

PERSONALITY CORRELATES OF PAN (BETEL-LEAF) CHEWERS

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40 Pan (Betel leaf) chewers and 40 nonchewers, all male graduate service holders, in 25—35 years age group from middle income families were given a Hindi version of E.P.I. and an interview schedule. It was found that chewers are significantly more extraverted than non-chewers. However, no significant difference was obtained on the neuroticism dimension. Chewers displayed anxiety, irritation, restlessness and loss of drive and initiative as a result of deprivation over 3 hours. Results of the study support the Eysenckian theory of 'Stimulus Hunger' on part of the extraverts.

Pan (Betel-leaf) chewing is an old custom in India. Besides, it is also regarded as auspicious and sacred and is included as an offering at religious ceremonies and rituals. Its medicinal values have been emphasized from time to time (Mishra, 1962).

Studies of smokers and nonsmokers (Eysenck, 1963; Smith, 1967, 1969; Lynn and Hays, 1969) cocoa-leaf chewers (Negrete and Murphy, 1968) give lead to the idea that Betel-leaf chewing may be related to certain psychological and health attitudes. Most of the chewers like its flavour, enjoy the continuous munching of the leaf and feel relaxed. Betel-leaf chewed with lime, katchu, nuts, tobacco and other aromatic flavouring ingredients acts as a gentle stimulant and exhilarant. Betel-leaf chewing may be a fashion for many, a custom for some and compulsive necessity for a few. The last category of people who develop Betel-leaf chewing as a

habit are of special importance and significance for the psychologists. Betel-leaf chewing habit may be linked with "pleasure principle" (Freud, 1938) originating in the oral stage of the psychosexual development. It may be theoretically assumed that high orality and "stimulus hunger" (Eysenck, 1964a) may underlie the habit of Betel-leaf chewing. It seems likely that Betel-leaf chewing, like smoking and addiction to drugs and alcohol, is closely linked with certain personality dispositions of the chewers and thus the habitual chewer is not able to give up the habit easily. The purpose of the present study was to determine the relationship between Betel-leaf chewing and personality dimensions of extraversion—introversion and neuroticism. An additional purpose was to find out the differences in the feelings and attitudes of 'chewers' and 'nonchewers' as a result of deprivation.

METHOD

Sample : The present study was conducted on 80 subjects. All of them were male graduates in the age-group 25—35 years, came from middle income families and were service holders. Half (40) of the subjects were chewers and the rest (40) nonchewers. A subject was identified as a chewer who took betel-leaf with tobacco more than six times a day. Besides, the chewer also took betel-leaf early in the morning as some people take 'bed-tea'.

Measures : All the subjects were given a Hindi Version (Akhtar, 1970) of Eysenck's (1964b, 1966) Personality Inventory (EPI) and an interview schedule. The EPI consists of two parallel forms : Form A and Form B. In the present study Form A was used. This form consists of 57 questions. Of these, 24 questions are related each to the E and N dimensions and 9 questions constitute the Lie-scale (L). The L-scale has been used to identify subjects showing "desirability response set". Against each question 'Yes' and 'No' are printed. The subject has to encircle either of them to indicate his response. For every positive item, related to either E, N, or L dimensions, a 'Yes' response is scored as 1 and similarly for negative item, the 'No' response is scored as 1. Responses given otherwise are scored zero. Higher scores on the E and N scales indicate greater extraversion and neuroticism respectively in the subject. High score on the L scale shows that 'faked good'

is likely to have occurred. An L-score of 4 or 5 has been considered to constitute the cutting point where inventory answers ceased to be acceptable (Eysenck, 1964).

The test retest reliabilities for the original E & N scales of Form A have been reported as .82 (N=92) and .97 (N=27) and .84 (N=92) and .88 (N=27) respectively. Similarly the split-half reliabilities i.e. Form B have been reported to be .747 and .800 (N=1655) for the E and N scales respectively when used on samples of normal population. As reported by Akhtar (1970) the split-half reliability of E and N scales were found to be .757 and .703 respectively. The test-retest reliabilities for the E and N scales were found to be .721 and .764 respectively. Thus the Hindi version of the test possessed high reliability.

Results : Significant difference between the mean neuroticism scores of the chewers and nonchewers was hypothesised. The distribution of the mean neuroticism scores of the chewers and nonchewers is presented in Table I.

TABLE I
Scores on neuroticism
dimension (EPI)

Sample	N	Mean	SD	t	p
Chewers	40	17.80	3.81	1.43	>.05
Nonchewers	40	16.70	4.31		

Comparing the scores, it was found that mean neuroticism score (17.80) of chewers was greater than

the mean neuroticism score (16.70) of the nonchewers. The obtained difference between the two means (1.10) was in favour of the chewers but was statistically nonsignificant. It was, therefore, concluded that Betel-leaf chewers and nonchewers do not differ significantly on the neuroticism dimension.

On the basis of the findings of investigators reviewed earlier significant difference between the extraversion scores of the chewers and nonchewers was expected. The mean extraversion scores of the 'chewers' and 'nonchewers' are given in Table II.

TABLE II
Scores on extraversion
Dimension (EPI)

Sample	N	Mean	SD	t	p
Chewers	40	22.93	3.98	6.60	<.01
Nonchewers	40	17.45	3.39		

A perusal of Table II shows that the mean extraversion score (22.93) of the 'chewers' is greater than mean extraversion score (17.45) of the 'nonchewers'. The difference between the two means (5.48) which is in favour of the 'chewers' is significant beyond .01 level of confidence. As such, it was concluded that 'chewers' are significantly more extraverted than the nonchewers.

Discussion: Eysenck (1964a) considering the "optimal levels of stimulation" of extraverts and introverts expects a kind of *stimulus hunger* on the part of extravert and a

stimulus avoidance on the part of the introvert, relative to each other. To use his own words, "We would predict that extraverts would be likely to smoke more, drink more, and eat more, particularly spicy food; have intercourse more frequently; take more risks, with the accompanying autonomic stimulation providing what has sometimes been called an 'arousal jag'; and enjoy parties and social intercourse generally because of the considerable stimulation provided. The evidence on these points is strongly confirmatory. Extraverts drink more and smoke more cigarettes; they have more illegitimate children, take more risks, and are certainly more sociable. They also make more expansive movements, thus producing greater proprioceptive stimulation, and generally behave as if they were indeed suffering from stimulus hunger". In view of the fact that extraverts require continuous stimulation, munching of betel leaf, provides them with a sort of gentle stimulant. Therefore, chewers being significantly more extraverted than the nonchewers appears to be quite in line with the reasoning of Eysenck. No reason, however, can be forwarded for the nonsignificant difference in neuroticism scores of the two groups. Betel-leaf chewers reported that they felt anxious, irritable, restless, without drive and initiative, tense etc. when deprived of Betel-leaf for 2 to 3 hours at a stretch. They also reported a general feeling of 'missing something' in its absence. Nonchewers reported nothing of the

sort. In conclusion it may be added that the present study supports the 'stimulus hunger' theory of Eysenck.

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AGGRESSION—A CLINICIAN'S VIEWPOINT

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Among the many behavioral symptoms considered in the assessment, diagnosis, and treatment of mental ill-health one of the most salient and crucial topic is aggression. It would be no exaggeration to state that some significant decisions regarding therapeutic planning, prognosis and management depend upon the theme of aggression and its derivatives attributed to the clients life-style. There is some experimental evidence to suggest that the likability of the client, the therapists self-perceived ability to be of help to the client and subsequent prognosis depends to a considerable extent upon the single dimension of aggression and hostility assessed as early as at the initial interview (Kumar & Pepinsky, 1967). This is hardly surprising in view of the fact that anxieties, whether of the individual himself or of the people around him, which make people seek therapeutic help, stem from the fear of expression or actual expression of aggression. The basic issue raised here is that aggression, in its latent and manifest forms, becomes a significant variable in the consideration of psychopathology. Thus the clinician cannot escape from having some theories about the genesis of aggression, its various manifestations in behavior, and its social desirability. As a matter of fact, the clinicians' view of aggression can be fairly representa-

tive of their formulation of the general theory of behaviour and experience and the implicit assumptions they make about human nature.

There exist some widely shared beliefs regarding aggression which need to be reviewed by practicing clinicians in face of the current research findings. Only three such issues have been identified here.

1. *It is desirable and necessary to let out one's aggressive feelings in therapy.* According to frustration aggression theory, aggressive responses are considered self-reinforcing since they reduce the 'derive state' produced by frustration. Hence the expression of an aggressive response lessens the probability that an immediately succeeding aggressive response will occur, a phenomenon called 'catharsis'. Though the experimental evidence is meagre in favour of catharsis hypothesis (weiss, 1969) yet, the expressive therapists called "ventilationists" by Berkowitz (1973), carry cathartic principle to an extreme. They insist that it is unhealthy to bottle up feelings. Many go further to argue that if we could overcome our inhibitions and show our emotions, we could eliminate disturbing tensions, conquer nagging aches and pains, and could promote deeper and more meaningful relationship with others. Furthermore, in extolling the

overriding importance of the present, the here-and-now, they encourage the individual to become more aware of his present sensations. Variety of techniques are used in their attempt to purge the individual's emotions. Sometimes these therapists encourage the client to fantasize his aggression (e. g. biting other people, or beating people). Expressing anger or acting out aggression might have one set of consequences in the immediate therapy situation, but very different outcomes at later times and in other places. However, evidence presented by research makes one take another look at this assumption. Basically, acting out aggression in therapy tends to reduce anxieties and tensions but it tantamounts to rewarding aggression. Walters and Brown (1963) experiments with children indicate that occasional rewards had done more than strengthening the the playful punching, they had, in fact strengthened a broad variety of aggressive responses. Others have demonstrated that rewarding the use of aggressive words encourages an individual to attack available targets later (Parke, Ewall, and Slaby, 1972). Depending upon the circumstances, a person's inhibitions might be lowered or his aggressive behaviour might be reinforced, increasing the chances that the person will again act aggressively even outside the therapy situation. When an individual is angry, his expression of aggression reduces his anger and makes it less likely that he will behave aggressively immediately afterwards. On the other hand, expression of aggression can also teach him

to behave aggressively in general, increasing the likelihood of aggressive behaviours on subsequent occasions. This view is in direct contradiction to what one understands by catharsis - a notion that suggests that expressing aggressive impulses tends to reduce subsequent aggression. What becomes important here for the clinician is to identify the circumstances under which catharsis does or does not occur. The findings available from research, are inconclusive and insufficient for guiding the therapist. If anything, research findings do highlight the complexity of variables such as the influence of the observer's characteristics (Borden, 1975), differential anticipation of approval or disapproval from observers (Bandura, 1973), differential cue properties of the environment in stimulating aggression (Feshbach, 1961), actual annoyance experienced by the subject (Konecni and Doob 1972) and against whom the aggression is expressed (Doob and Wood, 1972).

For a sensitive clinician there is an important difference between client's verbal aggression and client's talking about one's feelings. When a person attacks someone verbally, he provides aggressive stimuli to himself and to others. These stimuli can evoke further aggressive reactions specially in group therapy. However, if the client describes his emotions it has a very different meaning. Telling someone that one is angry can be informative and perhaps beneficial. You let the other person know he has affected you. You give a cognitive

feedback. Cognitive learning of this sort is important in human interactions. The utility of catharsis lies not in attacking others verbally or physically, directly or in fantasy, but in the client's ability to talk about his feelings and describe his emotional reactions.

2. For want of a better theoretical framework, many clinicians subscribe to the "energy hypothesis" of aggression. This, of course, has its genesis in the original formulation of instincts by Freud. Aggressive impulses which were biologically determined achieved their highest degree of expression in the form of death impulse. They were endowed with the libido, which defines the total energy available to the individual. Thus, the notion of catharsis which meant expressing a particular impulse reduced its strength or energy. This "boiler theory" of instincts creeps in surreptitiously despite the critical vigilance of the clinician who may wish to discard this formulation intellectually. This happens in a variety of ways—one is catharsis. The other is to ascribe hereditary basis to the energy which makes one equate aggression in animals with aggression in humans. This view overlooks the fact that hereditary and endocrinal influences on aggression are more open to modification by experience in humans than the one in other animals. It means that one can find considerable diversity among human beings in the stimuli that will elicit or inhibit aggressive behaviour. It also means that man has less stereotyped and more varied outlets

for expressing his anger and hostility than other animals. The deep impress of the energy hypothesis is evidenced also in Lorenz's (1966) observation that there is an absolute link between hostility and affiliations. Social bonding, according to him, necessarily depends upon a viable system of hostility. This is using the "diversion of energy" concept by assuming that aggressive energy is channelized into emotional bonds. It is difficult to discard these basic concepts without nullifying other concepts such as cathexes, "acting out", defences, identification, psychic energy and so on, which have proved useful in the therapeutic set-up.

3. There is a widespread feeling that all aggression is antisocial. Aggressive behavior more than any other behavior makes it difficult for the clinician to retain his non-judgmental attitude towards client. Aggression and its ramifications are labelled as antisocial. However, in the past several decades, there has been an extra-ordinary revolution in the social mores and values. What was considered wicked is not considered so wicked now. It is not that certain behavior is now acceptable because it is seen to be good. But as it is natural for human beings to behave in that way, it is accepted. In other words contents of the id were hellish not because repression made them so but because they contained a residue that was really destructive of the then social norms. However, if one observes carefully what complicates matters further are the cultural mores which do support aggression under certain conditions.

for example, in self defence. There is a strong justification for certain kinds of actions that are related to aggression, such as, assertive action. In many instances, there is a thin line between aggression and healthy assertion. Aggression conjures up an image in our mind of the anti-social that is seen in annihilation and destruction. It is difficult to imagine that aggression may not be all that harmful. Therefore, despite the knowledge of changing social mores, the myth that all aggression is anti-social continues.

Reinterpretation of aggression. To overcome some of the above mentioned dilemmas in our thinking of aggression have to be dispelled. In the past, there have been almost as many theories of aggression as there are individuals doing research in it. Partly this is because different scholars have studied the problem from the view point of different disciplines and research methods have varied tremendously. For a clinician, working for the health and the self-actualization of the client in a dyadic interaction or clients in a small group has to focus upon a very different kind of understanding of aggression than say a political scientist who is viewing international hostilities and wars, or the sociologist who is concerned with violence on the street or riots, or for that matter a physiological psychologist who is attempting to determine the neural correlates of aggression. In each case as the level of analysis changes, the environmental instigators take a different hue. The selection of a theoretical framework depends upon its func-

tional convenience, that is, those theoretical propositions have functional utility which help the clinicians understand and deal effectively with his confrontations with aggression in his client.

One such functional convenience is provided by the personal construct theory of George A. Kelly (1955) who by focussing on person's psychological processes and the ways he anticipates events, defines aggression as the degree to which a person involves himself in the spontaneous elaboration of his constructs. Constructs are labels or interpretations that an individual gives to events in the outside world. These are the templates of meaning that give structure to his varied experience and in course of time help him anticipate behavior of others and predict events. Aggression according to Kelly, places the individual on new ground, confronting him with new experience he could not have otherwise, dilating his field in certain anticipated directions, bringing him face to face with new problems to be solved, exposing him to new anxieties to be resolved, and generally accelerating the evolvement of his construction system (p.874). In the same framework, hostility is the continued effort to extort validation evidence in favor of a type of social prediction which has already been recognized as a failure (Kelly p. 875).

Some experimental evidence from social psychological research supports this general formulation. Tedeschi, Smith & Brown (1974) offer an alternative conception of aggression in

terms of source's use of coercive power. By looking at aggression in terms of gaining compliance, one is focussing on the individual's meaning of the situation rather than on the value system of the perceiver. Personal construct system allows the clinician alternative constructions of aggression than what is possible through the traditional meaning of it as intention to harm. Not only that, it further helps the clinician to avoid taking a moral judgmental stand by perceiving aggression as a construction of the client and not that of the perceiver. "In the past whether an action is labeled aggressive depends upon the perspective of the observer or upon whose interests are being negatively affected" (Tedeschi, Smith and Brown 1974, p. 556). The personal construct formulation incorporates some of Schachter's views (1974), which give special attention to the individual's environment, or at least to his understanding of it. In maintaining that any specific emotion is a function both of his physiological arousal and the individual's understanding of the events that produced the excitation, Schachter is giving cognizance to the construct system of the individual.

For the clinician, still another kind of evidence is the one that suggests the significance of environmental cues in eliciting aggressive responses in the individual (Berkowitz 1974, Bandura 1963, Walters 1963,). For the clinician this emphasis is a sufficient pointer to do more thorough diagnosis of the situations in which the aggressive or hostile actions are observed. Current conce-

ptualization of human environment into types (Moos, 1973) underscores this further. The identification and control of these external aggression arousing cues could prove more effective in modifying client's behavior than an imputation of a biological drive.

Summing up, the meaning of aggression in the total symptomatology of the client takes on a different perspective if the clinician develops alternative construction of these behaviors. Aggressive behavior, in accordance with Kelly's views, escapes the antisocial label because it views it in terms of the client's meaning and not in the perceiver's framework. Aggression could be desirable if it leads to perceptual elaboration of one's life space. By allowing for alternative construction of aggression besides the traditional one, namely the intent to do harm, it opens up other channels of understanding it, for example, as coercive action, thus giving a widely different meaning to individual's behavior. This naturally provides greater freedom than is otherwise possible to the client as well as to the clinician to make modifications in behaviour.

The following case briefly reported here is an illustration of aggression being construed in the client's framework and with significant treatment outcomes.

S. a twenty-two year old student in his final year of engineering studies walked in to the author's office stating he needed help urgently. His

presenting problem was no different from that of other student-clients. Like them, he was unhappy about his decline in academic performance. What caused him anxiety was the fact that at the end of his academic career he ran the risk of being placed on probation. His main problem was that he could not concentrate on his studies. The enquiry what thoughts prevented him from doing so, immediately brought the client to focus upon his real problem. He reported his fantasies about hurting people. The sight of a knife, he said sent a "tingling" sensation through him. As much as he enjoyed these aggressive fantasies, he was afraid of going out of control. He could not trust himself if he got hold of a knife or a cycle chain. A quick gathering of facts followed. Had he ever hurt people physically in the past? He had and he could get out of hand when angry. The precipitating event was the episode of his break with his girl friend. His specific fear and desire was to kill her. S. launched into a tirade of hostility against his girl friend who had let him down by refusing to marry him.

S. was seen for about ten hours during the rest of his stay in the institute. From the beginning the therapist did not encourage S indulging in guilt-laden hostile outpourings towards the girl friend. Catharsis in such a situation could have encouraged a dependency on the therapist which would have made it very difficult for the client to take on the adult role later. Perceived from the client's framework, it appeared

that he had through his friendship with the girl, dilated his field in interpersonal relations, but was unable to live with the results of his social experimentation. S's experience of sexual relationship had resulted in a state of affairs that he could not manage. He thus expressed his hostility toward the person with whom he had tried to place himself on a new ground. His desire to gain compliance from her in a particular direction. His aggression was his experimentation with the masculine role which exposed him to new anxieties and generally accelerated the evolvment of his construction system. Interpretations by the therapist regarding assertion dependency dimension of his masculine role made a great deal of sense to the client. He was helped to reconstruct the situation in a more discriminating fashion and channelize his hostility into more healthy elaboration of his experience.

Not known to the therapist at the time was the trip client took to see his girl friend who lived in another city. He wanted to experiment once again to find out for his ownself if he could give a different direction to his interactions with this girl. He tried out his new role the assertive one to see if it would yield better results in his experimentation with masculine identity. Hostile fantasies completely disappeared at this juncture.

Unexpected changes were initiated in other areas of S's life by S. himself. He decided that he did

not want the job his influential father had lined up for him after completion of his studies. He started applying for jobs through the Placement Office of the institute. He wanted to compete with his peers and get a job "on his own steam". There was a history of father's domination and S's dependency on him. His vigorous efforts to find a job were accompanied by a spurt of good performance in the quizzes. He graduated on time and found employment soon after.

Secondly, the usefulness of catharsis becomes dubious if the therapist does not distinguish between the clients acting out aggression which is likely to reinforce subsequent aggressive behavior, from clients talking about it. In addition, the "boiler theory" of aggressive drive associated with the Freudian concept of instinct, interferes with any attempt at the diagnosis of these external cues which elicit aggressive responses. One of the major contributions of social learning theorists to the practicing clinician lies perhaps in shifting their focus from intrapsychic factors to the setting which elicits certain types of behaviour patterns. Careful analysis of the environmental factors, their identification and subsequent control of external cues are likely to be more functional in helping the client modify his behavior than looking for the instinctual roots of behaviour. For the clinician to achieve the maximum functional benefit from any theoretical formulation, he must select those constructs which give him the great-

est focus of convenience and utility in his therapeutic pursuits with his client and which allows him, just as much as it does the client, freedom of alternative construction of phenomenon.

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PATHOLOGICAL VERBALIZATION ON INKBLOTS AND PSYCHODIAGNOSIS

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Sixty organics, sixty schizophrenics and sixty neurotics along with a matched control group of sixty normal subjects were administered the Holtzman Inkblot Technique. Responses obtained on this test were analyzed for pathological verbalizations. Results reveal that the test is able to explore the thinking disturbances in various groups under study. Also the analysis of results reveal that inkblot variable pathognomic verbalization successfully differentiates between the various groups under study.

Despite the fact that pathological verbalization on inkblots can frequently help in differential diagnosis of mental illnesses; only few studies have been conducted using this inkblot variable. Rapaport et al (1946) have presented an elaborate discussion in regard to this inkblot variable using Rorschach Test and they have provided a clear theoretical rationale as well as empirical evidence for the validity of their scoring method. Loveland (1961) has conducted a study to find out the difference between epileptics and non-epileptics with the help of pathognomic verbalizations on Rorschach Test. He reports that Rorschach experts were able to differentiate between the two groups based on communications and verbalizations of the subjects. Quirk et al (1952) have studied the pathological thinking in acute psychotic patients using Rorschach Test. They found that there was difference in the psychotic and non-psychotic groups. Hartung et al (1969) have studied

pathognomic-verbalization using Rorschach test under experimental conditions. Subjects of their study were 59 undergraduate students.

Recently Whitaker Jr. (1965) has compared the Rorschach test and Holtzman Inkblot technique measures of pathognomic verbalizations and found that interscorer reliability of Holtzman Inkblot technique was quite high and also that there was high positive correlation between the Rorschach test and Holtzman Inkblot technique in regard to pathognomic verbalizations.

Based on the rationale developed by Rapaport et al (1946) quantitative scoring system was developed by Holtzman et al (1961) for scoring the pathognomic verbalizations on their own inkblot test. The technique has yielded fruitful results in many of the large scale studies conducted by Holtzman et al (1961), Holtzman (1966) and Holtzman et al (1964). The present investigation was taken up to find out the efficacy of pathognomic verbalization

on Holtzman Inkblot technique in the differential diagnosis of mental patients.

METHOD

Subjects Sixty schizophrenics, sixty organics, sixty psychoneurotics and sixty normal persons served as the subjects of this study. Diagnoses of the pathological cases were obtained from the Psychiatrist Incharge of the Ward. Later, these diagnoses were verified using psychological tests and by obtaining the opinion of Medical Superintendent, and Neurosurgeon. All the four groups were matched in regard to age, education and socio-economic status. The pathological groups were also matched for duration of illness. The patients were taken from Hospital for Mental Diseases, Kanke, Ranchi, and Ranchi Mansik Arogyashala, Kanke, Ranchi. The normal subjects were selected from several places in order to match them with the pathological groups. Details of the samples are given in Tables, I, II and III

TABLE I

Distribution of age in the Four Groups

Age Range in years	15 to 30	31 to 45	46 to 60
Name of the Group			
Normal	17	32	11
Neurotic	19	31	10
Schizophrenic	21	29	10
Organic	18	32	10

TABLE II

Distribution of Education in the Four Groups

Educational Range	Upto IX Class	X to under-graduate	Graduates and Post-graduates
Name of Group			
Normal	24	18	18
Neurotic	28	21	11
Schizophrenic	24	24	12
Organic	29	21	10

TABLE III

Distribution of income in the Four Groups

Income Range	Rs. 100 to 299	Rs. 300 to 600	Rs. 601 and above
Name of Group			
Normal	12	30	18
Neurotic	11	28	21
Schizophrenic	12	30	18
Organic	13	30	17

Tools and Procedure : Holtzman Inkblot Technique Form A was used in this study. The test was individually administered to each subject following Holtzman (1958). Recording was done on standard Record Forms.

Scoring of Pathognomic verbalization : Pathognomic verbalizations were scored on a 5-point scale following Holtzman et al (1961). A score of zero was given to those responses where pathognomic verbalizations were absent and score of 4 was given to those responses, where maximum amount of pathological verbalization was seen.

Results : The obtained scores were analyzed for obtaining the Means and Standard Deviations. Further, the Mean Differences between the various groups were tested for knowing if these Mean Differences were significant. Results are presented in Tables IV and V.

TABLE IV

Means and Standard Deviations of Pathognomic Verbalizations in the Four Groups

Group	Mean	S.D.
Organic	73.15	30.75
Schizophrenic	54.30	28.40
Neurotic	16.00	14.60
Normal	3.16	2.40

N=60 in all groups.

TABLE V

Significance of Group Differences

Groups	t
Organic Vs Schizophrenic	3.49
Organic Vs. Neurotic	13.02
Organic Vs. Normal	17.58
Schizophrenic Vs. Neurotic	9.32
Schizophrenic Vs. Normal	13.93
Neurotic Vs. Normal	6.75

df=118 and t significant at .01 level in all cases.

Test Behaviour : The normal group showed genuine interest in the task. They were fully co-operative and communicative. However, they showed fear of being detected and that is why they were inhibited

to some extent in comparison to other groups.

The neurotic patients were keen to take the test in order to help themselves, since they told that results will help to understand their problems. They were very much co-operative and communicative during testing situation. They were careful in giving an appropriate response to an appropriate area of the inkblot, i.e. the "Form Appropriateness".

Patients in the schizophrenic group showed a reverse picture in comparison to normal and neurotic groups during the testing situation. It was difficult to establish the rapport with them and they did not show much interest in the testing-situation. It was difficult to make some of them to co-operate. With much difficulty they were made to work on the test. Once taken to the task they were found to be careless about the "Form" i.e. goodness of fit of the inkblot area with the reported concept.

The organic group presented a more deteriorated picture. Most of them were restless and agitated. They were less co-operative than other groups. They did not show an even flow of performance. Marked perseveration of responses was observed. They were least bothered to see if the reported concept is appropriate in form to the area of the inkblot selected for the concept.

Discussion : Table IV clearly shows that the mean score on pathognomic verbalization is highest for organic and this was the group who

cared least for "Form-appropriateness" and "Form-Definiteness" of inkblot variables. Most of them showed complete loss of intellectual control over their inner impulses. All this is not unexpected from this group, as these patients have lost sufficient amount of brain cells, which were helping them to keep their thinking and reasoning intact to give due respect to accuracy and reality of perceptions.

Next in order are the scores of schizophrenic group, which are considerably high in comparison to normal and neurotic groups. This group also showed least regard for the "goodness of fit" of the inkblot with the reported concept.

Schizophrenic patients are well-known for their thinking disturbances and disregard for reality. Findings of this study are in confirmation with other studies using Holtzman inkblot technique as well as Rorschach Test (Rapaport et al, 1946; Holtzman et al, 1961; Holtzman et al 1964). Rapaport et al (1946) write in this regard that patient's associative processes may go their "merry way without referring back to the inkblot for perceptual regulation and modification of the final response".

Among the clinical groups, scores of the neurotic group are lowest on pathological verbalization. It means that neurotic group has minimum thought disturbance in comparison to schizophrenic and organic groups. It was observed that neurotic patients showed maximum regard for the form present in inkblots. Their score on

"Form-Appropriateness" was quite high showing thereby that the "goodness of fit" of the concept reported by them was in congruence with the form of the inkblot. Clinically also we know that thinking disturbances are not the dominant feature of the neurotic group.

Normal control group of this study got lowest scores on pathological verbalization in comparison to all other groups, showing thereby that the normal subjects have least of thinking disturbances.

Coming to the Table V we find that all the groups were significantly differentiated from each other by the inkblot variable pathognomic verbalization.

Thus, one can say that inkblot variable "Pathognomic Verbalization" is of great help in the field of psychodiagnosis, specially for the purposes of differential diagnosis.

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THE PSYCHOMETRIC ASSESSMENT OF HEAD INJURY

T. B. D' NETTO AND R. KISHORE

A study of 40 cases of head injury is presented. The results show that a battery of psychological tests revealed that 70% of the cases had residual brain damage. The battery of psychological tests is superior to clinical examination and ancillary tests like EEG in the detection of brain damage. Signs and symptoms of mental morbidity are present long after the acute stages of head injury have passed.

In our fast-moving modern society, head injury is becoming increasingly frequent. In Britain it is now one of the principal causes of admission to hospital. Garland (1964) estimated that it is the cause in 5% of all admissions to any general hospital. With modern surgery, most of them survive but some of them are mentally and physically handicapped. The magnitude of the problem, however, is not generally appreciated but at the present rate, the number of such disabled persons is likely to become significantly larger, thereby creating special problems of rehabilitation.

The effects of head injury on the mental functions of the individual are not appreciated unless the signs and symptoms are very noticeable. Many patients who complain of headache, giddiness and loss of concentration etc are often diagnosed as neurotic or as malingerers because there is no objective evidence of the

residual brain damage. Such diagnostic labels as "post-traumatic neurosis" or "compensation neurosis" were common in the past and added to the misery of these unfortunate individuals.

The advent of clinical psychology has greatly altered this situation. The psychological tests produce objective evidence of organic brain damage resulting from the head injuries. The results are so consistent that they cannot be lightly dismissed. Moreover these results are often confirmed by operative or post-mortem findings. Psychometric assessment therefore is now accepted as an important part of the evaluation of every case of head injury.

Head injury is a condition which is quite common in the Armed Forces. As early as 1962 the Indian Air Force expressed concern over the increase in the number of cases of head injury among the aircrew which interfered

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with their subsequent flying status. Lakshminarayan (1967) undertook a project to study the problem. This resulted in several valuable recommendations, one of which led to the compulsory use of protective helmets for all motor cyclists. Now-a-days, in every large military hospital, where neuropsychiatric facilities exist, psychometric assessment is invariably done for all cases of head injury.

This paper presents the findings of psychometric assessment of cases of head injury evaluated at the Command Hospital, Lucknow.

Material and Method.—Forty consecutive cases of head injury that were admitted in the Neurosurgical ward of the Command Hospital (CC) Lucknow and who could be psychometrically tested were studied. The following tables show the demographic data :

TABLE I
Age Groups

N=40		
AGE IN YEARS	No.	Per cent
16-20	3	7.5
21-25	11	27.5
26-30	13	32.5
31-35	9	22.5
36-40	2	5
41-45	0	0
46-50	2	5

In this sample, the maximum incidence is between 21-35 years.

TABLE II
Educational Status

N=40		
EDUCATIONAL LEVEL	Nos.	Per cent
Illiterate	7	17.5
Non-Matric	21	52.5
Matric & Above	12	30

TABLE III
Time Elapsed Since Head Injury

N=40		
TIME IN MONTHS	Nos.	Per cent
0-6 months	5	12.5
6-12 months	6	10
12-18 months	14	35
18-24 months	8	20
24-30 months	5	12.5
30-36 months	3	7.5
over 36 months	1	2.5

It will be seen from this table that majority of the cases were not fresh cases of head injury but were old cases who had come either for review or because of the development of symptoms that could have been attributed to the previous head injury. This is important, because we were not dealing primarily with fresh cases of head injury in whom mental symptoms often do occur and may be transient. The majority of the cases were old cases, where the acute or immediate effects of the injury had subsided and hence could be said to have been neurologically stabilised in that the effects of cerebral oedema, acute haemorrhage etc. had passed off.

TABLE IV
Location of Injury

N=40

LOCATION		Nos.	Percent
Frontal	— Rt	7	15
	— Lt	13	32
Parietal	— Rt	3	7.5
	— Lt	9	22.5
Temporal	— Rt	2	5
	— Lt	8	20
Occipital	— Rt	2	5
	— Lt	5	12.5

Some of the cases had multiple injuries on the head.

In this sample, all the 40 cases were right handed individuals.

Method. All these 40 cases were subjected to a Psychiatric examination and then administered a battery consisting of the following psychological tests: (a) Bender Gestalt test for organic brain damage, (b) Progressive Matrices test of intelligence, (c) Draw-a-Person Test, (d) Memory scale (Boston), (e) Rorschach Psychodiagnostic Inkblot test.

Results. The following table shows the frequency of symptoms and signs detected on clinical psychiatric examination.

TABLE V
Symptoms After Head Injury

Symptoms	Frequency	Per cent
Headache	32	80
Forgetfulness	29	72.5
Giddiness	28	70
Lack of concentration	19	47.5
Irritability	17	42.5
Anxiety	8	20
Sleeplessness	7	17.5
Diminished vision	7	17.5
Vertigo	4	10.0
Defective hearing	2	5
Fits	2	5

It will be seen that several patients had multiple symptoms of which headache, forgetfulness, giddiness and lack of concentration were most frequent.

The next table (Table-VI) shows the results of the battery of psychological tests.

TABLE VI
Results of Psychological Tests

N=40

PSYCHOLOGICAL TESTS	ABNORMALITY DETECTED	Per cent
Bender Gestalt	30	75
Progressive Matrices	29	72.5
Draw-a-person	29	72.5
Memory Scale (Boston)	26	65
Rorschach Test	27	67.5
Average		70.30

The findings are highly significant because they revealed that 70.30% of this sample had objective signs of organic brain damage affecting their mental activities.

The case records and the laboratory data were then studied to find out the frequency of positive clinical and physical findings recorded by the Surgeons and Neurologists. These are recorded in the following table.

TABLE VII
Physical Findings

PHYSICAL FINDINGS	PRESENT	Per cent
Clinical Neurological examination	5	12.5
Ancillary tests like EEG, X-Ray etc.	25	62.5
Average		42.5

The next table (VIII) shows the statistical significance of the differences between the two methods of detecting organic brain damage.

TABLE VIII
Signs of Organic Brain Damage Detected

N=40

METHOD	POSITIVE SIGNS DETECTED Per cent	SIGNIFICANCE
A. Physical Exam. and Ancillary Tests (EEG, X-Ray etc)	42.5	CR=5.00 Significant at 0.01 level
B. Psychological Tests	70.3	

It will be seen that the psychometric assessment is more closely related to the clinical symptoms than the physical examination and ancillary tests. If the doctor depended on the latter alone, he would have missed the finer degrees of brain damage which gave rise to the symptoms. He diagnosed these patients as neurotic or even as malingers. The psychometric tests helped to avoid this mistake.

It would have been interesting if the correlation between the psychological tests and localisation of the head injury could have been demonstrated. But as the sample is very small (only 40 cases), the correlation may not be valid. Hence this aspect has been omitted from this paper. It is hoped that this will be presented at a future date.

Since personality is a very important factor, it would have been useful to study the effects of head injury on the personality of the patients. But, the absence of data on the pre-injury personality has resulted in the decision to exclude this aspect from the present study. It is hoped to take up this aspect at a later date.

Discussion : That the brain is "the organ of the mind" has been known and accepted for thousands of years. Anything that disrupts the working of the brain or damages its tissues is liable to produce changes in behaviour. Yet, the study of the relationship between the brain and the mind has been neglected. Detail-

led information on this relationship is of recent origin, and it is only in the last twenty years that there has been an appreciable advance in our understanding of the effects of damage to the brain in relation to mental activity.

It is being increasingly recognised that the mental symptoms following the injury are not necessarily functional or neurotic in nature. (Symonds, 1937; Oppenheimer, 1968; Strich, 1969; Taylor and Bell, 1966; Taylor, 1967; Mersey and Woodfords, 1972; Lishman, 1968; etc.) In our series of 40 cases presented in this paper, 70% showed signs of organic brain damage when subjected to the psychological tests. Therefore, in the face of such evidence to label these cases as neurotic is to do an injustice to them.

The personality of the patient is a very important factor in determining the subsequent course of events. This is true not only of head injuries, but of any serious physical illness eg. myocardial infarction. In the case of myocardial infarction, however, the problems are usually emotional in nature, i.e. development of pathological anxiety or depression, unless cerebral ischaemia complicates the picture. But in the case of head injury, the other mental faculties like intelligence, perception, memory and concentration may be adversely affected. Early detection of these defects is of vital importance, especially in the case of those who hold responsible positions.

This paper has demonstrated that a battery of psychological tests is superior to clinical examination and ancillary tests like EEG, X-Ray etc. in the detection of organic brain damage. Localisation of the brain damage is also possible, though it is a very complex problem and the results will have to be evaluated and interpreted with considerable skill and caution. What is of greater importance, would be the application of the knowledge of the neuro-psychological disturbances to the rehabilitation of such cases of brain injury. For example, it would be useless to try and rehabilitate a person in executive position even in civil life, if his mental faculties had been so severely affected as to make him incapable of taking responsible decisions.

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THE CAPACITY OF SOME PSYCHO-MOTOR TESTS FOR DIFFERENTIAL DIAGNOSIS

CHANDRA PRASAD SREEDHAR, A. VENKOBARAO, R. RAWLIN CHINNIAN
AND KRISHNA PRASAD SREEDHAR

Three Objective Behaviour Tests (Tapping, Steadiness and Static Ataxia) were administered on 20 Normals, 20 Neurotics and 20 Schizophrenics to find out the differentiating capacity of the tests. It was found that all the three tests significantly differentiated Neurotics from Normals; but only the Tapping and Steadiness tests differentiated schizophrenics from normals. Statistically significant differences between Neurotics and Schizophrenics were found only in Steadiness and Static Ataxia tests. When neurotics and schizophrenics were put together to form the abnormal group significant differences between the abnormal and the normal groups were noticed only in Tapping and Steadiness tests.

In psychiatry diagnosis still remains one of the most vexing problems. Diagnosis based on clinical intuition and other subjective measures has proved to be highly unreliable (Eysenck, 1958). The poor reliability of diagnosis through subjective means has turned the attention of many research workers to clinical testing. But, soon they found that many clinical tests like the Rorschach ink-blot, the T.A.T. etc. were no better than clinical intuition. Paper-pencil tests, although emerged with great promise, had their limitations too. However, they proved to be certainly more reliable than the

other conventional methods. It appears now, that objective Behaviour Tests popularised by Eysenck (1958) seem to hold greater promise in the fields of clinical diagnosis and in the selection of personnels (Eysenck 1950, Himmelweit, 1950, Himmelweit and Summerfield, 1951; Kelley, 1947). Eysenck (1958) has also showed the differentiating ability of many psycho-motor tests between normals and abnormals. That such tests can be safely adapted to entirely different cultures have been shown by Devadasan (1962) and Jagathambika (1967) in cultures obtaining in Kerala and Karnataka

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respectively. The present study is another verification of the differentiating capacity of certain psycho-motor tests in yet another Southern Indian culture, i. e. the Tamil culture.

Method. The investigation was made at the Department of Psychiatry of the Government Erskine Hospital, Madurai, Tamil Nadu. The sample consisted of 20 Normals, 20 Neurotics and 20 Schizophrenics. The neurotics and schizophrenics were selected on the basis of diagnosis by psychiatric experts. The normal subjects were drawn from the nursing staff and students. History of no reported psychiatric illnesses was the chief criterion employed for the selection of normals. The three groups were matched for age. The subjects were administered the three psycho-motor tests as described below.

Tapping. The Whipple's Tapping Board with electrical connections to an impulse counter was used. The board was kept on a table, and the subject was asked to stand erect in front of the table, but not touching it. The subject was made to hold the stylus vertically with the three fingers (thumb, index finger and middle finger) of the preferred hand. The subject was made to start tapping to a signal given by the experimenter and was instructed to tap at the maximum speed possible. In all, three trials of 15 seconds duration each, were given with a rest pause of 5 minutes between trials. The final score was the average of the tapping in the three trials.

Steadiness Test. The steadiness was measured by using the Whipple's steadiness tester. The apparatus was connected to an impulse counter so that whenever the stylus held by the subject came into contact with the holes, the counter registered an error. The subject was asked to sit near the table but without touching it and was asked to hold the stylus with his thumb, index and middle fingers, in such a way that it was vertical to the facing plane of the apparatus. The subject was asked to insert the stylus into the holes and try to keep it at the centre of the holes without touching the sides. 30 seconds duration was given in each of the holes and the total number of contacts made in all the 9 holes constituted the steadiness score.

Static Ataxia. The ataxia graph consists of a cap, the subject had to wear on his head and a stylus to record his body sway. The subject was made to stand still in a relaxed posture with eyes closed, the hands hanging down the side and feet together. The duration of the test was 30 seconds. The maximum sway either forward or backward was the score.

Results and Discussion. The results show that the tapping test clearly differentiates normals from psychiatric patients to a statistically significant level. The mean scores for tapping for normal and abnormal groups were 105.05 and 72.85 respectively. The test also differen-

...ates normals from neurotics and normals from schizophrenics at different levels of statistical significance. However it failed to differentiate between neurotics and schizophrenics. The mean scores of neurotics and schizophrenics were 76 and 69.70 respectively.

The steadiness test also differentiates normals from abnormals. The mean scores were 154.7 and 382.82 respectively. The results also show that the test differentiates normals from neurotics, normals from schizophrenics and neurotics from schizophrenics at different levels of significance. The mean scores of normals, neurotics and schizophrenics were 154.7, 344.15 and 421.5 respectively.

In the case of Static ataxia it was found that the test does not differentiate normals from abnormals and normals from schizophrenics. The mean scores of normals and abnormals were 1.91 Cms. and 2.69 Cms. However, the test differentiates normals and neurotics, and neurotics and schizophrenics to a statistically significant level. The mean scores of neurotics and schizophrenics were 4.02 Cms. and 1.37 Cms. -

The present study clearly shows that the tapping test differentiates

normals and abnormals ($p < 0.001$). It also reveals that the test differentiates normals from neurotics ($p < 0.001$). Though, this is in conformity with the findings of King (1954), a number of research workers in this area (Eysenck, 1952; S.B.G. Eysenck, 1955; Wulfick, 1941; Himmelweit and Patrie, 1951 and Devadasan, 1962) found that the speed of rate of tapping does not differentiate normals and neurotics. The differences in the present finding may be because of the fact that unlike in the previous studies, in the present study subjects were instructed to 'tap at the maximum speed possible'. As Krishna Prasad Sreedhar, Venkoba Rao, Rawlin Chinnian and Chandra Prasad Sreedhar (1974) have pointed out, the above instruction might have induced an abnormal High Drive in the neurotic resulting in the disruption of performance as predicted by the Yerkes-Dodson law. Tapping test was found to differentiate between normals and schizophrenics ($p < 0.05$). This is in line with the findings of Shakow and Huston (1936), King (1954) and Devadasan (1962). The present study, however, did not find statistically significant difference between Neurotics and Schizophrenics, the explanation for which is again offered by Sreedhar et al (1974) in terms of drive theory.

TABLE I

Shows the 't' test Tapping

	Mean	S.D.	t	df	Level of Significance
Normals	105.05	11.83	8.05	58	$p < 0.001$
Abnormals	72.85	15.21			
Normals	105.05	11.83	6.58	38	$p < 0.001$
Neurotics	76	16.6			
Neurotics	76	16.6	1.18	38	Not significant
Schizophrenics	69.70	16.31			
Normals	105.05	11.83	2.12	38	$p < 0.05$
Schizophrenics	69.7	16.31			

The steadiness test also differentiates normals from neurotics to a statistically significant level ($p < 0.001$) and also normals from schizophrenics ($p < 0.001$). The study conducted by Jagathambika (1967) also supports the above findings that

the test clearly differentiates schizophrenics from normals. The results given in the Table II show that the steadiness test also differentiates neurotics from schizophrenics ($p < 0.05$).

TABLE II

Shows the 't' test for Steadiness

	Mean	S.D.	t	df.	Level of Significance
Normals	154.7	36.9	6.24	58	$p < 0.001$
Abnormals	382.82	110.5			
Normals	154.7	36.9	7.42	38	$p < 0.001$
Neurotics	344.15	104.8			
Neurotics	344.15	104.8	2.30	38	$p < 0.05$
Schizophrenics	421.5	102.1			
Normals	154.7	36.9	10.72	38	$p < 0.001$
Schizophrenics	421.5	102.1			

TABLE III

Shows the 't' test for Static Ataxia

	Mean	S.D.	t	df	Level of significance
Normals	1.91	0.55	1.94	58	Not significant
Abnormals	2.69	1.75			
Normals	1.91	0.55	5.92	38	$p < 0.001$
Neurotics	4.02	0.46			
Neurotics	4.02	0.46	7.19	38	$p < 0.001$
Schizophrenics	1.31	0.65			
Normals	1.91	0.55	1.539	38	Not significant
Schizophrenics	1.31	0.65			

Our findings with the above two tests are that they are good diagnostic tools as they differentiate normals from abnormals very clearly ($p < 0.001$).

Eysenck (1947, 1960) has investigated the differentiating capacity of the static ataxia test and came to the conclusion that this test is a good measure to differentiate normals and neurotics and not between normals and psychotics. Later studies have also showed that this was true. For example Devadasan (1962) found that static ataxia test differentiated neurotics from normals and Jagathambika (1967) noted that static ataxia did not differentiate psychotics from normals. The present study reiterated the findings of the above investigators and showed that the test differentiated only neurotics and normals ($p < 0.001$) and not psychotics (schizophrenics) from normals.

The study also showed that the test can be used to differentiate neurotics from schizophrenics ($p < 0.001$) but not normals from abnormals when the abnormal group consisted of both psychotics and neurotics.

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EFFECT OF ANXIETY ON CERTAIN PARAMETERS OF THE THEORY OF SIGNAL DETECTABILITY (TSD)

G. LEELAVATHI AND S. R. VENKATRAMAIAH

The effect of anxiety on three parameters of the Theory of Signal Detectability (TSD) namely, sensitivity (d'), response criterion (β) and proportion of correct responses P (CR) was examined. It was predicted from the Decision Theory model that anxiety as a source of stress on the responsiveness of the nervous system, mediated and (1) reduced the sensitivity, (2) increased the magnitude of the central neural effect thereby increasing the criterion value and (3) reduced the P (CR).

Two groups of subjects—High Anxiety (HA) and Low Anxiety (LA)—25 in each, were set up by using IPAT Anxiety scale. The Signal Detection experiment was specially designed by way of visual detection. Statistical comparison of the mean values of the three parameters between the two groups provided significant evidences in support of the predictions. The usefulness of the Decision Theory model to personality research was established.

Research studies on the Theory of Signal Detectability (TSD) and its application to psychological problems are few and far between. (Green, 1960; 1966; Ingleley, 1973; Price, 1966; Swets and Tanner, Jr. 1961; Tanner Jr. and Swets, 1954). Most of the research was focussed on the measurement of selected parameters within the framework of TSD and on relating them either to stimulus properties or traditional psychophysical procedures. (Green & Swets, 1966; Tanner, Jr. & Birdsall, 1958; Treisman & Watts, 1966; Treisman 1964).

To view anxiety as stress acting on the human response system and to measure its effects in terms of TSD is perhaps a worthwhile scienti-

fic exploration. Broadbent (1971) after examining the available evidence has proposed an informational flow model to understand the decision making process in human individuals and the effects of various kinds of stress acting on the human response system. Against this background, it was possible to make certain predictions within the framework of TSD, in relation to measurable levels of anxiety and test them. This study was designed to test the following predictions in an experimental task of visual detection with human observers at two levels of anxiety (high and low) as subjects;

1. Anxiety affects the responsiveness of the nervous system and tends to reduce the sensitivity in the

detection of signals of fixed intensity presented at defined intervals. 2. Anxiety affects the magnitude of the neural effect generated by signals and tends to increase the critical value of the criterion selected by the human observers in making decisions. 3. Anxiety reduces the hits rate achieved over all trials by human observers in the signal detection task.

METHOD

Subjects. The subjects were 60 post graduate students (all women) at the S. V. University College, Tirupati. Their age ranged between 20—25 years. Of these 60 girls, 25 were in High Anxiety group while the Low Anxiety group also had the same strength.

Measurement of Anxiety. The IPAT Anxiety scale (Cattell & Sheier, 1963; Cattell 1963; Venkatramiah, & Bharathi Kumari, 1973) adapted to Indian condition was administered to 150 post-graduate students (women) at S. V. University College, Tirupati. From the distribution of the total scores on the scale, 17% at the top and 17% at the bottom of the sample were selected to constitute the HA and LA subjects.

MATERIALS & PROCEDURE

Stimulus material for the signal detection task. The stimulus material for the experiment in visual detection was designed as follows; five names of colours were chosen from the different regions of the visual spectrum viz., RED, ORANGE,

GREEN, BLUE, and VIOLET. These 'colour words' were printed on 14cm. x 9cm. cards so that each colour word was printed in all the four ink colours except the colour represented by the word itself. For example, the colour word 'RED' was printed in orange, green, blue and violet inks but not in red ink. The same 'colour words' were also printed in ordinary black ink. The stimulus deck consisted of a total of 160 cards, of which 80 displayed the colour words printed in colours, each word occurring 16 times. The rest of the 80 cards displayed the same words in black ink. The scheme of the stimulus cards is presented in Table I.

TABLE I

Scheme of stimulus cards for the signal detection experiment

Colour word	Colour of the ink used to print the word					
	Red	Or-ange	Green	Blue	Violet	Black
Red	—	4	4	4	4	16
Orange	4	—	4	4	4	16
Green	4	4	—	4	4	16
Blue	4	4	4	—	4	16
Violet	4	4	4	4	—	16
Total	16	16	16	16	16	(80x2=160)

Rationale. The 160 stimulus cards, when presented in a randomised sequence, through the window of a tachistoscope, the subject was expected to call out the colour of the ink in which the words were printed disregarding the words themselves. For example if the card

displaying the word 'RED' printed in green ink appeared, the subject should call out 'green' and not 'RED'. Alternatively, if the same word 'RED' appeared in black, the subject should call out 'RED' and not 'black' as black was not one of the colours (signal) chosen. It was assumed here, that the signal (S) corresponded to the ink colour in which the word was printed. The noise (N) was the strong perceptual habit of immediately responding to the word and its meaning by calling out the word. It was reasonable to suppose that such habit was sufficiently strong in the case of adults, and it masked the experimental task of calling out the ink colour (Signal). Thus, the stimulus cards displaying colour words printed in ink colours other than black corresponded to the condition in which Signal and Noise were both simultaneously present (SN). On the other hand the cards displaying the words printed in black corresponded to the condition in which Noise alone was present (N).

The experiment required a complete run of the 160 cards in a predetermined sequence not known to the subject. It is to be noted that the apriori probabilities of either SN or N occurring on any given trial was present to be equal i. e., $P(SN) = P(N)$.

Procedure. Every subject in the two groups HA and LA, was brought to the laboratory and the experiment in signal detection was conducted. The stimulus cards were exposed through the conventional falling door

type of tachistoscope. The subjects were instructed to call out the presence or absence of signals (ink colour or the colour word). The four possible responses on any trial are presented in Table II.

TABLE II

Scheme of the possible responses on the signal detection task

Stimulus	Responses	
	S	N
Card displaying Colour of the word printed in ink called (hit) one of the 4 chosen colours (SN)	Colour of the word printed in ink called (hit)	The word is called (miss)
Card displaying Colour of the word printed in ink 'black' (N)	ink 'black' called (false alarm)	The word is called (correct rejection)

Anticipating a possibility of colour confusion in the subjects they were made to familiarise themselves with the colours before starting the experiment. Care was also taken to ensure that none of the subjects had colour blindness. At the end of the run of 160 cards, the frequencies of each type of responses (shown in table II) were counted and recorded. From the proportions of $P(s/SN)$ and $P(s/N)$ (hits and false alarms) the measures of d' and β were computed for each subject. The proportion of correct responses over all trials was calculated by the formula, $P(CR) = P(s/SN) \times P(SN) + P(n/N) \times P(N)$ (D' Amato, 1970).

Results. The distribution parameters in respect of the anxiety

scores over the sample were, mean = 33.29 and S.D. = 2.29. The mean scores for the HA and LA groups were found to be significantly different. (Mean HA = 21.04; Mean LA = 47.80; $t = 17.5$ $df = 28$ $P < .01$).

Mean values of the TSD parameters for the subjects at two levels of anxiety are given in table III.

TABLE III

TSD Parameters mean values for HA and LA subjects

TSD Parameters	LA	HA	$t(df=28)$	p
d'	3.100	2.010	3.86	.01
β	1.250	3.580	2.60	.01
$P(CR)$	0.956	0.796	5.40	.01

The two groups differed significantly on all the parameters consistent with the predictions.

Discussion. It may be said that the results of this study lend support to the hypotheses set up. It was the main concern of the study to measure the changes in the values of the TSD parameters when the level of anxiety was varied. Extensive research done by Broadbent and his followers on the decision making process and the effects of noise and stress on human performance has brought better insights into the working of the response system. We are told that stress or motivational states affect the probability of the selection of information for passage

through the channel without the mediation of the filter mechanism. Further, it is stated that under conditions of stress the system responds with an increased facility for task irrelevant behaviour.

The hypotheses set up for experimental test are offshoots of the theoretical formulations along these lines. Let us examine the hypotheses one by one.

The first hypothesis predicts a reduction in the sensitivity due to anxiety. The measure of sensitivity d' is an index of detectability of the signals. Greater the value of d' greater is the sensitivity. It involves the sensory apparatus and the ability to discriminate effects arising from the two stimuli which are close together on the stimulus dimension (SN and N). the theoretical position is that noise or stress affects the performance causing filtering of inputs to be stricter, which means a reduction in the sensitivity of the sensory apparatus, discriminating the stimuli. If all this is true, we can expect the mean values of d' to be significantly high for the LA group than for the HA group. The results (table III) support such an expectation.

That anxiety affects the magnitude of the central neural effect generated by the two stimuli (SN and N) presented, and tends to increase the critical value adopted by the subjects in making decisions is also substantiated by the obtained results. We may state that the central neural effect in response to stimuli will be

larger for HA subjects than for the subjects in the LA group. The nervous system is expected to solve the problem of detecting the signals, by employing a higher critical value so that the false alarm rate is higher. This is because anxiety acting as a stress introduces severe filtering, even to the point of excluding relevant information about the stimuli. This critical value, is a likelihood ratio of the probabilities of an event under two hypotheses. It will give information as to whether an observed magnitude of central neural effect came from ESN (neural effect due to SN) distribution rather than from the distribution of EN (neural effect due to N). The values of β are as predicted. According to the TSD, the optimal β under conditions of equal probability of SN and N is 1. It is interesting to note that the LA group has selected a response criterion around 1 (1.250).

The third hypothesis refers to the proportion of hits achieved over all the trials in a signal detection task. It is an index of efficiency of human observers making decisions. It was predicted that anxiety reduces this efficiency as a source of stress on the response system. The values of P (CR) support this prediction and the statistical comparison was reliable ($t=5.40$; $df=28$; $P<.01$). The results of this study have provided significant evidence in support of TSD methodology as a useful and sophisticated model for personality research.

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PREFERENTIAL ASSESSMENT OF NURSING ACTIVITIES BY PATIENTS AND NURSING OFFICERS

R. P. GAUTAM

A list of 30 nursing activities was individually given to 50 patients and 25 nursing officers of Command Hospital, Southern Command, PUNE and College of Nursing, PUNE to rate each activity along with a 3 point rating scale. Findings reveal a high degree of agreement between the patients and the nursing officers on the relative importance of all the nursing activities implying thereby a congenial social climate providing adequate mental contentment to all concerned. Nursing activities considered most important and relatively least important by both the groups are also noted.

Patients' general satisfaction during their stay in the hospital will largely depend upon the correct assessment of their needs and urges by the nurses. Besides, the extent of agreement between these two groups ascribing importance to different nursing activities will be an inevitable variable in conducting a congenial social climate in the hospital on the whole. Thus, we can infer patients' state of mind and psychological atmosphere prevailing in a hospital by studying the coordination between patients' and nurses preferences for the nursing activities.

A few researches have been reported pertaining to patients' opinions and preferences about various aspects of nursing care (Wilder 1952, Wright 1954). The most extensive studies of this nature were, however, conducted by Abdellah and Levine (1958), Whiting (1958), and White (1972). Most of these studies conclude that patients' satisfaction with

nursing care may increase many-fold if there is adequate agreement between the patients and nurses in their concept of what is more/less important for a sick person. The aim of the present study is to ascertain the extent of such an agreement/disagreement between them so that a scientific assessment can be made of the existing nursing care in our military hospitals.

Sample : The study was conducted on two groups of patients and nurses respectively. Fifty patients were randomly selected from the register of O.I./CMI (Medical Inspection) Room of Command Hospital, Southern Command, PUNE. All the patients shown in the register as admitted during a week were taken as the population for the aforesaid sample.

Similarly, a group of 25 nurses was randomly selected by lottery method from nursing officers of com-

TABLE I

Showing the number, age and education of the sample

		Mean age	Age-range	Education range
Patients	8 Officers & 420 Rs.	30.28	19-52	VII to B.A.
Nurses	10 Officers & 15 Cadets	20.88	19-27	X to B.Sc.

mand Hospital and the nursing cadets of Nursing College PUNE. The composition of both the groups is given in the table I.

Method—An exhaustive list of common nursing activities was prepared. This was tried out on small groups of patients and nurses separately. Keeping in view their reactions, a list of 30 nursing activities was finally prepared. The same is given in Table III.

Data collection—The above mentioned list of nursing activities was individually given to the patients and nurses separately. The patients were requested to rate every nursing activity in terms of its importance to them along a three point rating scale. In other words, if the patient thinks that a particular nursing activity is most important to him, he should write numeral—1 against it. Conversely, if he thought that a nursing activity was comparatively least important to him, he should write 3 against it. Similarly, if he felt a nursing activity somewhere between most important and least important or he was not definite about its importance, he should write 2 against such an

activity. Likewise, the nurses were also requested to rate each nursing activity along a three point scale to indicate the importance, they attached to every nursing activity in their routine nursing care.

Every list also contained columns for personal particulars like, age, education and rank. Each one of the patients and nurses was requested to fill in these columns. It is worth-mentioning here that the author was on the staff of AFMC PUNE to which the Command Hospital is attached for teaching purposes. Hence there was adequate rapport with the nurses and the patients and it can be reasonably inferred that the respondents gave their responses without any inhibition.

Result—For each of the patients and the nurses, an individual importance score was obtained by totalling his/her scores on all the 30 nursing activities. Then a group importance score was found for both the groups of patients and nurses separately by adding up all the individual scores together. The same are given in the Table II.

TABLE II

Showing mean group 'importance scores'

	Patients	Nurses
Mean group importance score	47.38	48.16
Range of importance scores	35-57 (23)	34-59 (26)

Similarly, an importance score was also calculated for each nursing activity. All the scores on an activity received from the patients/nurses were totalled together separately. Thus, each nursing activity obtained two importance scores—one for the patients and other for the nurses. The average scores are given in the following table.

TABLE III

Showing the average nursing activity-importance scores for patients and nurses separately

Sr. No.	Nursing activities	Average Importance Scores		Average Disagreement Score
		Patients	Nurses	
1.	Providing prescribed medication at scheduled times	1.04	1.16	0.12
2.	Providing things of daily necessities	1.56	1.48	0.08
3.	To enquire of medical complaints	1.24	1.44	0.20
4.	To supervise cooking	2.04	2.20	0.16
5.	To attend to call without delay	1.40	1.24	0.16
6.	To notice changes in their health	1.52	1.12	0.40
7.	Assisting in personal cleanliness	1.80	1.68	0.12
8.	To see that the ward is neat and clean	1.20	1.80	0.60
9.	Assisting in moving about	2.00	2.36	0.36
10.	To see that the patients have taken meals	1.52	1.32	0.20
11.	To see that the bed is made properly	1.32	1.52	0.20
12.	Getting the report of the investigations expedited	1.52	1.32	0.20
13.	Fixing the date and time for investigations	1.68	1.92	0.24
14.	Taking temperature, blood pressure etc. regularly	1.32	1.20	0.12
15.	To see that food is served in time	1.66	1.76	0.20
16.	To see that utensils are clean	1.32	1.76	0.44
17.	Giving prior information regarding investigations	1.60	1.76	0.16
18.	To keep happy by pleasant talks	1.32	1.64	0.32

Sr. No.	Nursing activities	Average Importance—Scores		Average Disagreement Score
		Patients	Nurses	
19.	Visiting more frequently	1.92	1.84	0.08
20.	To show sympathy and concern for illness	1.38	1.36	0.08
21.	To make patients feel that she is happy to help them	1.36	1.56	0.20
22.	To enquire of family welfare	2.24	2.08	0.16
23.	To enquire of family liabilities and personal problems	2.00	1.92	0.28
24.	To arrange recreation	2.12	1.84	0.28
25.	To show understanding for patients' over demanding behaviour	1.92	1.84	0.44
26.	To explain her difficulties whenever unable to fulfil patients' needs	1.64	1.64	.00
27.	To console the worried	1.40	1.24	0.15
28.	To receive visitors courtiously	1.80	1.80	.00
29.	To listen to patients quietly at times	1.80	1.80	.00
30.	To prepare the patients mentally for investigations	1.60	1.52	0.08

Discussion of Results.—It is evident from the Table I that the difference between the group importance scores of patients and nursing officers is only .28. This implies that the total value that both the groups attached to the set of nursing activities is almost equal. In other words both the patients and nursing officers as groups do not differ in their concept of importance pertaining to nursing care. It reveals that the nursing officers in the hospital concerned have correct assessment of their patients needs, problems and emotions.

Table I also reveals the range of

importance-scores for both the groups. The same is .23 for patients while .26 for nurses. This slightly higher range for nurses as compared to that of patients can be largely explained in terms of size and composition of their group which consisted of only 25 nurses, 15 of them being trainees and 10 full fledged officers.

Table III displays average importance scores for each nursing activity as given by the patients and nurses separately. As per rating scale, average importance score for an activity would range from 1 to 3. Hence all the scores fall between 1 and 3, with no nursing activity, securing 1 and 3

scores (minimum and maximum respectively) from either of the two groups.

It is also evident from the same table that the differences between importance scores of patients and the nursing officers for most of the nursing activities are very narrow. Largest differences are seen on nursing activities serial No. 8 and 28 only. But these difference are also not significant statistically at .01 or .05 levels implying thereby that no real difference exists between the two groups. On the other hand, complete agreement is seen on nursing activities serials Nos. 26 and 29. It is noteworthy here that both these nursing activities are of great psychological significance. Complete agreement between the patients and nursing officers on such psychological activities clearly shows that the latter possess adequate psychological orientation in their approach towards the patients.

Rest of the activities fall between these two extremes. These results go to prove beyond doubt that the nursing officers included in the present study have correct knowledge of their patients's medical and psychological necessities.

The same table also reveals that the patients have attached maximum importance to nursing activity No. 1 while the nursing officers consider the activity No. 6 as the most important. The slight difference between the patients and the nursing officers on both these activities can

be adequately understood in view of different roles they play in the hospital.

Similarly, the patients perceive the nursing officers think that the activity No. 4 carries least value in their opinion. The differences are again here only marginal between the two groups. However, these can also be explained in terms of the patients being more occupied with themselves and the nursing officers being more oriented towards their specialized profession.

Conclusion—The study reveals that there is high degree of agreement between the patients and the nursing officers on relative importance of various nursing activities. It can be reasonably inferred that the patients had adequate satisfaction during their hospitalization due to proper orientation and awareness on the part of nursing officers. Further research can be made to obtain a comparative assessment of patients' satisfaction in military and civil hospitals.

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16 P. F. STUDY IN THE CASES OF MARITAL DISHARMONY

S. B. SINGH, ASHA NIGAM AND N. K. SAXENA

In the present study, it has been tried to study the personality characteristics of the couples having marital disharmony with the help of 16 factor personality questionnaire. The experimental group has been compared with the control group. Normal husbands differ significantly from the husbands having marital disharmony on factors—I, O, and Q 4. There is no difference between the wives of both the groups. Normal husbands and wives differ significantly on factors B, C, L, O, Q 3 & Q 4. Husbands and wives having marital disharmony differ on factors I, Q 1 & Q 3. The result of this study indicates that it is not the dissimilarity of the traits but the similarity which may be responsible for marital disharmony.

The literature regarding marital happiness and divorce suggests that there is higher trend of divorce and desertion in western countries. Reasons attributed to this may be many. But in Indian culture figure may be relatively low most probably because of our deep rooted cultural tradition. But this is fact that the increasing trend is apparent in our country also. It indicates that marital disharmony is increasing.

There are lot of studies pertaining to marital disharmony but most of them are sociological in nature. A psychologist looks for inadequate personalities as the source of marital difficulties. Mudd (1952) presented this perspective several years ago in a conference on divorce that most

prevalent reason for divorce is the lack of maturity of one or both partners. Emotionally speaking they are children. Psychoanalytic writing provides a major variant in psychological personality malformation dating from early experience in the family. Many attempts have been made to find out the factors that contribute to success or failure in marriage. Corsini (1956), Lindzey and Urban (1954), Richardson (1939) have found positive correlations between marriage partners in personality variable such as dominance. In contrast many others suggest that people are attracted to those with personalities complimentary to their own. Winch (1955) and Winch et al (1955) have supported the view that people with dominant needs

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tend to be married to people with submissive needs. Leary (1957) has stated that an individual seeks to interact with those whose behaviour is reciprocal to his. Kerchoff and Davis (1962) and Altrocchi (1959) have also supported the theory of complimentary needs in mate selection.

The present study is an attempt to find out the personality traits responsible for success or failure in married life.

Material and Method—The sample consist of 20 couples reporting marital disharmony and 20 couples having happy married life from the normal population. All the persons were administered Kapoor Hindi form of Cattell's (1957) 16 Personality Questionnaire. Group having marital disharmony had average age of 37.5 and 34 for husband and wife respectively. Socio-economic status according to B. Kuppaswamy scale (1962) was as below.

S. E. S.			
	I	II	III
G ¹	12	5	3
G ²	9	8	3

Result—Results obtained are presented in table No. I, II, III & IV

Discussion. On the basis of the results it is obvious that there is highly significant difference between the husbands of experimental and normal group on factor I. I+ person is associated with over protected and in some cases more fastidiously cultured homes, as well as with over ripe cultures, infact with a pattern best described as "protected emotional sensitivity". I+ individuals receive significantly more descriptions as fussing, slowing up group performance in arriving at decisions and making social-emotional negative remarks. Husbands from group of marital disharmony have scored higher on factor, O which is one of the important factors in anxiety. Neurotics also score high on this factor. In group dynamics high O persons do not feel accepted or free to participate. Q4+ indicates that these persons are tense and excitable. There is no difference between the wives of both the groups indicating that most probably responsibility is more of husbands than of wives in leading a successful married life. Normal wife and husband differ significantly on 6 out of 16 factors. Couples having marital problem differ only on 3 factors

The finding of this study is indicative of the fact that husbands and wives having similar traits of personality may not pull on happily. It seems that complimentary traits of personality in each spouse may be contributory factors for happy married life.

Many researches have been done

TABLE I showing comparison between the husbands of both the groups.

Factors	Means	SD	SED	t	Level of significance
	5.05	4.65	1.52	.4864	.82 N.S.
	5.50	5.35	2.33	.7456	.201 N.S.
	5.20	4.00	1.94	.6208	1.93 N.S.
	5.85	4.65	2.12	.6784	1.77 N.S.
	4.45	3.65	2.03	.6496	1.23 N.S.
	6.40	6.75	1.97	.6304	.56 N.S.
	6.25	5.60	2.14	.6845	.95 N.S.
	5.50	7.90	2.42	.7744	3.09 0.01
	6.50	6.50	2.01	.6432	0 N.S.
	4.70	5.70	2.32	.7424	1.33 N.S.
	5.65	6.75	2.26	.7232	.138 N.S.
	4.65	6.05	1.75	.5600	2.5 0.02
	5.10	5.35	1.77	.5664	.441 N.S.
	5.70	5.75	1.69	.5408	.093 N.S.
	6.05	5.80	1.48	.4736	.53 N.S.
	4.00	5.55	1.85	.5920	2.62 0.02

TABLE II

showing comparison between the wives of both the groups.

Factors	Means	SD	SED	t	Level of significance
	3.90	4.65	1.32	.4224	1.78 N.S.
	3.15	2.60	2.18	.6976	.65 N.S.
	3.70	3.60	1.66	.5312	.19 N.S.
	5.75	5.65	1.78	.5696	.176 N.S.
	4.55	3.45	1.65	.5280	2.08 N.S.
	6.20	5.95	1.83	.5856	.413 N.S.
	6.10	5.60	1.35	.4320	1.13 N.S.
	5.10	6.00	1.89	.6048	1.49 N.S.
	7.25	7.55	2.20	.704	.43 N.S.
	4.75	5.55	1.85	.5920	1.35 N.S.
	5.05	5.80	1.86	.5952	1.26 N.S.
	6.30	6.65	2.07	.6624	.528 N.S.
	6.15	6.85	1.66	.5312	1.32 N.S.
	5.85	6.55	1.75	.5600	2.32 N.S.
	4.60	4.35	1.40	.448	.513 N.S.
	5.50	6.05	1.85	.5920	.93 N.S.

TABLE III showing the comparison between the wife and husband of experimental group.

Factors	Means		SD	SED	t	Level of significance
A	3.90	5.05	1.37	.5394	2.13	
B	3.15	5.40	1.85	.5920	3.97	N.S.
C	3.70	5.20	1.61	.5152	2.91	0.01
E	5.75	5.85	1.80	.5760	.173	0.01
F	4.55	4.55	1.83	.5856	.17	N.S.
G	6.20	6.40	2.00	.6400	.301	N.S.
H	6.10	6.25	1.64	.5248	.29	N.S.
I	6.10	5.50	2.00	.64	.63	N.S.
L	7.25	6.50	1.94	.6208	2.82	N.S.
M	4.75	4.70	2.12	.6784	.073	0.01
N	5.05	5.65	1.88	.6016	.99	N.S.
O	6.30	4.65	1.44	.4608	3.58	N.S.
Q1	6.15	5.10	1.45	.4640	2.26	0.01
Q2	5.85	5.70	1.87	.5984	.25	N.S.
Q3	4.60	6.05	1.25	.4000	3.63	N.S.
Q4	5.50	4.00	1.77	.5664	2.65	0.01 Q.02

TABLE IV showing comparison between the husband and wife of normal group.

Factors	Means		SD	SED	t	Level of significance
A	4.65	4.65	1.47	.4704	0	N.S.
B	3.60	5.35	2.31	.7392	2.36	N.S.
C	3.60	4.00	1.99	.628	.63	N.S.
E	5.65	4.65	2.34	.6528	1.53	N.S.
F	3.45	3.65	1.86	.5952	.34	N.S.
G	5.95	6.75	1.86	.5952	1.34	N.S.
H	5.60	5.60	1.95	.6240	.9	N.S.
I	6.00	7.90	2.33	.7456	2.55	0.02
L	7.5	6.50	2.27	.7464	1.41	N.S.
M	5.55	5.70	2.08	.6656	.240	N.S.
N	5.80	5.75	2.24	.7168	.07	N.S.
O	6.65	6.05	2.51	.8032	.747	N.S.
Q1	6.85	5.35	1.94	.6208	2.2	0.02
Q2	6.55	5.75	1.55	.4960	1.61	N.S.
Q3	4.35	5.80	1.61	.5152	2.82	0.01
Q4	6.05	5.55	1.92	.6146	.822	N.S.

to explore factors related to success in marriage. Terman (1938) and Locke (1951) have reported that unfavourable childhood experiences have an important bearing upon later marital happiness. Johanson and Terman (1935) found that the typical happily married man was most kindly and tolerant of all groups studied and the least neurotic.

The findings of this study are in conformity with findings of other workers in the field. It supports the theory of complementary needs. Others have concluded that successfully married couples are more alike. But it seems that the theory of "like to seek like" in addition to personality takes several other factors into consideration. Ellis and Abarbanel (1961) have reported that love is most likely to occur between the men and women who are (A) in each others field of eligibles and (B) who have similar values, interest and tasks but (C) whose need patterns are complimentary rather than similar. Cattell (1965) has also reported that a marriage may survive one member being extravagant when it could not survive two. The lack of any substantial positive correlation on the C source trait, ego strength, or emotional stability suggest similarly that an unstable person may unconsciously seek out a more stable one on whom to lean. Cattell (1965) further reports that if one person is high on the L factors of protension the other tends to be low on this

trait presumably because no marriage could last with two protensive people.

Our findings support this assumption and suggest that couples who differ significantly on factors B, (intelligences) C (emotional stability) L (Protension), O (Guilt proneness and insecurity), Q3 (self sentiment formation) and Q 4 (ergictension) may lead more happy married life in comparison to those who do not.

It seems that difficulties reside in the neurotic personality not in the marital situation. Terman (1938) reports that a large proportion of incompatible marriages are so because of a predisposition to unhappiness in one or both of the spouses. Such type of persons would be incapable of finding happiness in any marriages. This has also been confirmed by Ellis and Abarbanel (1961). It is true that if one analyses the population of divorced persons at any given time a disproportionate amount of emotional pathologies is found. Thus the death rate, the suicide rate and illness rate are all higher among divorced persons than they are among either the widowed or the married. It is also reported that divorced rate is higher in remarried divorced person than that of married. Present investigation along with other supporting studies suggests that personality is perhaps most crucial factor in marital adjustment and spouses having complimentary traits are likely to lead more happy married life.

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CLINICAL PSYCHOLOGY IN INDIA / NEED FOR A NEW PERSPECTIVE

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Clinical psychology occupies an important place as a sub-speciality in psychology. In India this fact has been well recognised. Since 1955 when the first training programme leading to a post-graduate diploma was started this training had been supported by Government scholarships. This was long before Indian Council of Social Science Research had come into existence for supporting research in social sciences, and long before University Grants Commission's fellowship scheme had come into existence. Today there are three institutions where advanced training in clinical psychology which leads to a Diploma in Medical and social psychology is given. These are the following :

Name of the Institution	Year in which Diploma started
All India Institute of Mental Health (Bangalore)	1955
Hospital for Mental Diseases (Ranchi)	1962
B.M. Institute of Mental Health (Ahmedabad)	1973

It is estimated that there are

about 300 clinical psychologists in the country (Prabhu, 1975).

Clinical psychology is offered at M. A. level as a compulsory paper in two universities and as an optional paper in twenty three universities out of forty two universities for which the information is available. (Ramalingaswami, 1975). In addition to being a popular subject for teaching at M. A. level it is also a popular subject for research. The trend report on clinical psychology by Krishnan in ICSSR's Survey (ICSSR, 1972) contains 580 references the largest number to be given after any of the trend reports.

Clinical psychology has its own All India Association "The Indian Association of Clinical Psychologists" which started in 1968, and a journal published by the association "The Indian Journal of Clinical Psychology" which came into existence from 1974. The association of clinical psychologists has so far organised five conventions. Thus all the outward signs of growth are there.

It is time to take a close look at this speciality and ask a few pertinent questions. What has been the contribution of clinical psychology (1) in

its own area? (2) to the broad field of psychology in India (3) to the speciality of psychiatry in India and lastly (4) its impact on the medical care system.

As far as clinical psychology in India is concerned the outward signs of growth are there. But if one takes a close look at this speciality then one realises that there had been no growth in the academic sense of the term. The first and the most important work that is expected of a clinical psychologist is that he does a proper evaluation of personality for diagnostic purposes and depending on the type of job, he may have additional responsibilities in teaching or research. The standard tests that are used are individual intelligence scales, the two projective tests i. e. the Rorschach and TAT and any other tests as the situation might require. Psycho diagnostic tests that have been properly developed and adequately standardised in Indian conditions are not there. Krishnan (1972) in his trend report points out the urgent need for the standardisation of psycho-diagnostic tools under local conditions. The necessity for proper standardisation of psychological tests and the factors that influence them in our culture and the problems one faces while standardising have been discussed adequately by the author elsewhere (Ramaligaswami, 1975).

What is the implication of this? It puts the clinical psychologist in an uncomfortable position. Although by experience and intuition he may be able to carry on with his work the most

important aspect of his job requirements is thus subject to criticism because it cannot be accepted as scientific. Thus the basic requirement in clinical psychology is not fulfilled despite the outward signs of growth of clinical psychology.

As far as research is concerned in spite of the voluminous research for which the extensive bibliography stands witness, there is no doubt that the quality of research needs to be improved. The handicap of not having the right type of instruments is very much there. But in addition the design of research needs improvement. For instance at the Fifth All India Convention of Clinical Psychologists in 1974 a paper "Suicide in a remote village in Karnataka" was based just on police records. In another paper "Time estimation of Chambal valley criminals" the sample consisted of dacoits in jails and controls were prisoners convicted on murder charges. Any number of such examples can be given. The output of research by clinical psychologists is not much. Prabhu (1972) admits "it is microscopic", and that microscopic research is of doubtful quality. As far as the voluminous research in clinical psychology is concerned as the bibliography at the trend report reveals a large part of it is by psychologists working in Universities and by psychiatrists. Incidentally the trend report itself was written by a professor of psychology.

What has been the contribution of clinical psychology to the main

of psychology? The answer at it has been in the negative. This is because of the lacuna in testing which has been discussed earlier. In an applied field of clinical psychology this lacuna is a major weakness which questions the credibility of clinical psychology in a direct way and, that of the broad field of psychology in an indirect way. In spite of the twenty five universities which are offering clinical psychology there is not that close cooperation and collaboration between the departments of psychology in the universities and the clinical psychologists to work on problems of mutual interest such as psychodiagnostic testing and development of personality theories. This is not to say that there is absolutely no collaboration but the collaboration is not to the extent desirable.

That all is not well within the field of psychology is now very evident. Since 1970 the need for reorientation of research towards problems of social change is increasingly realised. There have been suggestions in many of the trend reports in ICSSR's Survey spotlighting some of the problems that need attention (ICSSR 1972, 1973). Clinical psychology because of its orientation should have very much concerned itself with socio-economic, cultural factors influencing the individual (these are the factors which contribute to social change at group level) and these factors are to a large extent neglected by the clinical psychologists in India. According to

the list of problems suggested for immediate attention in the Trend Report on Clinical Psychology in ICSSR's Survey is "A Study of the role of socio-economic, ecological, genetic and cultural factors on the incidence of mental disorders". This in itself is an indication of the neglect of these factors. Clinical psychologists because of the orientation in their speciality should have focussed attention on the social and economic factors. They should have thus set the pace for the study of the problems of social change for the others in the field of psychology.

What is the contribution of clinical psychology to the field of psychiatry? The clinical psychologist is an important member of the psychiatric team. He is trained in the same institution as the psychiatrists. His role is quite well defined as that of one who does the psycho-diagnostic testing and help in the treatment of the patient. However, because of the inherent weaknesses of the psychological tests in India, his credibility is at stake and he is an important member of the psychiatric team but he is not an equal member. His role is that of a subordinate to the psychiatrist. A competent psychiatrist does feel that he understands the patient even without the help of psychological testing by clinical psychologists. He may have clinical psychologists in his team because it adds to his departmental set up but he makes it clear (either bluntly or subtly depending on his personality) that they are there at his pleasure. Can he be blamed?

Since the clinical psychologists work in a hospital it is quite relevant to raise the question of clinical psychology's impact on other areas in the medical care system. The answer is that there had been no impact made by clinical psychologists. This is because of some inherent handicaps which a clinical psychologist in India faces. Although there are psychiatric problems prevalent in India these are not our country's priority problems. The clinical psychologists are thus working in a secondary role in a speciality that is not the priority problem in health in India. I hasten to add here that there are some clinical psychologists who are working in the areas "rehabilitation, child guidance clinic and in a few neurology departments. But these also are in no way priority problems in the medical system. So it is to be accepted that as of today the clinical psychologists role is of a secondary nature.

What is the clinical psychologist to do about this. Is he going to be satisfied with his present role—which is a traditional role based on the western concept of a clinical psychologist as a psycho-diagnostician or a counsellor and a psychotherapist treating some of the few neurotic cases which he can handle (here again he cannot treat all the cases because he is not a physician). He has to redefine his role and broaden his base if he wants to be of relevance in the health care set up in the country.

That all is not well with this speciality is felt occasionally by some of the clinical psychologists themselves. Some attempts even if they are feeble are being made to discuss the problems facing clinical psychologists in India. One such is the workshop on "professional dilemma in psychological services of Delhi" organised by Delhi Association of Clinical Psychologists on 19-11-1972. Another is an article by Prabhu (1975). It is important to understand the present role played by the clinical psychologists before trying to understand the dilemma or talking of the training programmes or planning for a better and meaningful role.

We have already discussed the present role played by the clinical psychologists in India. The dilemma in clinical psychology in India is that of (1) playing a meaningful role and (2) well standardised techniques. About the techniques there are a few attempts to standardise tests used for clinical evaluation (Ramalingaswami 1975). The role has to be carefully thought out by the clinical psychologists themselves. The workshop on "Professional Dilemma in Psychological Services of Delhi" has completely missed this major dilemma.

The editorial by Prabhu (1975) misses this dilemma completely. Prabhu suggests (1) three year course (2) shifting the venue of training to independent school or departments with close collaboration with academic departments of psychology and other correctional and clinical institu-

tions. Just as there are schools of social work he suggests independent schools for training in clinical psychology. The question is in what way the shifting of the venue of training to independent schools or department for training clinical psychologists going to improve (1) the quality of the training of clinical psychologists and (2) the contribution of clinical psychology as a relevant social science. This suggestion if ever implemented will create more problems for the clinical psychologists — because there is a sort of an understanding of the mutual roles between the psychiatrists and clinical psychologists because they are trained as part of the same institution and this will be disturbed thus bringing out under-current role conflicts. He then raises the bogey of training a specialist or generalist. He advocates training a service oriented clinician at the DM & SP level (three year course for DMSP) and training for research and teaching at Ph. D level (another two year). He does not specify the curriculum for this three year period of training for DM & SP except that he advocates removing research and subjects like social work. Psychiatric social worker plays an important role in working up the case study of a patient and also many times in rehabilitation. A clinical psychologist who is being trained to be service oriented clinician should be aware of the psychiatric social work. The removal of social work in itself while not going to add to the quality of training might actually bring it down. This editorial itself is thus an exam-

ple for the confusion in thinking.

The basic issue is what is the role the clinical psychologists want to play. Are they going to be satisfied with playing a complementary role to psychiatrists and reconcile themselves to the fact that they will be working in a secondary position in an area that is not of primary importance in the priorities of the health care system in India. On the other hand if, the clinical psychologist want to make his presence felt he would have to think of his role seriously and he would have to re-define his role. He would have to broaden his base so that he could make meaningful contributions to research in other problems that crop up in hospital set up or in public health problems. He should be able to work as a member of a research team (if circumstances permit with himself as the principal investigator) on any important social science problems in health system. For this he would have to have a training programme that gives him the competence and confidence to tackle any type of research problem that comes upto him. For this he would require in addition to the training which he is already having an intensive course on research methodology, medical sociology applicable to Indian situation, organisation of health services, community health problems, and last but most important the present day social stratification prevailing in rural and urban settings and social change that is taking place in India. If they redefine their role with a broad base to work on any aspect of health they

would be making their speciality an important and relevant one and they will contribute to the growth of their own speciality as well as to that of the field of psychology and will have status and prestige of their own. The speciality will become meaningful in our set up.

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SOCIO-ECONOMIC STATUS AND ITS MEASUREMENT : SOME EXPERIMENTS WITH KUPPUSWAMY'S SCALE

B. C. KHANNA AND S. K. VERMA

Kuppuswamy's SES Scale (Urban) was tried with urban as well as with total clinic population. The three parameters of SES, namely income, occupation and education showed almost similar sets of correlations, amongst themselves, as well as with the total SES score obtained. Although the population was different from the one on which it was originally standardized, these experiments do suggest the utility of the scale even in the total clinic population in Chandigarh, at least till a more suitable scale for such a population is devised and standardized.

Kuppuswamy's SES scale had been standardized "primarily for use in socio-economic investigations in urban parts of India" (Kuppuswamy, 1962), although it was originally standardized in only one of the states (Mysore) of India. This is one of the most widely used scale in India for the purpose. However, recently some doubts have been expressed by the research workers about its utility or validity in other parts of the country. Thus, there is a need to study the utility of the present scale in different parts of India. It is for this purpose that some experiments were planned with the clinic population in Chandigarh.

- (a) to study the inter-correlations amongst the three parameters used by Kuppuswamy, viz., income, occupation and education;

- (b) to study the extent to which each of the three factors contribute to the total score; and
- (c) to study if there are any significant differences if the scale is applied to the total clinic population, instead of the urban clinic population only.

A. The three parameters (Income Occupation and Education) :

These three criteria are most often selected, sometimes separately some times combined, as indicators of one's socio-economic class, particularly in the epidemiological studies (Khanna, 1971; Verma and Khanna, 1976). However, in many such studies the sub-categories used under each parameter, are different. The weightage given is also different. In none of these studies however,

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A. The three parameters (Income Occupation and Education) :

These three criteria are most often selected, sometimes separately some times combined, as indicators of one's socio-economic class, particularly in the epidemiological studies (Khanna, 1971; Verma and Khanna, 1976). However, in many such studies the sub-categories used under each parameter, are different. The weightage given is also different. In none of these studies however,

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an attempt was made to justify, the particular system chosen with regard to the weightage, none attempted to find out the inter correlations amongst the various parameters in their populations. This makes any worthwhile cross comparisons, extremely difficult.

In the present study, all the patients attending the adult psychiatric clinic of Nehru Hospital, Chandigarh, between the period 1969 and 1970, coming from urban areas, were taken. There were 1099 such cases. The intercorrelation between income and occupation was found as .58; between income and education as .35 and between education and occupation as .52. The categories used here were the same as used in Kuppuswamy's scale (Kuppuswamy, 1962). Although positive and significant, each of these three factors is thus, more or less independent of the other two, in no case the overlap is greater than 34% (i.e. $.58^2 \times 100$). Occupation shows slightly higher sets of correlations, as compared to the other two factors.

B. Total SES Score : Each of the three factors (income, occupation and education) showed higher sets of correlations with the total SES score, when combined, using Kuppuswamy's weighted scores (Kuppuswamy, 1962). These were .69 with occupation and .63 both with income and education. This probably shows that although the three factors used here are intercorrelating, the total SES score is a better representation of the three factors together, than the respective

separate scores. This impression is further confirmed by the multiple correlations of the three factors with the total SES score taken as the criterion.

The multiple correlations were found to be between .74 and .76 when any 2 factors were used but when all the three factors were taken into consideration, this rose to .80 (Pooling square method of Multiple R was used), which shows that a significant level of socio-economic stratification has been achieved, when Kuppuswamy's SES scale is used in the Chandigarh adult, urban, psychiatric clinic population.

TABLE I

A comparison of correlations in the Urban and Total Clinic Population

I. Intercorrelations among the three factors :

	CLINIC POPULATION	
	Urban (N=1909)	Total (N=2322)
Income vs. Occupation	.58	.62
Income vs. Education	.36	.50
Education vs. Occupation	.52	.53

II. SES Score and the three factors :

SES vs. Occupation	.69	.70
SES vs. Income	.63	.67
SES vs. Education	.63	.65

III. Multiple correlation :

*Rc. 1 2 3	.80	.80
Rc. 1 2	.74	.76
Rc. 1 3	.76	.77
Rc. 2 3	.76	.76

*C=Total SES 1=Occupation 2=Income
3=Education R=Multiple correlation.

C. Total clinic population and the Kuppuswamy's SES scale :

Table I shows that when the total clinic population (N=2322) for the years 1969 and 1970 were taken, even then, the similar sets of inter-correlations and multiple correlations etc. were obtained, as where only urban population is considered.

Conclusions : In summary, then, one can say that in the adult psychiatric clinic population : (a) All the three factors, income, education and occupation were found to be related in some way but not considerably (none beyond 34%) ; (b) all the three factors were found contributing something to the total SES scores as obtained by using Kuppuswamy's SES scale ; (c) the sets of correlations obtained on urban clinic population are perhaps not too different from the ones obtained on total clinic population. This suggests, though it would require confirmation through other studies, that perhaps Kuppuswamy's SES scale can be extended to the total clinic population in Chandigarh as well. This scale may

not be the ideal one, but can well be used till a better instrument is devised for such purpose and population. There is a need for similar studies from other parts of India also.

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INDIAN PSYCHOLOGICAL ABSTRACT

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SOCIO-ECONOMIC STATUS AND ITS MEASUREMENT : A CRITICAL EVALUATION

S. K. VERMA AND B. C. KHANNA

A number of attempts, both in India and in the West have been made to measure SES for their population. Although considered a reality and a useful concept, upto date no universally applicable and acceptable formula has been devised so far. Some such attempts have been critically reviewed in the present article.

Most social scientists now agree that class in the modern world is a reality (Wrightstone et al, 1964. Brown 1970; Kuppaswamy 1962). Each society has a class structure consisting of a number of statuses and roles. These statuses can be arranged in a rank order in terms of their prestige value for the group. The social statuses exist in the minds of the men and are reflected in their attitudes towards them. In some societies rigid systems exist that determine one's class. There is practically no mobility from one status or one class to another. These are designated as *closed* societies. On the other hand there are societies where the social status has to be achieved. There is great scope for mobility. These societies are designated as *open* societies. Whether a society is open or closed, there is always found a hierarchy of positions in every society. Determination of the social status consists in quanti-

fication of the position of a particular social being along the coordinates of social measurements. It is desirable here to emphasize again the important assumptions on which such measurements are based. They are :

- i) There is a class structure in the society.
- ii) There is a rank order of social classes. This social class structure becomes more complex with increasing complexity in technological and economic structure.
- iii) The number and nature of classes necessary for describing the class structure of any society depends upon the size, geographical location and the technological and economic conditions of the community.
- iv) The status positions are deter-

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are 50 questions classified into several categories of children's facilities, economic status of family, cultural activities, social status, occupational status, educational background of parents.

Kerr-Remmers American Home Scale : This again is a questionnaire which can be answered by pupils of VI grade or above. The 50 items are classified into cultural, aesthetic, economic and miscellaneous section. Chapin (1929) developed a living room scale. One part of Chapin's Scale is a checklist of possessions. Scales developed by Chapin (1929) and Sewell (1950) are also widely used in America. Sewell's scale has also been restandardized by Belcher (1951).

Another factor is the percentage of income spent on food, shelter and clothing. Warner & Lunt (1941 in Brown 1970) report that as we go from lowest to highest class, the percentage of income spent on these gradually goes down from 75% to 33%.

INDIAN STUDIES : The following scales of socio-economic status are in use in India.

1. *Kuppuswamy's scale (1962)* : This scale is based on work done in Mysore state and was standardized primarily for use in the socio-economic investigations in urban parts of India. The variables education, occupation and income were selected for this scale. The social classes were divided into 5 groups. Each variable was scaled on a 7 point scale.

The weightage given to various categories in respect to education is from 7 to 1 in the descending order; in respect to occupation the weightage to the upper most category is changed from 7 to 10 and in respect to income, the change in weightage involves the upper three from 7-12; 6-10 and 5-6.

Several methods were used to test the validity of the scale. These methods were (1) Matching against outside criterion (2) distribution pattern and (3) comparison of dichotomous groups.

2. *Pareek and Trivedi's SES Scale (Rural, 1964)* : This scale can be used to measure the SES of rural families. The scale was primarily standardized in the villages near Delhi. The scale consists of 9 main items—caste, occupation, education, social participation, land, house, farm, powers, material possessions, and family.

After the information is collected, it is scored and calculations are made to obtain the total score received by the family. The social status is classified into 5 classes. The reliability and validity of the scale has been reported to be high.

3. A method including consideration of education, income, caste and occupation has been evolved by the statistical section of I.C.M.R. In this method appropriate scores are chosen for different subgroups and depending upon the total score in all the 4 aspects, the socio-economic

status can be worked out. According to the total score, the SES is divided into 5 classes.

4. Another scheme of socio-economic classification in the I.C.M.R. studies on the growth and development of Indian infants and children. In this method, the various occupations were grouped into 6 broad socio-economic divisions. Family income has been the other important consideration in allocating the family to any particular socio-economic group. In the case of joint families, each earning member with his own family and other dependents is treated as independent family unit.

In class I are included all individuals who have a steady and assured income of over Rs. 1000/- p.m. All Govt. officials, defence service personnel, industrial magnates, professional people, artists and others having an income of Rs. 1000/- and above come in this class.

In class II are included all the younger members from the various occupational categories of class I whose income ranges between Rs. 500 to Rs. 1000/- p.m. This section of community generally represents the upper middle classes of Indian society.

In class III are included those whose monthly income ranges between Rs. 200 and 500. This segment comprises the lower middle class families in the country. The following occupational categories are included : junior members in the

gazetted ranks of Govt. services and other non gazetted employees, junior members in the various professions who have just started their careers, teachers in schools and colleges, employees in non govt. services, members in the various trades and army personnels within the income bracket of Rs. 200 to 500.

In class IV are included all persons with income less than Rs. 200/- P.M. but for whose employment certain basic educational qualifications are imperative. The occupations under this group are all clerical staff, inspectors, teachers, tax-collectors, mechanics, technicians, cashiers, commercial artists, telephone operators, telegraphists, compounders, nurses, vaccinators, supervisors and all other allied workers.

In class V are included persons whose income is between Rs. 200 and Rs. 100 and whose occupations do not require necessarily any educational qualifications. Usually all skilled workers and artisans come under this group. The examples are tailors, carpenters, painters, bakers, drivers, shop assistants, petty traders, barbers, dhobis etc.

In class VI are included all agricultural or other unskilled labourers, fishermen, gardeners, and domestic or other servants whose income is usually less than Rs. 100/- p.m.

For classes IV and V a further qualification is made depending upon whether the family is living in an urban area or rural area. This scheme

was derived in 1966.

5. *B.G. Prasad's classification (1961, 1968)*: Prasad's classification is based heavily on the economic status of the family. More specially the per capita income. In the original paper of 1961 the 5 social classes corresponded to the per capita income per month levels of :

1. Rs. 100 and above.
2. Rs. 50 to 99.
3. Rs. 30-49.
4. Rs. 15-29.
5. Below Rs. 15.

In a revised classification Prasad suggested the following per capita income per months levels of

1. Rs. 270 and above.
2. Rs. 130 to 169.
3. Rs. 80 to 129.
4. Rs. 40 to 79.
5. Below Rs. 40/-.

In these communications, Prasad has also named the corresponding occupations usually encountered in these income levels.

6. In one of their papers, regarding the demographic factors in the patients of depression, Bagadia et al (1973) have relied on per capita income exclusively. Their scheme, however, is different from both of Prasad's suggested schemata. His categories are as follows :—

- Class I Rich Rs. 200 and above.
- Class II Upper middle 101 to 200
- Class III Middle 51 to 100
- Class IV lower middle 26 to 50
- Class V poor 25 and below.

7. Another scale is by Varma (1962). Factors included here are family composition, educational level of members, particularly female members, source of income, relatives and their social position, were worked out and items prepared. The items covering these areas were garbed in a few direct but largely indirect question forms. Each of the items in the scorable part of the schedule could be indicative of an individual's position on a 5 point scale : 1. Very high. 2. High. 3. Average. 4. Below average. 5. Low.

8. *Lewis and Dhillon (1955)*: evolved a scale for classifying the village families. Factors included are :—

- (1) Land owned (irrigated and non-irrigated)
- (2) Land mortgaged.
- (3) Amount of credit and debt.
- (4) Type of house structure.
- (5) Income from non-agricultural occupation.
- (6) Ownership of livestock and grouped into seven SES groups.

9. *Rahudhkar (1960)* devised a SES scale which was employed for farm families of a Nagpur extension block.

10. *Freeman (1961)* measured the economic status of families in 3

villages in U. P. Information on material possessions was used in regard to economic status.

Recently some more tests for measuring SES have come in the market like Jalota, Kapoor et al, "socio-economic status scale (urban)"; Kulshrestha's "Socio-economic status scale (urban and rural separately)", (listed in the catalogue of Indian Psychological tests; 1975 by National Psychological corporation, Agra, Agra Psychological Research cell, 1975-76); and Pandey's Social class Evaluation Scale (Pandey 1973).

Discussion and Suggestions :

Here we are concerned with finding of a relatively reliable and valid method to measure the socio-economic status which will not be unduly time consuming and would be relatively easy to apply. In this regard, due attention has to be paid to the peculiar Indian conditions and even to the peculiar regional conditions in India. From the review of the foreign studies mentioned earlier we come to know that essentially there can be two approaches to the problems of socio-economic classification. The first qualitative aspects of socio-economic condition of the particular individual or family. This approach is exemplified by a classification proposed by Warner et al (1949) and that adopted by the Helsinki City Statistical Office, (1972). There is nothing basically wrong with this approach, except that academic purist can frown upon these classifications and label them as

non-quantitative, subjective impressions. We feel however, that with some experience and uniformity of application, cultivated by training this approach can equally be "scientific" compared to the other methods to be discussed now.

The other foreign studies have concentrated more on the quantitative measurement of the relevant variables and they represent the more objective of the two approaches. The care to be taken with these objective measurements is that they should measure the essential variables related to the socio-economic class. A preoccupation with method must not obscure the subject of the study. These foreign studies vary from one end of measurement from percentage of income spent on food, shelter and clothing (Warner and Lunt, 1941) and the analysis of objects lying in the living room (Chapin, 1929) to the complex measurements of cultural activities, books and magazines purchased, home facilities (Sim's Score card) and the type of house, source of income, neighbourhood analysis (Warner et al, 1949). Although for obvious reasons the scales developed in the west can not be directly applied to an population without some modifications and testing of validities. One useful lesson which we learn from them, is the identification of various variables, which are related to the socio-economic variables.

Now we come to scales developed in India. In general, these scales

have been developed in different parts of the country. Keeping in view the diverse socio-economic conditions prevailing in different regions notwithstanding the widespread poverty, it is reasonable to expect that before application of one of the scales to a region of a country proper preliminary validating studies should be carried out. Unfortunately this has not been done.

Another problem with the use of these scales is that some of them are too lengthy and time consuming. In this category we would place Pareek and Trivedi's (1964) Rural Socio-Economic Scale, and scales developed by Varma (1962), Lewis and Dhillon (1955), and Rahudhkar (1960).

We shall now be discussing Kuppuswamy's scale in some detail. Three variables of education, occupation and income need to be known in determination of the socio-economic status with the help of this scale. This scale has the advantage of being a standardized and validated instrument. Cross-regional validation however, as mentioned earlier is a prerequisite and we want to use it in areas far away from Mysore where it was originally standardized. Further more it had been designed for use in Urban population. However, this limitation is not a serious one as the I.C.M.R. work in this regard and our own work has shown that the sets of correlations of these factors were comparable in urban

and mixed population.

Some minor modifications in the scale however, appear necessary because of the time that has elapsed since the development of the scale and the changed economic scene of the country. Changes are particularly needed in the income levels set for the lower SES classes. Similarly, changes in the lower educational categories seem indicated. The people who have never gone to school should be further subdivided into those who can do some elementary reading and writing and those who cannot even do that. Similarly the distinctions amongst persons who are middle pass, who are high school pass or who have obtained some post matric diploma does not seem so conspicuous.

We would place the method developed by the statistical section of I.C.M.R. almost on the same footing as Kuppuswamy's scale. It takes into consideration education, income, caste and occupation. The reliability and validity determination of these methods have not been specifically mentioned. The weightage system for the various sub categories mentioned in the sub scales is more complex.

The socio economic classification adopted in the I.C.M.R. studies on the growth and development of children has the enormous advantage of being much simpler than the other methods. It has another advantage in that it has been applied to a large

number of families in various parts of the country, if one accepts the conclusions of the I.C.M.R., that they have found a fairly satisfactory classification, taking into account the existing conditions in India. Provided this conclusion is valid it should prove to be a valuable, simple device. The serious limitation, if it can be called a limitation, is the price and wage structure, the spiral of which always keeps on rising. The remedial action for this is that at short intervals of time, say 5 years, this type of classification must be continually revised, based upon the results of an on going research.

Prasad's classification takes into account per capita income as the exclusive basis for the socio-economic classification. in contrast to family income or various other variables. This, however, has to be worked out, although on the face of it, it looks plausible, whether this provides a better Index.

Before closing this discussion, we would like to point out that with the current knowledge about the class structure and stratification in Indian conditions, there is no definite scheme that can be suggested as a frame work of classifying people. The proper field of study of socio-logical division is society itself. No amount of armchair theorizing and discussion can substitute for solid hard research in the field, although useful directions for work can definitely be suggested.

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A STUDY OF RETROACTIVE INHIBITION IN SHORT TERM MEMORY

REETA MENON, D. P. SEN MAZUMDAR AND D. K. MENON

The present study explored the role of retroactive inhibition in short term memory. 15 one to one matched pairs of schizophrenics also matched with 15 pairs of normal subjects with respect to age, sex and education constituted the sample of study. One subject from each of the pairs of schizophrenics as well as normals was randomly assigned to one of the two conditions of recall. Intra-group and inter-group comparisons of recall after the retention interval were made. Schizophrenics as well as normals with rest during the retention interval yielded significantly better recall of original learning than when the retention interval contained an interpolated activity. Schizophrenics suffered significantly greater recall deficit as compared to normals in both the conditions of recall. Further implications of results obtained in the present study were discussed.

To study the effect of interference on short term memory as a laboratory substrate in studies of proactive and retroactive inhibition, it was considered useful to apply the retroactive inhibition paradigm to study short term memory deficit in schizophrenics which to the best of investigators' knowledge has not yet been employed in earlier studies on schizophrenia.

In the present study, it was attempted to test the following hypotheses.

(1) Average recall of the originally learnt non-sense syllables (list A) after the retention interval for the schizophrenic group will be more

when the retention interval is filled with rest (condition I) than when retention interval is filled with interpolated activity (condition II).

(2) Similarly, average recall of normals will be more when the retention interval is filled with rest (condition I) than when retention interval is filled with interpolated activity (condition II).

(3) Average recall scores for normals shall be more as compared to schizophrenics, after the rest retention interval (condition I).

(4) Normals shall also score higher than schizophrenics while recalling list A after the retention inter-

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val containing interpolated activity (condition II).

METHOD

Sample : Fifteen pairs of chronic undifferentiated male schizophrenics matched within each pair and with fifteen pairs of normal controls with respect to age, sex and education were taken from Hospital for Mental Diseases and Ranchi Mansik Arogya-shala, Ranchi. The patients within each pair were also matched regarding duration of continuous stay since present admission and total duration of stay in the hospital. All the patients had thought disturbances and were on active drug therapy consisting chiefly of phenothiazines. Normal male subjects were drawn from a variety of sources in Ranchi—bank employees, businessmen, salesmen, students and clerical staff. By normal it is meant here, that none of the subjects had a history of mental illness, nor had he ever sought psychiatric consultation. None of the subjects, including schizophrenics had a past history of mental subnormality, epilepsy or brain injury.

One subject in each of the 15 matched pairs of schizophrenics and normals, was randomly assigned to one of the two conditions of recall, by tossing of a coin. This resulted into two groups of schizophrenics, namely schizophrenic I and schizophrenic II; and two groups of normals, termed here as normal I and normal II. Mean age in all the four groups consisting of 15 subjects

each, was 29.47 years, S.D., 4.23; and range 22 to 39 years. Six subjects in each group had education upto matric, one upto intermediate, seven upto B.A./B.Sc. and one upto M.Sc. Both the schizophrenic groups had mean duration of continuous stay in hospital since present admission 4.27 years; S.D., 1.80 and range, 2 to 8 years; and mean total duration of stay in hospital as 4.53 years S.D., 1.72 and range 2 to 8 years.

Test material : It consisted of two lists (A and B) of three lettered ten non-sense syllables selected randomly from Glaze's (1948) list having 80% association value. To ascertain that both the lists were comparable for our subjects, they were tried on five matched pairs of schizophrenic patients, i.e., one group learnt list A and the other list B. Recall following seventh trial indicated that the patients could reach the level of about 50% learning for both the lists, which showed that the two lists were operationally comparable.

Procedure : All the four groups learnt list A for 7 trials, which was followed by retention interval of ten minutes during which schizophrenic I and Normal I had rest pause of going through pictures taken from magazines (disimilar activity), while schizophrenic II and normal II learnt list B (interpolated activity). After the retention interval, each subject was asked to recall the originally learnt list A, as illustrated below :

CONDITION I

Schizophrenic I Learn A—Rest pause—Recall A
Normal I
(10 minutes)

CONDITION II

Schizophrenic II Learn A—Learn B—Recall A
Normal II
(10 minutes)

The retention interval was fixed at ten minutes as this approximated the average time taken in learning list A for seven trials. Each subject was tested individually after due rapport was established. Nonsense syllables in list A as well as list B were spelled at the rate of two seconds per syllable with an interval of two seconds in between the syllables. Immediately after each presentation, the subject was asked to recall as many syllables as he could and score of one was given for each syllable correctly recalled. Serial order of presentation remained the same for all the trials. No knowledge of results was provided to the subject till the testing was over, nor it was disclosed to him that he shall be asked to recall list A after the retention interval.

Results: The mean scores obtained by the four groups on seventh trial while learning list A were compared with each other using t-ratio (Garrett, 1967). No significant difference was observed between the two schizophrenic groups and between the two normals groups. The findings support the adequacy of

matching within the groups as the mean difference between the two schizophrenic groups is as small as .06 and between the two normal groups it is .07. However, statistically significant differences were observed between schizophrenic I and normal I and between schizophrenic II and normal II, which shows that schizophrenics performed poorly in learning list A as compared to normals. (Table I).

TABLE I

Mean, S.D., and t-ratio of learning scores on list A obtained by the four groups.

Groups	Mean	S.D.	t-ratio
{ Schizophrenic I Schizophrenic II	4.27 4.33	.85 .59	0.05
{ Normal I Normal II	6.07 6.00	.85 .82	0.06
{ Schizophrenic I Normal I	4.27 6.07	.85 .85	5.63**
{ Schizophrenic II Normal II	4.33 6.00	.59 .82	6.15**

**p < .01, N = 15 in all the groups

Comparisons of mean scores obtained by the four groups in recalling the syllables in list A correctly after the retention interval, reveals that schizophrenics as well as normals suffered from greater recall deficit when they learnt an interpolated list B during the retention interval as compared to the condition in which the subjects went through the pictures taken from magazines, that is, a

disimilar activity ($p < .01$). Normals in both the conditions scored significantly higher than respective schizophrenic groups ($p < .01$). Retroactive inhibition was more pronounced in Schizophrenic II as compared to Normal II (Table II).

TABLE II

Mean, S.D and t-ratio of recall scores on list A obtained by the four groups after the retention interval.

Groups	Mean	S.D.	t-ratio
Schizophrenic I	2.93	.93	5.77**
Schizophrenic II	1.20	.65	
Normal I	5.60	.71	3.00**
Normal II	4.73	.85	
Schizophrenic I	2.93	.93	8.69**
Normal I	5.60	.71	
Schizophrenic II	1.20	.65	12.17**
Normal II	4.73	.85	

** $p < .01$, $N = 15$ in all the groups

Average loss in recall scores expressed in terms of percentages was highest amongst schizophrenics who learnt an interpolated activity during the intervening retention interval. Next in order were schizophrenics under condition I. Normals who learnt an interpolated activity also showed loss in recall scores, but relatively less than both the schizophrenic groups and more than the other

normal group which suffered least (Table III).

TABLE III

Average percentage loss in recall scores of the four groups after the retention interval

Group	Average percentage loss
Schizophrenic I	33.89
Schizophrenic II	72.32
Normal I	07.18
Normal II	21.08

$N = 15$ in all the groups.

Discussion : Before discussing the results of the present study, two methodological issues deserve a comment or two. First, as mentioned earlier, all the schizophrenic patients in this study were on active drug therapy, chiefly phenothiazines. It was considered unwise to stop drug therapy lest they become unmanageable and uncooperative. A bias could have unintentionally been created in selecting only those patients in whose case drugs could safely be withdrawn without creating a management problem. Furthermore, Daston (1959), Helper, Wilcott and Sol (1963), Mason-Brown and Brothwick (1957), and Vestre (1961) report that phenothiazines have no significant effects on memory. The second methodological problem related to criterion of original learning, which in the present study, was controlled in terms of trials (7 trials)

rather than 100% amount of learning. It was doubtful that all the schizophrenics under study could reach hundred percent amount of learning. Secondly, to achieve the criterion of 100% learning, which obviously would have taken longer time, the patients' concentration and co-operation could not perhaps be ensured to remain consistent during the testing period.

The findings obtained in the present study indicate that all the four hypotheses are retained. That schizophrenics suffer from memory deficit, the present observations are in line with those obtained by Brengelman (1958), Belmont, Birch, Klein and Pollack (1964), and McGhie, Chapman and Lawson (1965). That retroactive inhibition caused significant retention loss in normals as well as schizophrenics, the present findings vindicate the views held by Jenkins and Dallenbach (1924) and McGeech (1942) who maintain interference hypothesis as the best explanation of forgetting. The present results further show that retroactive interference was more pronounced amongst schizophrenics, for which one may have to consider various factors like, degree of similarity between task A and B, difficulty level, etc. which have determining influence on the amount of retroactive inhibition (McGeech and McDonald, 1931). Is it possible that these factors operate differently for normals and quite differently for schizophrenics?

Another explanation for greater

recall deficit in schizophrenics can be traced to poor original learning (Table I) as compared to normals. Degree of original learning does affect retroactive inhibition (McGeech, 1929; Shaw, 1942). One may argue that schizophrenics started with less original learning, therefore ended with less recall. But the findings in table III do not support this contention as the two groups of schizophrenics had comparable original learning, and one of them (schizophrenic II) in the end had greater recall deficit.

Investigations involving schizophrenic patients are often criticised on the grounds that the subjects' capacity to cooperate and maintain concentration in any form of testing is so low that any findings are of doubtful validity. This objection does not hold good for present study where at the time of selecting the patients, a careful scrutiny was made to ensure that only cooperative patients are selected.

Untill further data are available in the literature, one may consider that perhaps, retroactive interference operates differently for schizophrenics as compared to normals. In a study by Bauman and Murray (1968) it was found that the schizophrenics' short term memory deficit is specific to recall and that recognition goes unimpaired. There is a general agreement on the existence of associative defect in schizophrenics. What may be the role of retroactive interference in contributing to schi-

zophrenic's difficulties in association forming stage of memory, needs to be investigated. Theoretical postulates like "interpenetration of personal themes" (Cameron, 1951), "personal construct" (Kelley, 1955), "hypothetical filter mechanism" (Payne, 1961); perhaps can be studied empirically following the interference model.

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(Revised, 23.10.1975)

P. G. I. HEALTH QUESTIONNAIRE N-2 : A CROSS CULTURAL STUDY
WITH THE ENGLISH VERSION OF THE SCALE

S. K. VERMA, N. N. WIG, H. D. CHOPRA AND H. K. MALHOTRA

A neuroticism scale in Hindi was translated into English and modified by one of the authors (H.D.C.) according to the need in Australia and administered to 104 persons there. 41 of these were normals and 63 were neurotics. The test was quite successful in discriminating the normals from neurotics with only 6.7% of misclassification rate. As predicted, when the same scale was used in another culture i. e, in America (by H. K. M.) on 37 normals and 16 neurotics, there were greater number of false positives and false negatives with an overall misclassification rate of 24.5% although it could still discriminate normals from neurotics at .01 level of significance. These results are discussed in the light of the additional data from India (42 normals and 12 neurotics), where there were 10.0% of misclassifications.

Introduction : All translations are beset with difficulties. This is well recognised fact but unfortunately one that is poorly understood and only partially accepted. The field of psychological test is full of such examples where a test originally constructed and standardized in one culture, has been translated or modified to some extent and used in other cultures, local norms usually given were considered to be sufficient just because the test was once standardized. In the recent years however, many research workers (Vernon, 1969; Verma, 1974, 1974a; Wig,

1975, Wig, Pershad and Verma, 1974 etc.) have been disillusioned about the very concept of culture-fairness in test construction, particularly those tests which had been inadequately translated or adapted. It is now that the need for restandardization of such tests in different cultures according to their own needs is a little better understood.

One may go on arguing about the theoretical aspects and possibilities, without coming to any conclusions, but as is often said the real test of the pudding is in eating. So,

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these theoretical issues need to be put to test.

The tool and the translation: PGI Health Questionnaire N-2 (Wig, Verma, 1973; Verma, 1974) a simple neuroticism scale in Hindi was taken up for this purpose. It was translated into English by one of the authors (HDC) keeping in view the conversational dialect spoken by the patients in Australia (Victoria State) to express their neurotic symptoms. The original test was constructed for Indian patients, keeping in view their language while expressing such symptoms. It stands to reason, that many of the items would need to be modified. In fact some of the items were greatly modified, so much so that the authors of the original test (S.K.V. and N.N.W) at times disagreed with the translated version, still the items were retained as such for experimentation purpose in the present study, in order to test certain hypotheses.

Hypotheses: It was expected that the test would work well in Australia, in distinguishing the normals from the clinically judged neurotics. That is, there would be low percentage of false negatives and false positives. (*Hypothesis 1*): If earlier statements regarding the culture-fairness (rather culture unfairness) of psychological tests are true, it would follow that the same translated version would not do so well in a different culture (America for example). The overall differentiation between normals and neurotics may still be statistically significant, but it will not be so sharp and precise as in the earlier case (*Hypothesis 2*).

One may wonder as to how the test would behave, if brought back to the place of its origin. Here also, it can be hypothesized that the test would not be so sharp and precise, as in case of Australia, still it should be able to differentiate significantly between normals and neurotics, probably a little more accurately than would be in the case of America (*Hypothesis 3*).

In the present study, these three hypotheses were put to test. All the three hypotheses would be retained only in case (a) the normal and neurotic groups are differentiated in the three cultures, separately and (b) this differentiation is sharper and more precise in Australia (for which, place, the translations were specially made), followed by India (where the original test in Hindi was constructed and standardized) and America (another English speaking country), in that order. (it must be noted however, that because of low literacy rate and because of English being understood by very few people in India the English version could be given to only a limited section of clinic population, in India. A bigger sample would have required a much longer time to complete data collection).

Sample: There were 104 persons from Australia, 53 from U.S.A. and 54 persons from India. The Australian sample consisted of 41 normals and 63 neurotics. In the American sample, 37 were normals and 16 neurotics, and in the Indian

TABLE I

Comparison of Normal and Neurotic groups : Data from Australia (HDC)

Sample	N	Neuroticism Scale		Lie scale.	
		Mean	Range	Mean	Range
Normal	Male 20	3.45	0-12	0.15	0-5
	Female 21	3.00	0-10	.29	0-2
	Male 22	22.72	6-41	2.50	0-10
Neurotic	Female 41	25.07	4-43	1.56	0-5

TABLE II

Comparison of Normal and Neurotic groups ; Data from America (HKM).

Sample	N	N-Scale		L-Scale	
		Mean	Range	Mean	Range
Normal	37	5.35	0-21	.97	0-7
Neurotic	16	14.19	4-38	1.31	0-7

sample, there were 42 normals and 12 neurotics. All these were adults in the age range of 15 to 50 years of age. For reasons stated earlier the sample from India had to be small, particularly the neurotic group. The samples were purposive.

Results : The results are shown in the following tables :—

With a cut off score of $N=9$, there were 4.9% false positives and 7.9% false negatives. The overall misclassification rate was 6.7%.

The neurotic group scored significantly higher on the N-Scale, as compared to the normal group (chi-square significant at 0.1 level).

With a cut off score of $N=9$, false positives were 18.9% (7/37) and false negatives 37.5% (6/16) with an overall misclassification rate of 24.5% (13/53). The neurotic group scored significantly higher on N-Scale as compared to normal group (chi square significant at .01 level).

TABLE III

Comparison of Normal and Neurotic groups : Data from outside India (HDC and HKM).

Sample	N	N—Scale		L—Scale	
		Mean	Range	Mean	Range
Normal	78	4.23	0—21	.84	0—7
Neurotic	99	22.20	4—43	1.77	0—10

TABLE IV

Comparison of Normal and Neurotic groups : Data from India (S.K.V).

Sample	N	N—Scale		L—Scale	
		Mean	Range	Mean	Range
Normal	42	5.12	0—28	1.29	0—6
Neurotic	12	20.18	10—40	4.09	2—6

With a cut off score of N 19, there were 11.54% (9 out of 78) false positives and 13.92% false negatives (11 out of 79) with an overall misclassification rate of 12.4% (20 out of 157). The neurotic group score significantly higher on N—scale as compared to the normal group (Chi square significant at .01 level).

With a cut off score of N=9, there were 11.9% false positives and no false negatives with an overall misclassification rate of 10.0%. The neurotic group scored significantly higher on N—scale as compared to the normal group (chi square significant at .01 level).

Discussion : Majority of psychologists now agree that the concept of culture fairness in test construction is an illusion (Verma, 1974a, Wig, Pershad & Verma, 1974; Vernon 1969, Wig, 1975). A test constructed for one culture should not be forced on to another culture, it would be unfair to them. While translating the items of a test, the language needs to be very carefully considered. Emphasis on the exact translation is unjustified. The data from the present study confirms this.

Hypothesis 1 is retained as the data from table I shows that the English version of the scale could successfully differentiate the normals and the neurotic groups with quite a

low level of misclassification rate. Hypothesis 2 is also retained as Table II shows that the same English version was successful in differentiating the normals from the neurotics in USA also but with a considerably higher misclassification rate. It is significant in this connection that the score was found comparable and low in both the samples (Australian & American) and the neurotics in general scored a little higher on it, as compared to normals.

When the test was brought back to India, it could successfully discriminate between normals and neurotics, with a misclassification rate in between the two extremes (very low in Australian sample and somewhat higher in the American sample). Thus the third hypothesis is also retained. It is also noteworthy that in spite of its limitations, this translated version showed high discriminatory power which suggests a high validity of the original scale also.

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Brief Communication

COGNITIVE FUNCTIONS IN EPILEPTICS

VIRANDRA MOHAN, V.K. VARMA, B.B. SAWHNEY, and D.K. MENON

Whether cognitive impairment is a concomitant of generalized seizures is a question that has remained unsettled as findings in the reported literature have been inconclusive and at times contradictory. In this brief paper intellectual and memory functions of epileptics shall be compared with those of normals. The relative significance of various factors; like age at onset, duration and frequency of seizures, amount and duration of anticonvulsant drugs taken, and electroencephalographic changes as regards their contribution to cognitive impairment in epileptics was also worked out; which shall be reported later in a separate paper.

In the present study 50 consecutive patients of generalized seizures were taken from the neurology out-patients' clinic while 30 normal controls were selected from amongst the relatives of neurotic patients admitted in the psychiatry ward of the Postgraduate Institute of Medical Education and Research, Chandigarh, during the period March, 1973 to June, 1974. Both the groups were statistically matched with respect to age (range, 15 to 44 years), sex (both sexes), occupation (unemployed to professional), education (illiterate to graduate), and income (range, Rs. 50 to 1000 per month). The diagnosis of generalized seizures was based mainly on clinical evidence and E.E.G. following the classification criteria advocated by Gestaut (1969). The patients who manifested neurological deficit, psychotic disturbance, mental deficiency prior to onset of fits, focal E.E.G. changes and changes in X-Ray, skull, were excluded. In the normal controls none of the subjects had personal or family history of psychosis, epilepsy or mental retardation. All the subjects were administered Bhatia's battery of performance tests of intelligence (Bhatia, 1965) and Boston memory scale (Wells, cited by Virmani et al, 1973). In

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patients, a care was taken that they had been free of fits during the preceeding 48 hours and that they were not drowsy due to drugs at the time of testing.

TABLE

Comparison of epileptics and controls on I.Q. and M.Q.

	Epileptics		Controls	
	Mean	S.D.	Mean	S.D.
I.Q.	85.5**	14.28	97.17**	14.07
M.Q.	81.2	21.90**	82.00	14.85**

Mean I.Q. of epileptics was significantly lower than that of the controls (Table). Similar findings were obtained by Tarter (1972); Sikdar and Kar (1972), Mathews and Klove (1967) and an ICMR study conducted at 5 centres in India (1973). However, contrasting results were obtained by Fetterman and Barnes (1934) and Lennox and Collins (1945). By and large, evidence is in favour of epileptics showing intellectual deterioration and the present study lends support to this. Conclusive evidence can be obtained only if intellectual status of epileptics is known before the onset of the illness or if sufficiently large and well matched samples are drawn to compare the difference in intellectual functioning. The mean memory quotient (M.Q.) of epileptics did not differ significantly from that of the normals. But the variances were significantly different ($p < .01$). Strictly speaking in statistical terms, it can be surmised that these two groups did not come from the same population. Further research on larger samples is indicated.

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Book Review

Measurement of intelligence among Indian adults, Prabha Ramalingaswami, National Council of Educational Research and Training, New Delhi, 1975; pages, references and appendices, 102+7+21; price, Rs. 9.50.

Ever since the pioneering work of Alfred Binet started as far back as 1895, the task of measuring intelligence has increasingly been entrusted to psychologists working in various fields and set-ups. The diagnostic importance of intellectual evaluation hardly needs to be emphasized. The professional psychologists have always been aware of the myth of culture fairness in intelligence testing, especially in India, where there is tremendous cultural diversity. In her attempt to translate into Hindi, adapt and standardize WAIS in India, the author, Dr. Ramalingaswami faced numerous problems which she attributed to cultural bias, therefore, she considered it "prudent to drop the verbal section and focus attention on the development of performance portion of the scale" only. Although the present work does not break any fresh ground either on the technique of measuring intelligence or on the theoretical tenets of intelligence, yet it provides deep insights into the practical problems in Indianising the western psychological tests. The experiences gained during first try-out necessitated modifications in the items contained in Picture Completion, and Picture Arrangement; while the rest three sub-tests—Block Design, Digit Symbol and Object Assembly—were retained as such. The final form of the scale was administered individually to a stratified proportionate quota sample of 604 residents of Delhi, of both sexes in the age range of 15 to 45 years. However, the tables 8.1, 8.2 and 8.3 (p. 43-44) do not support the author's contention that the "factors of sex and education were given the same proportion in each age group as in the 1961 Census" of Delhi. Nor there is any mention of such comparative figures in the text. The ingenuity with which the author contacted her subjects, established rapport and tested them in the home-setting or work-setting, is worth appreciating. One wonders as to in how many Indian languages the author had to converse as she writes: "Hindi, English or any other language in which the subject had maximum proficiency was used as the medium of Communication" (p. 48), while the subjects spoke as many as ten different languages (Tables 8, 10 and 12; p. 114-116).

Item analysis was done for all the sub-tests except Digit Symbol as it is a speed test. Comparison with the Wechsler's data (Tables 9.1, 9.2, 9.3 and

9.4 p. 52—54) shows that where ever items could be compared, pass percentage (P%) obtained by Indian adults in the present study was frequently less on most of the items in Picture Completion, Picture Arrangement and Object Assembly, and some items in Block Design; although, most of the items were drastically modified in Picture Completion and Picture Arrangement to suit Indian conditions. Probably such a disparity is due to cultural differences but the fact remains that these items were more difficult for the sample of Indians as compared to WAIS sample.

The raw scores on full scale as well as on sub-tests—Picture Completion, Picture Arrangement and Object Assembly—were observed to be normally distributed, whereas, normal distribution was not observed on Block Design and Digit Symbol "due to the inherent nature of these tests". Following Wechsler's method, 20—34 years age group was chosen to be the "reference group" and raw scores were converted into scaled scores, considering the mean as 10 with a standard deviation of 3. I.Q. tables for the four age groups (15—19, 20—24, 25—34 and 35—44) were prepared by setting the mean at 100 with a standard deviation of 15, following Wechsler's technique; whereas, in International Classification of Diseases—8, the mean remaining 100, standard deviation is fixed at 16. This is just for information to clinical psychologists, although it would not make much of a difference, except in cases who fall on the borderline of categories for mental subnormality. Reliability and validity was worked out employing several techniques. Obviously, the high figures speak of the high qualities of the adapted scale. Maximum score was obtained by 15—19 age group and it progressively declined with increase in age. Mean total scores for all the four age groups showed significant differences between the two sexes. The younger female groups had scored slightly better than their contemporary males, and the two later age groups of females "helped substantially in bringing down the over-all female scores". The author logically reasoned this due to lesser number of females in the higher educational group in the sample. Similarly, highly significant differences were observed between sub-groups with different levels of education, and also between the socio-economic groups. On factor analysis, the matrices showed a common factor present in all the sub-tests. Two other factors were also indicated but their nature could not be inferred.

To evaluate the usefulness of the present adaptation in clinic setting, one would have appreciated the normative data on illiterate population as well, as 60 to 70% of the clinic population is illiterate and belongs to rural areas. Furthermore, when dealing with an individual case, a clinician looks for specific norms rather than massed norms. As the author had obtained significant differences on the factors like sex, education and socio-economic

status, separate norms were definitely warranted. Lastly, the clinical importance of WAIS lies in scatter analysis and pattern analysis, which cannot confidently be worked out on a truncated scale. We are sure that this would not be the end of efforts; further work on standardization process on WAIS would continue and further refinement by the same author or somebody else would always be welcome. The author deserves appreciation for her laborious work which has been accomplished after years of pain-staking efforts. The book is in the format of a thesis and contains 12 chapters. It is printed almost without mistakes, and makes a delightful reading. It is so low priced, that one would be tempted to buy it. Believe us, you would not regret it.

Dwarka Pershad,
Reeta Menon.

psychotherapy clinic at Nungambakam—both at Madras. His background and training led him to blend the best in the Eastern and Western thought and evolve the "Gurukula system" of psychotherapy with the "Guru Chela" relationship as the central point around which the system revolved.

Desaraj Dhairyam was first and foremost a therapist. He practiced what he preached - rather he preached only that which he practiced. As a therapist he won the affection and respect of his patients by treating them eclectically with a view towards their total situation. He was never too busy to listen carefully to the problems and complaints of his patients. His deep devotion to his patients and total commitment to Clinical Psychology were always evident.

He was admired and loved by all who knew him for his warm understanding of human problems and his compassion for human suffering. A member of the Lion's club, Madras, he was on its sight conservation committee. From 1961 to 1968, he published a Magazine "Mental Health" to make the lay-public aware of the various aspects of mental health and illness. Though a clinician in private practice, in 1968 he started a voluntary mental health service and was giving free advice and treatment to many needy people. Since its inception, he was the Chairman of the Dr. Harold N. Riber counselling unit at the Meston Training College, Madras. As a part-time teacher he taught behavioural science courses at the Institute of Management studies of the University of Madras.

Desaraj Dhairyam was an erudite and gracious man. He had a wide circle of friends who treasured him for his learning, his loyalty and above all for his humaneness. As a colleague he will be remembered for his example by which he demonstrated that clinical psychologists in India can render utilitarian service to the community by entering the field of private practice, for his pioneering efforts in starting the voluntary mental health service, for the initiation of a popular journal on mental health and - perhaps most importantly—for his farsightedness in combining the best traditions of the Eastern and the Western thought.

—G. G. Prabhu

ENGAGEMENT THEORY AND SUCCESSFUL AGEING

HARINDER KAUR PAINTAL

The peak of the human development lies in the attainment of Social maturity. The ability to reciprocally function in a complex social milieu is not only an indication of social maturity; but, it is also associated with happy disposition. It is an important aspect of adjustment at all stages of the human development especially in the advanced stages. Among the elderly people with diminished roles, interactions in their peer and social groups it is likely to reduce the feelings of isolation or rejection, satisfy some of their emotional needs and enhance their morale.

There are two contrasting theories of successful ageing. The better known is the Engagement Theory. This is also preferred by the practical workers of the Western society which is youth and activity oriented. According to this theory, continuation of activities and attitudes of middle years into old age is conducive to happiness and successful ageing. (Neave, 1961). The other theory is the Disengagement Theory as proposed by Cumming and Henry (1961). According to this, the

individual prefers to give up his earlier activities and social roles and society tends to take away his earlier professional and social responsibilities both not minding but mutually and willingly seeking the disengagement.

Maddox (1964), however, has critically reviewed the three basic postulates of the Disengagement Theory. That there is a psychological and social withdrawal as a model response of elderly people is generally accepted. That the disengagement process is intrinsic and inevitable is disputed for there are factors such as, sex, health, profession, intelligence, personality type and life style which modify the disengagement process. The third postulate that the disengagement process is probably a necessary condition of successful ageing is also debated.

In the light of these contrasting theories the purpose of this study was to identify those social, relationships and activities which distinguish the well adjusted man from the poorly adjusted ones between the age of 45 and 74 years.

testing is an object from which responses have to be elicited. Consequently the relationship with the patient will suffer. To safeguard against this, we must conceptualize testing as a means of establishing person-person relationship (and not object-person relationship) to mutually arrive at (notes mutually, only the psychologist arriving at it is not enough) a better understanding of the individual and his problems. If we accept this as a motto of our service then each of us will automatically have to learn techniques for formulation of the problem, test interpretation and communication of the findings to the patient which the patient can understand and from which he is likely to benefit. One has to spend a good deal of the session arriving at some kind of purpose and a "fit" (between psychologist's purpose and the patient's). This 'fit' should make sense to both the individual and the psychologist. In the experience of many, testee's cooperation and 'heart-searching's is the maximal in such a relationship. As an information let me add here that the ethical standards of psychologists issued by American psychological Association clearly delineate the standards (principles) for test security, test interpretation and test publication. They are comprehensive. I recommend them to all the psychologists who are starting their career of testing or of constructing tests. Having been involved in training of young professional psychologists, I have observed the extent of 'test anxiety' in the psychologist when he hears his 'orders' for testing his first patient. The familiarity and ease will come to him after years of experience. At the time his concern is whether he has all the testing material and his instructions which he has diligently memorized but anxious lest he forgets them. At such times he is frantically looking in his pockets if he has some 'searching' questions for the 'inquiry' stage. Of course he is too anxious and uneasy to relate optimally to the patient and gauge the 'depths' of mind. It is good if the teachers and supervisors are helping the young psychologists at such time and put him back in touch with the 'person' of the patient. Unfortunately, in many cases we perceive testing as test material, administration, scoring and interpretation. We tend to forget that there is much more to testing than that. This attitude must be changed. As was said earlier; testing is an experience and it is not a normal experience. Let's be careful how we use it.

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