taken.

Tools used: A series of photographs of facial expressions of emotions portraying five different emotions, such as, happiness, sadness, fear, anger and disgust, developed by Saha (1973) were taken. Five photographs of different intensities of expression for each emotion were considered for the study.

Research Diagnostic Criteria (Spitzer et al., 1978) were taken as a measure of further validation of diagnosis made undisputedly
by two psychiatrists earlier.

Socio-Economic Status Scale (Kuppuswamy, 1959) and Standard Progressive Matrices (Raven, 1960) were administered to match both the groups in respective criterias.

**Procedure**: The experiment started with the control group. Each subject was taken separately. Five photographs of each emotion were taken and paired. Thus 10 pairs of each emotion and 50 pairs of all 5 emotions were arranged for study. Subjects were first asked to name all five photographs in each emotion and when they did agree with the intended notion they were again asked to indicate which one of the presented pair is more intense in depicting the said emotion. The pairs in each emotion were presented randomly. Every emotion was accounted separately.

For the experimental group, the patients selected, were examined independently by two psychiatrists. Only the undisputedly diagnosed cases were taken. On being convinced of establishing the rapport, the Research Diagnostic Criteria were applied for further confirmation of diagnosis. The patients were not differentiated according to polarity as unipolar or bipolar.

The procedure followed in the control group was exactly replicated for the experimental one, i.e., the depressive group. Never did any patient disagree with the naming of intended emotion and the rest of the procedure was followed to each of them separately.

For each group, matching tools i.e., Socio-Economic Status Scale and Standard Progressive Matrices were used prior to the initiation of actual experimental procedure.

**RESULTS**

In table I, matching criterion were shown with scores in respective criterion.

Using pair comparison method (Guilford, 1954), the scale values for each photograph of all five emotions i.e., happiness, sadness, fear, anger and disgust have been found out and they were presented in table II. For explanation of the table, it was shown that for a given emotion, photograph No. 5 is minimally and photograph No. 1 is maximally explicit or intense in expressing that particular emotion. The profiles of

| TABLE I. Matching criteria |
|-----------------------------|
| **Criteria** | **Control (N=40)** | **Depressive (N=20)** |
| **Sex** | Male | 20 | Male | 10 |
| | Female | 20 | Female | 10 |
| **Age (in years)** | Mean | 26.7 | Mean | 30.7 |
| | S.D. | 6.2 | S.D. | 6.8 |
| **Socio Economic Status Score** | Mean | 14.0 | Mean | 14.3 |
| | S.D. | 6.5 | S.D. | 5.0 |
| **Raven's Progressive Matrices Score** | Mean | 43.0 | Mean | 39.5 |
| | S.D. | 8.9 | S.D. | 5.7 |
Table 2. Scale values of the photographs of facial affect

|       | 1   | 2   | 3   | 4   | 5   |
|-------|-----|-----|-----|-----|-----|
| HAPPINESS |     |     |     |     |     |
| Control | 1.06| .86 | .40 | .30 | .00 |
| Depressive | .81 | .80 | .57 | .66 | .00 |
| SADNESS  |     |     |     |     |     |
| Control | .27 | .17 | .05 | .04 | .00 |
| Depressive | .47 | .46 | .63 | .00 | .39 |
| FEAR     |     |     |     |     |     |
| Control | 1.36| .53 | .47 | .42 | .00 |
| Depressive | .96 | .77 | .00 | .04 | .28 |
| ANGER    |     |     |     |     |     |
| Control | 1.62| 1.24| .90 | .50 | .00 |
| Depressive | 1.46| .91 | .95 | .52 | .00 |
| DISGUST  |     |     |     |     |     |
| Control | 1.13| .68 | .48 | .15 | .00 |
| Depressive | .94 | .47 | .31 | .21 | .00 |

five emotions were provided to have a comprehensive idea about the scalar unit distances.

DISCUSSION

It is observed that even though the groups do not differ in accurate recognition of the content of the photograph, still they vary in the pattern (relative distances of the photographs in the scalar unit separation) of identifying the pictures of facial affect. They also differ in ordering the photographs. From the profile of scalar unit separation (Profile BNo. 1) it can be seen that the control group is more or less consistent in evaluating the five pictures of differing intensity. But for the depressives, it can be seen that their responses cluster in a particular area which indicate that the depressives could not perceive the pictures as consistently as the control group; the inconsistency in responses is probably due to the fact that for the depressives the pictures are not much differentiated or in other words the group lacks the ability to perceive the different patterns of happiness. In ordering the pictures, both groups resemble almost equally. This suggests that for the emotion of happiness, depressives do not vary in cognitive features as evident in ordering but they do differ in affective tonality as evident in indiscriminant patterning.

For the emotion of sadness, the control group discriminated quite uniformly the five photographs of differing intensity but the shorter scale range does suggest some amount of disagreement amongst themselves. The depressives on the other hand, show a wider scale range (Profile No. 2) in evaluating sadness than the control group. This indicates that the depressives are more discriminative on sadness and they opined more consistently in responding to those photographs. The result confirms the earlier findings that depressives are highly evaluative in the negative affects (Stuart, 1962; Blumberg, 1981). The ordering of the photographs were also different from the
control group. This suggests that their perception of sadness is somehow different from the control group.

From the profiles of other emotions, i.e., fear, anger and disgust, it is apparent that the control and depressive groups placed equal emphasis on the pictures of facial affect. The ordering and patterning were found to be almost equal.

The study is implicative in therapy with the depressives. The findings that depressives are highly evaluative in negative affects, will help the therapist either to elicit depressive symptomatology or to have an idea about how far the negative affects are desensitized in course of therapy. Further, the study is useful in differentiating pre-therapy personality profiles.

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