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AN INVESTIGATION INTO SOME ASPECTS OF VERBAL  
AND NON-VERBAL COMMUNICATION SKILLS  
IN SCHIZOPHRENICS

BY

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Adrian

**COMMUNICATION SKILLS IN SCHIZOPHRENICS**

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## CHAPTER I

### CONDITIONS OF LIFE AND MENTAL HEALTH

#### Mental Health and Physical Health

The more man advances in the sciences the more he will have control over his environment. At present we often hear physicians saying that they are short of acute cases of syphilis for medical demonstrations. In educated societies, diseases like malaria, typhoid fever, smallpox, and the like either do not exist or are reduced to negligible proportions. At the same time antibiotics have rendered harmless many diseases which were once major medical problems. At present in almost all cases of pneumonia or gonorrhoea recovery is the rule. In short these and other physical disorders no longer constitute major medical or social problems as they did half a century ago, and the social advances have come about as a result of basic scientific research. Nowadays it is not so much physical as mental health that gives concern in normal times, and one of the major contemporary problems is that of the disorder (or group of disorders) known as schizophrenia.

#### Schizophrenia as a Social Problem

The functional psychoses are, in general, divided into the following three groupings or types; schizophrenic

disorders, paranoid disorders, and affective disorders. In this study we shall consider only schizophrenia. It was impossible to find satisfactory information about the frequency of schizophrenia. However, we shall offer the reader whatever was available.

Nearly half of the physical and mental hospital beds in U.S. are occupied by mentally ill patients.<sup>1</sup> According to the report of the United States Public Health Service, 18.2 per cent of all first admissions to mental hospitals are schizophrenics.<sup>2</sup> The total number of psychotics in U.S.A. is about 1000,000,<sup>3</sup> and still in other places, the incidence of schizophrenia is even higher. Statistics compiled on the data of first admissions (1939-1943) show that the incidence of schizophrenia among Massachusetts Negroes is as high as 26.3 per cent and in Kenya 28.6 per cent.<sup>4</sup> This means that over one fourth of the first admissions to mental hospitals in these communities are schizophrenics. The mean age of first admission for men is 30 years, and for women 34. Since the disease has a tendency to become chronic, schizophrenic

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1. Coleman, J.C., Abnormal Psychology and Modern Life, Chicago, Scott, Foresman and Company, 1950, p. 13.
  2. Ibid., p.227.
  3. Ibid., p.224.
  4. Ibid., p.236.



patients tend to accumulate and thus constitute 50 per cent of the mental hospital population.<sup>5</sup> For more systematized information, the reader is referred to Figures 1 and 2, p.4.

In the above paragraphs we have shown how high is the incidence of schizophrenia in mental hospitals. Thus we may conclude that mental health and especially schizophrenia constitutes a major social problem. Schizophrenia is the most common psychotic disorder, but its true frequency is unknown. The data we have mentioned are obtained from the records of mental hospitals. However we have no idea how many prospective patients are not institutionalized either because facilities are not available or because of social myths, taboos, and suspicions about the nature and availability of psychosis.

#### Schizophrenia as a Personal Problem

In the preceding paragraphs we noted the percentage of schizophrenia in some mental hospitals. It would be equally interesting to know a bit about the personal experiences, feelings or sufferings as the patients have described themselves.

From the end of ancient civilizations of Greece and

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5. Ibid., p.242.

Fig. 1 - First admission of schizophrenics to mental hospitals

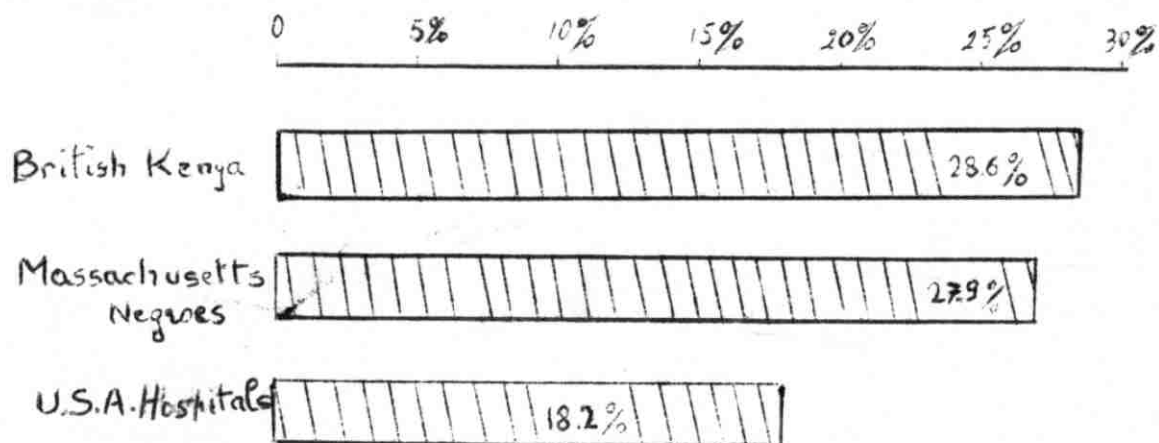
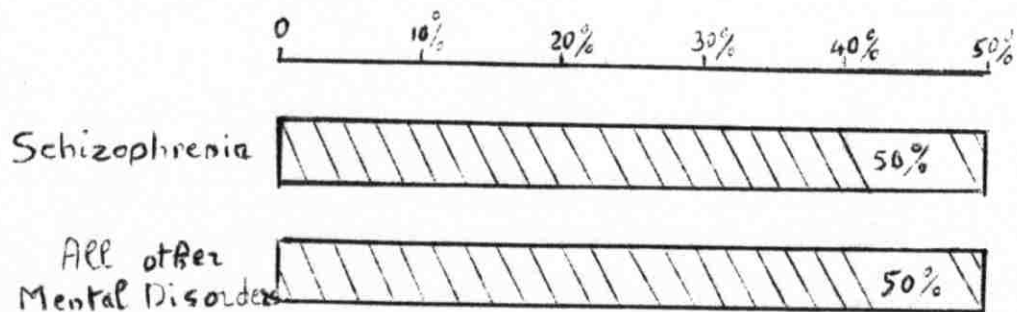


Fig. 2 - Patient population in mental hospitals (according to Coleman)



Rome to the eighteenth and nineteenth centuries bloodletting was regarded as the proper practice for curing mental disorders, and it was common in many countries.<sup>6</sup> Another treatment of mental disorders was by pouring cold water on the head of the patient, and sometimes it was accompanied by flogging.<sup>7</sup> Typically mental patients were kept under chains and shackles and it was not until Pinel's appointment (as once he set free a psychotic from chains) that alternatives were considered.<sup>8</sup> Patients were treated like animals, or worse, and were considered to be just as empty of feelings. Yet we know that this is not true.

#### Personal Experiences of Mental Patients

It is interesting and worthwhile to know how patients describe their feelings or experiences in the terms of their sickness.

Clifford Beers<sup>9</sup> a graduate of Yale University, once suffered from mental disorder, and after his recovery wrote a book called A Mind That Found Itself. In this book, Beers describes the unpleasant treatment and the experiences he had when he was in the mental institution. He describes

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6. Zilboorg, G., A History of Medical Psychology, New York, W.W. Norton and Company, Inc., 1941, p.261-262.  
 7. Ibid., p.323.  
 8. Ibid., p.323.  
 9. Beers, C.W., A Mind That Found Itself, London, Longmans, Green, and Co., 1908, p.12.

his hallucinations in a very effective way and one can imagine how miserable is the life of the mentally ill. The following is an auditory hallucination experienced by Beers:

Certain hallucinations of hearing, or 'false voices,' added to my torture. Within my range of hearing, but beyond the reach of my understanding, there was a hellish vocal hum. Now and then I would recognize the subdued voice of a former friend; now and then I would hear the voices of some who I believed were not friends. All these referred to me and uttered what I could not clearly distinguish, but knew must be imprecations. Ghostly rappings on the walls and ceiling of my room punctuated unintelligible mumblings of invisible persecutors. Those were long nights.<sup>10</sup>

Another time he accounts about his visual hallucinations which he distinctly recalled. The following quotation will demonstrate one of those hallucinations:

I remember distinctly my delusion of the following day - Sunday. I seemed to be no longer in the hospital. In some mysterious way I had been spirited aboard a huge ocean steamship. I first discovered this when the ship was in mid-ocean. The day was clear, the sea apparently calm, but for all that, the ship was slowly sinking. And it was I, of course, who had brought on what must turn out fatally for all, unless the coast of Europe could be reached before the water in the hold should extinguish the fires. How had this peril overtaken us? Simply enough: During the night I had in some way - a way still unknown to me - opened a port-hole below the water-line; and those in charge of the vessel seemed powerless to close it.<sup>11</sup>

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10. Ibid., p.23.

11. Ibid., p.33-34.

These patients sometimes suffer from perversion of senses which in turn provide a good background for the genesis of many types of delusions and hallucinations. The following lines illustrate this very dramatically:

The tricks played upon me by my perverted senses of taste, touch, smell, and sight were the source of great mental anguish. None of my food had its usual flavor. This soon led to that common delusion that some of it contained poison - not deadly poison, for I knew that my enemies hated me too much to allow me the boon of death, but poison sufficient to aggravate my discomfort. At breakfast I had cantaloupe, liberally sprinkled with salt. The salt seemed to pucker my mouth, and I believed it to be powdered alum. Usually, with my supper, sliced peaches were served. Though there was sugar on the peaches, salt would have done as well. Salt, sugar, and powdered alum had become the same to me.<sup>12</sup>

In communicating with mental patients, one realizes that these patients often interpret certain acts in an altogether different manner and give different meaning to it. Any patient upon admission to a mental hospital, must by a legal requirement, sign a slip. Sometimes this simple act of signing which is a mere fraction of many formalities, seems very annoying to such patients, because delusions play an important role and they interpret it differently. Beers mentions a similar experience that he underwent in the mental hospital:

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12. Ibid., p.30.

At what cost had I signed that commitment slip? To me it was the act of signing my own death-warrant. And why should one in my irresponsible condition have been forced to undergo so heart-breaking an ordeal?<sup>13</sup>

According to Beers, a mentally incompetent person should not be compelled to sign such a slip. Why one should go through such senseless formalities when even the law often disapproves of similar actions.<sup>14</sup>

To calm down the agitated patients in mental hospitals doctors resort to various measures, such as, sedatives, isolation cells, and sometimes strait-jacket. We learn from Beers that one of the most bitter and annoying experiences that he had in the hospital was the use of the strait-jacket. He describes this experience in the following way:

After fifteen interminable hours the strait-jacket was removed. Whereas just prior to its putting on I had been in a vigorous enough condition to offer stout resistance when assaulted, now, on coming out of it, I was helpless. When my arms were released from their restricted position the pain was intense. Each and every joint had been racked. I had no control over the fingers of either hand, and could not have dressed myself had I been promised by freedom for doing so. And this, bear in mind, was the effect of a camisole, which form of restraint hospital officials, when called upon to testify, so often describe as being harmless and not very uncomfortable.<sup>15</sup>

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13. Ibid., p.37.

14. Ibid., p.37.

15. Ibid., pp.132-133.

It was after tasting such bitter experience that Beers condemned and criticized very violently the use of the strait-jacket. Later on, it was under his leadership that the Society of Mental Hygiene was founded in 1908, which was a step forward in the improvement of the conditions in the mental institutes.

The following case report is an autobiography of a schizophrenic written after her recovery. It is a primary source of information regarding schizophrenia from the personal point of view. It is interesting to hear the subject describing her experience and personal feelings during her sickness in her own words. The following quotation describes vividly the feelings of the patient of the early phase of the disease:

I was filled with an audacious and unconquerable spirit. As panic mounted, I grew afraid of being alone, had an intense desire to communicate. I had for a short time an exclusive mission but was able to struggle consciously against messianic delusions. These tendencies were replaced by a sense of burdensome and exclusive responsibility, which continued throughout the entire several years of illness.<sup>16</sup>

Schizophrenics often suffer from disastrous experiences which are due to their delusions and hallucinations, and the

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16. Anonymous. An autobiography of a schizophrenic experience, J. abnormal Social Psychol., 1955, 51, 679.

patients just react to those as normals react to their own perceptions. They often describe conditions where they believed themselves to be held responsible for great destructions or accidents causing tremendous harms to humanity. In the following paragraph she describes one of her most terrifying feelings that she experienced during her illness:

It was only at times when I was plunged directly into hell-fire that I felt there was no effort I could make except in the direction of death. At other times, though I seemed to be almost pulled apart in a dis-integrating universe, I felt there must be some way I would hold things together.<sup>17</sup>

Having in mind the type of schizophrenics' communication, it is noteworthy to see that the above-said patient confesses about her being unable and helpless in making known her wants to the doctors and the nurses.<sup>18</sup>

To give the reader a fuller idea about the personal feelings and experiences of the mentally ill, we shall consider a few examples from Dr. Daniel Shreber that he himself wrote during his stay (1884-1885) at the mental hospital.

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17. Ibid., p.680.

18. Ibid., p.681.



Dr. Shreber's delusions and hallucinations represent two points that are much stressed: he assumes the role of Redeemer, and his emasculation to transform him into a woman. To illustrate this, we shall quote a relevant passage:

In this way a conspiracy against me was brought to a head (in about March or April 1894). Its object was to contrive that, when once my nervous complaint had been recognized as incurable or assumed to be so, I should be handed over to a certain person in a particular manner. Thus my soul was to be delivered up to him, but my body - owing to a misapprehension of what I have described above as a purpose underlying the order of things - was to be transformed into a female body, and as such surrendered to the person in question with a view to sexual abuse, and was then simply to be 'left where it was' - that is to say, no doubt, abandoned to corruption.<sup>19</sup>

Every attempt at murdering my soul, or at emasculating me for purposes contrary to the order of things (that is, for the gratification of the sexual appetites of a human individual), or later at destroying my understanding - every such attempt has come to nothing. From this apparently unequal struggle between one weak man and God himself, I have emerged triumphant - though not without undergoing much bitter suffering and privation - because the order of things stands upon my side.<sup>20</sup>

The following quotation is a dramatic example of Shreber's visual delusions regarding his transformation into a woman:

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19. Freud, S, Collected Papers, Vol. III, (tr. by Alix and James Strachey), London, The Hogarth Press, 1955, p.398.

20. Ibid., p.139.

The only thing which could appear unreasonable in the eyes of other people is the fact, already touched upon in this expert's report, that I am sometimes to be found, standing before the mirror or elsewhere, with the upper portion of my body partly bared, and wearing sundry feminine adornments, such as ribbons, trumpery necklaces, and the like. This only occurs, I may add, when I am by myself, and never, at least so far as I am able to avoid it, in the presence of other people.<sup>21</sup>

### Schizophrenia as a Scientific Problem

In the early pages of this paper we noted the challenges that schizophrenia constitutes as a major social problem. Likewise we as fellow human beings tried to imagine how terrible was the life of the mental patients. The main tendency was that something should be done to help the mental patients.

But, important as schizophrenias are as social and personal problems, this is not all. Schizophrenic patients behave in peculiar ways and their behavior adds to the range of phenomena available for study by the psychologist as a scientist. Since psychology is the science or study of behavior, schizophrenic behavior is an important part of its subject matter. The scientific study of schizophrenic behavior allows for the development of a science of behavior in general

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21. Ibid., pp.400-401.

as well as holding our hope for the solution of the social and personal problems of schizophrenics in particular.

### Complexity of Schizophrenia

At present the term schizophrenia is used for a group of psychotic disorders that are marked with disturbances in reality relationships and in emotional and intellectual processes. Although the symptoms in schizophrenia may vary considerably the patients have in common indifference to reality, apathy, and specially splitting of thought and feeling. Schizophrenia usually develops slowly and the early symptoms do not always represent malignant features, and to the layman the early symptoms may mean nothing serious.

A dramatic and clear account of the complexity of schizophrenia is given by Osmond and Smithies. To account for schizophrenics they say:

We must account for a situation in which a person at any age, but usually a young adult, in response to stress or with little evidence of it, becomes slowly or insidiously, or with overwhelming speed and accompanied by acute confusion, subjected to disturbances of association, changes in affect, thought disorder, hallucinations and delusion and catatonic symptoms to such an extent that life outside a mental hospital becomes impossible. The sick person, on the other hand, may never even need to visit a doctor but may simply appear odd and eccentric. The illness may terminate quickly either with or without medical aid, or may be completely resistant

to any form of treatment and continue for years without any pathognomic physical changes being demonstrable. It must be influenced by a wide variety of treatments, such as psychoanalysis, deep insulin metrayol, E.C.T., thyroid therapy and leucotomy. Occasionally events such as severe physical shock may affect it favourably. It must be possible for the patient to recover after years of illness without measurable evidence of intellectual impairment, and to appear remarkably normal in spite of a long period of incarceration.

The illness should bear some understandable relationship to the manic-depressive disorders, and not infrequently be undistinguishable from them at an early stage. It would be in keeping with our present knowledge if an inherited constitutional basis could be provided for its occurrence.<sup>22</sup>

Schizophrenia is a complex mental disorder and we can deal only with one part of it. The part that we shall consider is "splitting", that is taken to be the very crux of the disorder. It was Bleuler who, in 1911, introduced the term schizophrenia meaning "split mind," because he considered splitting of thought and feeling to be the essence of the disorder.<sup>23</sup> Even this is too general a topic to be taken as a whole, and this thesis is restricted to a consideration of the two forms of behavior by which splitting may be inferred: namely, speech and gestures.

In the following chapter we shall outline some of

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22. Osmond, H. & Smythies, J., Schizophrenia: a new approach, J. Ment.Sci., 1952, 98, 309-315.
23. Bleuler, E., Dementia Praecox or the Groups of Schizophrenics, (Trans. by Zinklin), New York, International University Press, 1950, p.350.

the attitudes towards schizophrenia that have been held throughout history in an attempt to show how the notion of splitting developed. A more detailed consideration of the phenomenon, and the evidence for it is given in Chapter III.

CHAPTER IISPLITTING AND SCHIZOPHRENIAExamples of Behavior Disorders in Ancient Times

There is good evidence that mental disorders and abnormal behavior are as old as the human race. History books covering all periods, ancient and modern times, contain a good number of descriptions of abnormal behavior. Literature books are another reliable source of information of abnormal behavior. Books of history and literature describe almost all the types of abnormal behavior, but of course, not in a systematic and classified form.

In the literature of Chinese, Egyptians, Hebrews, and Greeks many striking cases of behavior disturbances are mentioned.<sup>24</sup> King Saul of Israel (eleventh century B.C.) is said to have stripped off all of his clothes in public.<sup>25</sup> Cambyses (sixth century B.C. King of Persia) also manifested some abnormal behavior: he killed his sister by kicking her.<sup>26</sup>

Greek mythology is full of similar descriptions of

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24. Coleman, Abnormal Psychology, p.4.

25. I Samuel, 19:24.

26. Coleman, Abnormal Psychology, p.4.

behavior disorders. In the time of Homer, Greeks believed that a man becomes mad because the gods take his mind away. Mental disorder meant nothing but very queer behavior and there was no curiosity for psychological detail.<sup>27</sup> Cicero describes the following about Hercules in his writings: "He pierced his own sons with arrows, mistaking them for the sons of his enemies not because his eyes did not see, but because he suffered from an illusion."<sup>28</sup> Ajax too suffered from mental disorder and once slew a flock of sheep thinking he was attacking his foes; on regaining his senses he was so overcome with remorse that he committed suicide.<sup>29</sup>

Tamerlane the great oriental monarch, was very fond of building pyramids of human skulls. According to Coleman, even in more recent times, George III of England suffered from manic-depressive reactions. During periods of manic excitement he manifested typical symptoms of the disease: such as asking questions without waiting for the answers, jumping quickly from one topic to another, and often he ate his food so quickly that the members of his court had to

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27. Zilboorg, A History of Medical Psychology, p.37.

28. Ibid., p.66.

29. Ibid., p.37.

leave the table half hungry.<sup>30</sup>

There is no shortage of accounts of bizarre behavior in recorded history. Such accounts naturally refer almost exclusively to the famous men although there is no reason to suppose that similar peculiarities were not also observed in ordinary men. But there were no serious and sustained attempts to classify these isolated cases into a consistent picture of behavior symptomatology and etiology, although methods were at best conceived in humanitarian fashion in antiquity.

The dominant idea in the Middle Ages was that madness was caused by evil spirits or demons, and particular emphasis was put on demonology, witchcraft and the like.<sup>31</sup> Treatment was cruel and harsh and sufferers were treated not as patients but as criminals, not as humans to be pitied and cured but as animals to be shut and locked away where they could do no damage until such times as they repented or died.

In Konigsberg, in 1636, a man suffered from extreme hallucinatory and delusionary states.<sup>32</sup> He thought he was God the Father and that the angels, devils, and the Son of

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30. Coleman, Abnormal Psychology and Modern Life, p.5.

31. Ibid., p.23.

32. Zilboorg, A History of Medical Psychology, pp.259-260.



God recognized him as such. For this confession, he was convicted; his tongue was cut out, he was beheaded and burned.

### The Beginning of the Scientific Questioning

Up to this point we have described occasional cases of apparently psychotic behavior through history. It is clear that, in general, psychoses and behavior disorders were neither regularly defined nor classified into disease entities. Likewise treatments were not scientific and often causes of mental disorders were attributed to sin, devils, sex, love, and the like. Nevertheless there were isolated attempts to classify behavior disorders and introduce some form of rational therapies. Although humanitarian and medical attitudes towards behavior disorders did not become common practises until the nineteenth century, they were preceded by isolated enlightened endeavors of a few individuals and in various periods from the fifteenth century onwards. For example Paracelsus (1493-1541), who is taken as one of the originators of the modern approach to psychological medicine, held that "dancing mania" was not due to the possession of devils, but a form of disease that should be treated as such.<sup>33</sup> Similarly Felix Plater (1536-1614) went personally into the cellars and

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33. Ibid., p.199.

the dungeons where the mentally ill were kept under terrible conditions. His next step was an attempt of classifying them as idiots, morons, cretins, depressed and melancholics. Plater believed that the cause of abnormal behavior was somewhere in the brain, but suggested chains as the best solution for the disturbed patients.<sup>34</sup>

According to Zilboorg,<sup>35</sup> Najab ud din Unhammad, a writer who lived in the ninth century, was interested in mental disorders and has left excellent descriptions of mental patients and a systematic classification of mental diseases. He describes about nine classes of mental disorders covering about thirty individual disorders. The following examples will give the reader a rough idea about some of his classifications:

Souda a Tabee was apparently a febrile delirium accompanied by bizarre behavior. The patients behavior is marked with great carelessness regarding clothing, childish merriness, and unprovoked laughter. The same disease in the young has different symptoms (apparently chorea) such as extraordinary movements of hands and feet, leaping, beating the ground etc...

Murrae Souda is described as a state marked with ruminative

34. Ibid., pp.259-260.

35. Zilboorg, A History of Medical Psychology, p.123.

anxious doubt, and the Arab physician ascribes it to too much love for law and philosophy. Today this type of a description would be diagnosed as obsessive-compulsive neurosis.

Malikholia a Maraki A person suffering from this disease felt heat in the brain and it is accompanied by combined priapism and sexual impotence.

Kurtib. It is described as a form of persecutory psychosis.

Mania. This term was borrowed from Greek and used to describe states of abnormal excitement.

Haziyan. It was given to a group of mental diseases marked with disorders of judgment.

Mibda a illut dimagh. Patients suffering from this disorder have a "mind that magnifies what ever is presented to it, and leading to actions that are outrages of society...to displays of opposition, to absurd conduct." Evidently this is an early description of a psychopathic case or criminal.

Ishk designates a depressive state accompanied with deep anxiety. The term "ishk" is derived from the word "ishka" which means a creeper that twines around a tree and gradually causes its death. This disease is caused in some unknown manner by love.<sup>36</sup>

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36. Ibid., pp.123-124.

For all these various types of mental disorders there was one traditional treatment: good diet, baths, liniments, changes of climate, soft music, pleasant surroundings, and in certain cases bloodletting.<sup>37</sup>

The Emergence of Scientific Theories and Practices

Development of the Organic Viewpoint:

In the early part of the eighteenth century, anatomy, physiology, neurology, chemistry, and medicine advanced rapidly. The general tendency was to explain many physical ailments in terms of organic pathology. Another step was the tendency to look upon mental illness as a manifestation of organic brain pathology. This concept of mental disorders is known as the organic viewpoint. As early as 1757, Haller<sup>38</sup> emphasized the importance of the brain in psychic functions and suggested post-mortem dissection of the insane.

In the early nineteenth century in Germany there was a sharp controversy between the somatologists and psychologists, and finally the somatologists won the "battle", and for a time German psychiatry suffered. The somatologists tried

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37. Ibid., p.124.

38. Ibid., p.252.

to produce a psychiatry without a psychology.<sup>39</sup>

The most outstanding and influential leader of the organic point of view was Griesinger (1817-1886). He held that mental diseases were diseases of the brain, that diagnoses were to be made on the basis of causes, and all causes were physiological.<sup>40</sup>

Griesinger, a man of enormous energy and will power, overshadowed all of his colleagues in Germany and the organic point of view dominated for a considerable time even after his death.<sup>41</sup> But although Griesinger received much attention and honor, it was Kraepelin (1856-1926) who had the dominant role in founding the organic point of view.<sup>42</sup> He not only emphasized the importance of brain disease in mental illness, but contributed to it by his system of classification discussed below.

#### Development of the Concept of Schizophrenia

##### Morel and Dementia Précoce

In 1853 Morel, tried to subject some mental patients to the effects of ether for medical purposes, but outside

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39. Ibid., pp.435-436.

40. Ibid., p.436.

41. Ibid., pp.435-437.

42. Ibid., p.460.

purely medical problems, he was interested in the problem of degeneration. He considered mental disorders primarily as a result of inherited weaknesses, and of course degeneration was a hereditary phenomena.<sup>43</sup> Morel in his book, "Traite des Maladies Mentales", held that degeneration was the foundation of psychiatry. He emphasized heredity, toxins, and "sympathies".<sup>44</sup> In short, mental diseases were the manifestations of organic brain disease.

In 1860, Morel<sup>45</sup> described the case of a thirteen-year-old boy who formerly had been the most brilliant boy in his school but who, over a period of time, had lost interest in his studies and seemed to have forgotten all that he had learned. The boy often spoke of killing his father and his behavior was quite similar to stupidity. Morel thought that the boy was undergoing some intellectual, moral, and physical deterioration, and introduced the term démence précoce, meaning precocious mental deterioration, to denote the condition.<sup>46</sup>

### Kraepelin and His Classification

In the nineteenth century research in medicine was carried on along two methods: the organic view point and, the

43. Ibid., p.402.

44. Ibid.

45. Coleman, Abnormal Psychology and Modern Life, p.242.

46. Ibid.

so called descriptive method. Emil Kraepelin (1856-1926), follower and successor of Griesinger, not only followed the organic view point but had a dominant role in establishing it.<sup>47 48</sup> He made exhaustive systematic studies on mental patients. His findings to a considerable extent gave support to the importance of heredity in the causation of the disease.<sup>49</sup> Kraepelin however, neglected the importance of psychology in psychiatry. For Kraepelin mentally sick persons represented only a collection of symptoms.<sup>50</sup> The role of the personality of the patient was altogether neglected. He was interested in the form and types of mental illness: he did not care to know what the patient thought, but how he thought.

An interesting point in Kraepelinian system is the prognostic attitude which is closely connected with diagnosis.<sup>51</sup> A patient is diagnosed by prognosis, and when prognosis ultimately proved correct, the diagnosis too was considered to be correct. Kraepelin identified a type of schizophrenics which resembled paranoia in having delusions, but it was unlike "true paranoia" and was called dementia paranoides.<sup>52</sup> He

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47. Zilboorg, A History of Medical Psychology, p.460.

48. Ibid., p.451.

49. Ibid., p.455.

50. Ibid., p.452.

51. Ibid., p.456.

52. Cameron, N., The Functional Psychoses In J.McV. Hunt (ed.), Personality and the Behavior Disorders, Vol.II, New York, Roland Press, 1944, p.887.

similarly used the term dementia praecox when referring to patients showing similar symptoms but had early deterioration in common.<sup>53</sup>

It should be clearly borne in mind that the various terms used to denote the different types of dementia praecox were not coined by Kraepelin. For example, the term demence precoce was coined by Morel, hebephrenia was introduced by Hecker, and catatonia by Kahlbaum.<sup>54</sup> Also it is important to know that each of these terms was used to denote different types of mental disorders but not as individual disorders of a disease entity. Kraepelin after comparing the various clinical pictures - that is, Hecker's hebephrenia and dementia paranoides, was convinced that all these constitute a single disease entity.<sup>55</sup> To this unity he used the same term as Morel did, but in the Latinized form, dementia praecox. He, therefore, distinguished the different types as hebephrenic, paranoid, catatonic, and simple, added by himself. This division is the most widely accepted up to the present time.

#### Bleuler and Schizophrenia

In 1911, Bleuler,<sup>56</sup> the Swiss psychiatrist substituted

53. Coleman, Abnormal Psychology and Modern Life, p.242.

54. Zilboorg, A History of Medical Psychology, p.448.

55. Cameron, Personality and the Behavior Disorder, p.888.

56. Ibid.



the term schizophrenia, a more descriptive and acceptable term for dementia praecox. He used the word schizophrenia to mean the splitting of the personality or the psychic functions; because, he thought that the disease was marked with incoherence of thought process, emotional blunting, and with an orientation which is inward and away from the "real" world. He emphasized weakness in association and splittings as outstanding symptoms, rather than dementia.

Bleuler described schizophrenia in terms of primary and secondary symptoms, and the secondary symptoms are the consequents or results of the primary ones.<sup>57</sup>

### The Primary Symptoms

The primary symptoms are defects in (a) association, (b) affectivity, and (c) ambivalence. All other manifestations are the result or indirect consequences of these three main factors.<sup>58</sup>

#### (a) Association

Thousands of associative threads which direct our thinking are interrupted in schizophrenia. In this way thinking is disturbed, and sounds illogical and bizarre.<sup>59</sup>

57. Bleuler, Dementia Praecox, pp.348-349.

58. Ibid., pp.352-353.

59. Ibid., p.14.

(b) Affectivity

The emotional deterioration stands in the forefront of schizophrenics' clinical picture.<sup>60</sup> In modern psychiatry, it has often been observed that an "acute curable" psychosis becomes chronic as soon as affect disappears. Schizophrenics give every appearance of being emotionally indifferent towards the outside world.

(c) Ambivalence

One often observes in schizophrenics the very same concept accompanied simultaneously by pleasant and unpleasant feelings.<sup>61</sup> The husband likes and dislikes his wife; and a patient wishes to eat but does not eat.

The Secondary Symptoms.

The loosening of thought associations will result in opening wrong pathways of thought so, in a way, the patient is forced to operate with fragments of ideas.<sup>62</sup> In turn, this will lead to displacements, condensations, confusion, generalizations, clang-associations, illogical thinking, and incoherence.

When the logical functions weaken, the affect

60. Ibid., p.40.

61. Ibid., p.53.

62. Ibid., p.354.

predominates; associations that are unpleasantly toned are repressed. Therefore, whatever is in conflict with affects is split off.<sup>63</sup> This mechanism with other factors determines the delusions, but its most significant effect is the splitting of the psyche regarding the emotionally charged complexes. The escaping from the outer world may manifest itself in negativism. The splitting of associative ability may also lead to pathological ambivalence in which contradictory thought and feelings simultaneously exist without influencing each other. Delusions constitute desires, wishes, and fears that are distorted because of disturbed association and are often unrecognizable.<sup>64</sup> Likewise, the activity of split complexes conditions the memory falsifications and contents of hallucinations, the mannerism, and most of the stereotypies.

Bleuler summarises the concept of schizophrenia in term of primary and secondary symptoms in the following way.<sup>65</sup> "We assume the presence of a process, which directly produces the primary symptoms; the secondary symptoms are partly psychic functions operating under altered conditions,

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63. Ibid.

64. Ibid., p.355.

65. Ibid., p.461.

and partly the results of more or less successful attempts at adaptation to the primary disturbances."

Thus whether due to primary or secondary factors, Bleuler takes splitting to comprise the most outstanding characteristic of the disease because many of the typical symptoms can be derived from it. He says:

The splitting is the prerequisite condition of most of the complicated phenomena of the disease. It is the splitting which gives the peculiar stamp to the entire symptomatology. However, behind this systematic splitting into definite idea-complexes, we have found a previous primary loosening of the associational structure which can lead to an irregular fragmentation of such solidly established elements as concrete ideas. The term, schizophrenia, refers to both kinds of splittings which often fuse in their effects.<sup>66</sup>

Essentially, for Bleuler, splitting is a theoretical notion. Observations of the behavior of people we now would call schizophrenics shows their behavior to be bizarre and disorganised. This disorganisation of behavior is attributed to disorganisation, or splitting, of the mind - hence schizophrenia. In the next chapter we shall discuss some of the behavioral characteristics themselves that most clearly exemplify splitting, and they indicate that other interpretations are possible.

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66. Ibid., p.362.

CHAPTER IIISPLITTING IN SCHIZOPHRENICSPrologue:

In Chapter II, we showed that schizophrenia is said to be marked with defective association ability, and that the notion of splitting arose as a consequence of this. Also, we saw that splitting is taken to be the most outstanding characteristic of the disease. In other words, splitting is the very essence of schizophrenia. To avoid confusion, the term "splitting" will be used according to the following definition: in behavior, when gestures and facial expressions express one thought or affect and speech suggests another thought. In other words, emotion and thought are not in harmony; in brief, it is the incompatibility of thought and affect in the same person.

In this Chapter, we shall propound two opposing alternative views on splitting. In the first, we shall consider the factors of communication as reflecting exactly the inner events of the patient. Therefore, in the first approach any defects in or between speech, facial expressions, and gestures will be attributed to a corresponding defect in cognition or in affect or in both. In other words, speech, facial expressions, gestures are taken to

represent thought and affect directly.

To show defects in cognition, we shall cite experiments involving the mental faculties, such as: writings, speech, interviews, sentence completion tests, vocabulary tests, and the like.

To show defects in affect, we shall consider experiments and observations on judgment of emotions, social activities, doctor-patient interviews, and other situations that involve emotions. However, there are some examples and experiments which serve to show defects of both cognition and of affect.

In the second approach, we shall assume the possibility of defects in expression - that is, a failure in the process of communication. In other words, there may be defects in speech, facial expressions and gestures, so that these outward behaviors do not accurately represent the patient's subjective experience. To show this, we shall cite a good number of "Model Psychosis" experiments and observations. The reader will note that upon introspection or retrospection, the subject will confess that he experienced certain emotions, but could not say or express them at that moment exactly as he wanted. To the patient there may be no splitting at all.

His thoughts and feelings may be emotionally in harmony although one or the other or both are imperfectly expressed through failure in one or both systems of communication - namely, speech and gesture.

### Splitting and Symptomatology

Bleuler in describing the symptomatology of schizophrenia, labels some symptoms as primary and others as secondary. He considers disturbances in associations as primary, and symptoms consequent of the primary ones as secondary. Therefore, systematic splittings are regarded as secondary manifestations of disturbed associations. Accordingly the tendency to utilize fragments of ideas in thinking with its false conclusions, displacements, symbolizations and condensations are all the results of disturbances in associations.<sup>67</sup> In brief, schizophrenic behaviour is marked with all sorts of splittings, and it is reasonable to attribute splittings in association to the nature of the disease in so far as complex and less exercised functions deteriorate before others.<sup>68</sup> However many other splittings can be explained in terms of psychological laws - that is,

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67. Bleuler, Dementia Praecox, pp.352-353.

68. Ibid., p.353.

all those functions that are in conflict with the affective needs of the schizophrenic are disturbed.

#### What is the Basis of Splitting?

In the speech or discourse of a normal individual, thought, feeling, gestures are well integrated and in harmony. In case any of these fails, the listener becomes aware of the incompleteness or incongruity of the statements.<sup>69</sup>

One of the most striking phenomena often encountered in mental hospitals is the incongruity of speech and expression of emotion given by schizophrenics. Their speech is bizarre and full of incoherent blockings, discontinuities, mannerisms, stereotypes, neologisms, verbigerations, etc. are very common.<sup>70</sup> The expression of emotions or affect in schizophrenics is even more bizarre: gestures and the facial expressions of the schizophrenic do not seem to be in harmony with his speech and immediate events of the environment in question. In other words, a schizophrenic upon hearing the death of a beloved one may burst in laughter; or upon hearing happy news his facial expression may resemble very much that

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69. Ruesch, J., Disturbed Communication, New York, W.W. Norton and Company, Inc., 1957, p.111.

70. Bleuler, Dementia Praecox, p.148.



of a very sad person.<sup>71 72</sup> These patients tell cheerful things in a sad tone and vice versa. This phenomenon is regarded as bizarre and abnormal and referred to as a split between cognition and affect. In brief, it is an incompatibility of cognition and affect, as shown in Figure 3 page 36.

Incompatibility of Cognition and Affect:

Ruesch an authority in the field of disturbed communication, makes the following statement: "In the modern communication theory, the emotional state of an individual is conceived of as the sum total evaluation of all events which occur inside the organism. These are perceived by the outsider as a kind of metalanguage which is helpful in the interpretation of messages. Emotions thus express the appraisal of existence from the inside out, while intellectual functions represent the view of the same events from outside in."<sup>73</sup> In short, these two aspects are complementary. Accordingly splitting may be explained as either due to failure of cognition or of affect or both.

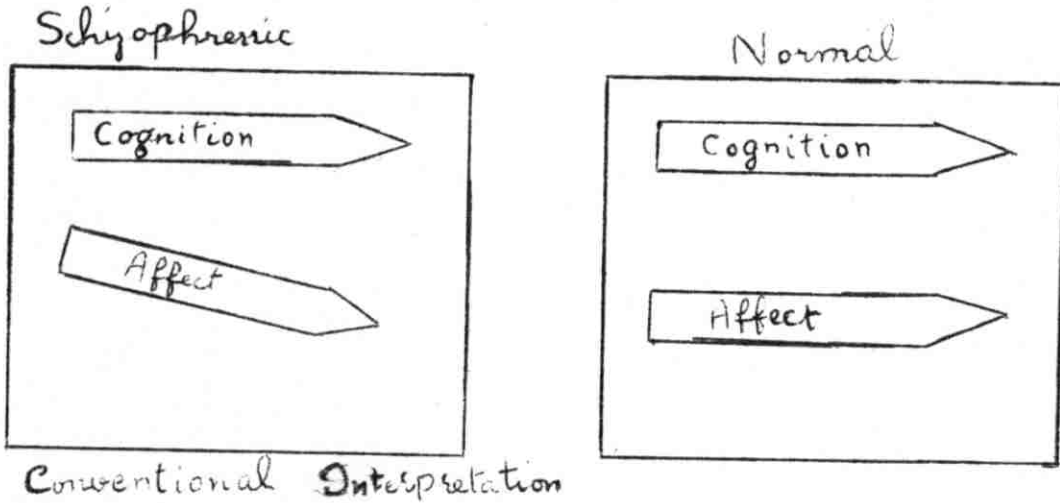
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71. Ibid., p.149.

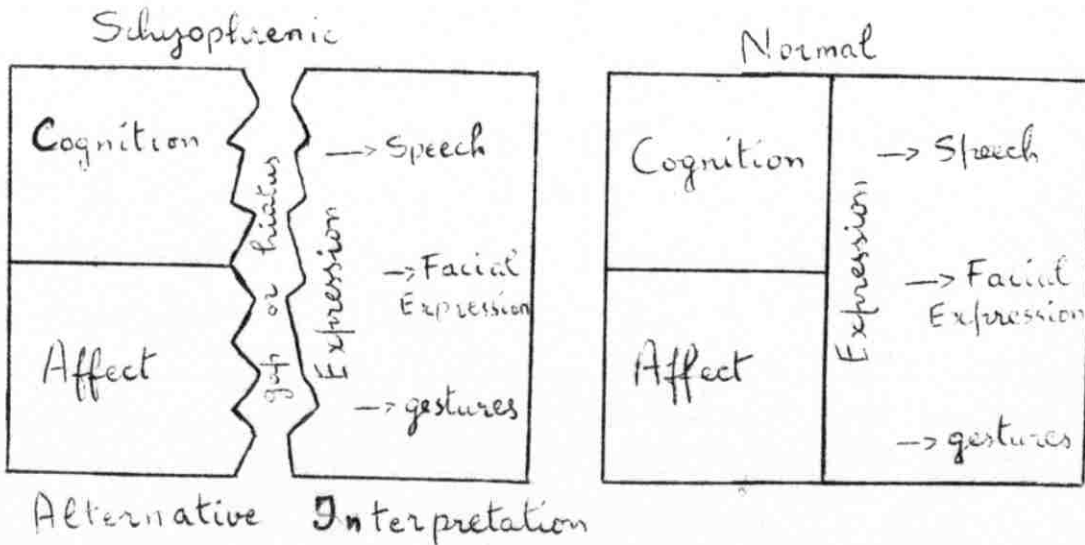
72. Ruesch, Disturbed Communication, p.111.

73. Ibid., p.14.

Fig. 3. - Conventional and alternative interpretation of splitting



In the normal person, cognition and affect are parallel and in harmony; whereas in the schizophrenic, they are not.



In the normal person speech reflects thought (cognition) and gestures reflect emotion accurately. This may not be the case in schizophrenics.

To judge failures in cognition and in affect, we depend upon communications. In turn, communication is carried on through several media - such as, speech, writing, facial expressions, gestures and the like. Many hold that schizophrenics' vocabulary test scores can be used to judge the degree of "mental deterioration;" others have theorized that the stability of vocabulary test scores is due to the fact that word meanings represent "old learning" which is the last to be impaired in psychopathology.<sup>74</sup> So that it is reasonable to rely upon vocabulary in judging thought deterioration.

Failure of Cognition:

(a) Speech: Schizophrenia is marked with a definite type of alteration of thinking and feeling in relation to the external world which appears in no other disease so typically.<sup>75</sup> Many a time, the process of thinking may stop in the middle of a thought. This usually happens when a schizophrenic tries to pass from one idea to another. Sometimes the process of thinking may stop completely; at other times quite new ideas emerge all at once, and the previous thought

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74. Moran L.J., Vocabulary Knowledge and Usage among Normals and schizophrenics, Psychol. Monogr., 1953, 67, 19.

75. Bleuler, Dementia Praecox, p.9.

is not continued. In such cases the observer can not see any relation between the previous and the new streams of thought.<sup>76</sup>

This is an example of two thoughts originating in the external circumstances or in the train of thought itself.<sup>77</sup>

"How are you?" "Bad (with a smiling face)." "You look very well; everything going all right?" (patting the patient on the back). "No, I have a pain in my back," (pointing out the place where she was patted). "Why are you laughing?" "Because you are clearing out the chest of the drawers." "But you already laughed before that." "Because things were still in it."

Lorenz<sup>78</sup> describes a conversation of two schizophrenic patients which is marked with extreme dissociation and splitting.

Patient M: To what extent I understand correctly but not completely. I don't think that any question has ever been raised on that score. There is a question concerning the fact of whether he is my father, concerning the question

76. Ibid.

77. Ibid., p.24.

78. Lorenz, M., Expressive behavior and language patterns, Psychiatry, 1955, 18, 361.

of being my father.

Patient N: And suddenly I had an idea that the way we were acting was probably - and the way we were feeling was probably - uh - extremely - uh - disturbing or amusing to somebody else, in other words, it - it was so unusual - uh - uh etc....

Lorenz<sup>79</sup> has studied schizophrenic language pattern thoroughly and mentions cases whose speech is so incoherent that one can never be sure what the patient was really talking about. Their speech sounds vague, incoherent, incomplete, and meaningless.

Laffal, Lenkeski and Ameen,<sup>80</sup> describe a schizophrenic case whose speech besides being incoherent is, to some extent, regularly opposite: often the patient while speaking with the doctor about something which is visible, such as a smoking pipe, says that he does not see the pipe and continues to discuss things about the pipe. The following is just a sample of the patient's speech.

79. Ibid.

80. Laffal, J. Lenkoski L.D., and Ameen, L., "Opposite Speech", in a schizophrenic patient, J. abnorm. soc. Psychol., 1956, 52, 411.

Interview With Doctor.<sup>81</sup>

Dr. J.L. "Peter, I want to ask you something. I'm holding a pipe here in my hand. Do you see this pipe?"

Pt. "No."

Dr. J.L. "Dr. L. Do you see this pipe?"

Dr. L.D. L. "Yes, I see the pipe."

Dr. J.L. "Peter, how is it when I show you the pipe, you say, no, you don't see it, and Dr. L. says, yes, he does see it. How is it he says yes and you say no?"

Pt. "Well.... The doctor says he don't see it?"

Dr. LDL. "I do see it."

Pt. "You do see it?"

(b) Schizophrenic Vocabulary: In regard to investigations concerning vocabulary knowledge and usage in schizophrenics, special mention should be made to the valuable work of Moran.<sup>82</sup> He conducted a study to verify the views of Yacorgynski, Cameron, and Golstein,<sup>83</sup> who held that the distortion of word meaning in schizophrenics is due to a lower conceptual level of definition, to less precision in

81. Ibid.

82: Moran, Psychol. Monogr., 67, 2.

83. Ibid.

the understanding of word meanings, to form concepts, and especially due to impaired ability to communicate. In other words, the schizophrenic is not able to reason symbolically by using words.

An experimental and a control group, each consisting of 40 subjects, were employed. The vocabulary scores of the schizophrenics were compared with the vocabulary scores of the control group and the following findings were evident:

(a) The schizophrenics were significantly less accurate in understanding word meaning; this is most evident in his relative failure to differentiate between meanings.

(b) The schizophrenic failed to a certain extent in using their words as conceptual instruments; that is, his ability in forming verbal concepts and to reason in analogy tests seemed to be impaired. (c) Although schizophrenics "define" the same words in the same way as controls, they fail to integrate words into meaningful communication. The findings of this study support the hypothesis that the schizophrenic's ability in using and understanding word meaning is impaired.

(c) Verbal Communication in Schizophrenics: Mirin,<sup>84</sup> conducted a study in order to make more precise the nature of

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84. Mirin, B., The formal aspects of schizophrenic verbal communication, Genet. Psychol. Monogr., 1955, 52, 149.

impairment of the schizophrenic verbal communication. He examined the hypothesis that schizophrenics as compared with normals show a lower and socially less differentiated level of communication. 30 male schizophrenics were considered in this study.

The results were as follows:<sup>85</sup> In task orientation, the schizophrenics manifested impairment in performance; they were not able to focus their activity continuously on the task. In social reactivity, the schizophrenics were not able to discuss things as normals did, and their behavior was mainly unmodified in this interpersonal situation; whereas normals were very flexible. In verbal expression and thinking, the schizophrenics' behavior was marked with diffuseness and inarticulatedness. In short schizophrenics were not adequate in communicating with others:<sup>86</sup> they were weak in (a) expression and in (b) ability to take the role of the "generalized other." The schizophrenics were not good in differentiating between inner and external speech, and between the immediate environment and one's ego.

(d) Judgement in Schizophrenics: The following two studies involve judgments of schizophrenics, and in a way are not

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85. Ibid., p.187.

86. Ibid., p.188.



directly relevant to this chapter. However we shall cite them briefly since they involve cognition and emotion and indirectly shed some light into our discussion. Chambers,<sup>87</sup> wanted to determine whether schizophrenics as compared with normals, would show (a) impairment in complex but not in simple judgement problems, (b) impairment in judgment but not in learning and (c) impairment in a task combining both judgement and learning.

30 schizophrenic and 30 normal subjects were compared for performance on associative learning and for perceptual judgement tasks. There were no significant differences in both groups with regard to age and intelligence. The schizophrenics were poorer than normals in accuracy for all of the perceptual judgement tasks, and the difference was significant at the .02 level. Similarly, schizophrenics were significantly (.05) slower in almost all other tests; although in case of the combined judgement and learning tasks, the difference was less significant.<sup>88</sup> The above findings suggest that the perceptual-type judgement tasks may be used to diagnose and differentiate the schizophrenics and the

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87. Chambers, J.L. Perceptual judgements and associative learning ability of schizophrenics and non-psychotics. J. Consult. Psychol. 1956, 20, 211.

88. Ibid., p.213.

normals.

Chambers,<sup>89</sup> conducted a study on neuropsychiatric patients to retest the expected view that the more serious the mental illness, the greater would be the deviation of their judgement from that of normals. To determine this, the Szondi pictures were used with 135 subjects: 46 neurotics, 22 personality disturbance, 25 schizophrenics in remission, 23 schizophrenics (psychotic), 11 chronic brain syndrome (nonpsychotic), and 8 chronic brain syndrome (psychotic).

The results<sup>90</sup> confirm the hypothesis that the more serious mental disease would be paralleled with greater deviation of judgment from that of normals. Neurotics obtained significantly higher scores than the psychotic schizophrenics and brain syndrome group, but their scores did not differ much from the scores of personality disturbances and schizophrenics in remission groups. T-scores of the personality disturbance and schizophrenic in remission group were significantly higher than those of the brain syndrome groups, but were not much different from the scores of psychotic schizophrenics or from each other.

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89. Chambers, J.L. Trait judgement of photographs by neuropsychiatric patients, J. Clinical Psychology, 1957, 13, 393.  
90. Ibid., p.395.

Failure of Affect:

It was observed long ago that an "acute curable" psychosis becomes chronic when affects disappear.<sup>91</sup> It is logical to infer that the patient in question is most probably suffering from schizophrenia and not affective disorders. As the disease advances symptoms become more prominent. Many schizophrenics do not show any affect for many years. They sit about indifferently in the institutions with expressionless faces. They permit themselves to be dressed or undressed without expressing any sign of satisfaction or dissatisfaction. Some of them do not even seem to react to pain when subjected to injuries by others. Indifference to everything seems to be one of the main external signs of schizophrenics.

Bleuler describes affectivity in schizophrenics as follows:

Above all, however, consistency of affective manifestation is absent. The words which are supposed to express pain or pleasure, the tone of voice, the gestures do not seem consistent or appropriate to the patient's total attitude. The mimic lacks unity--the wrinkled forehead, for example, expresses something like surprise; the eyes with their little crows feet give the impression of laughter and the corners of the mouth may be drooping as if in sorrow.<sup>92</sup>

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91. Bleuler, Dementia Praecox, p.40.

92. Ibid., p.42.

It is easier to sense these phenomena than to describe them. What can best be emphasized in the presentation is the lack of adaptability to changing thought content, the deficiency in the capacity for modulation. The affective mood of the manic schizophrenic hardly follows or does not follow at all the changing content of thought.<sup>93</sup>

A schizophrenic patient used to complain about her husband's imprisonment.<sup>94</sup> When informed that he was set free, she answered, "Is he, that's fine," with complete indifference and with no tone of emotionality.

(a) Lability: Masselon,<sup>95</sup> describing the emotional peculiarities of schizophrenics, mentions not only indifference, irritability, nonchalance, but also a great "lability of affect;" that is mobility of mood. In a certain well-educated and polite patient whose behavior was often marked with high lability, the schizophrenic affect disturbance was pronounced. He had no contact with his social environment and was indifferent to most important events of life - such as, business, divorce, etc. His speech was bombastic, whereas his facial expression was stiff, fixed and altogether incongruent with his speech. It is possible to think that lability of affect in schizophrenics is due to the patient's inability to comprehend many important events.<sup>96</sup> The

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93. Ibid.

94. Ibid., p.43.

95. Ibid., p.44.

96. Bateson, G., et.al., Toward a theory of schizophrenia, Behav. Sci., 1956, 1, 256.

schizophrenic did not seek any contact with his social environment and things that were of vital importance for a normal person, were of no meaning to him. Even a healthy person will not care much for events which he considers unimportant.<sup>97</sup> Therefore, it is quite likely that for the schizophrenic nothing is important for long. For that reason, he often fluctuates from one affect to another. One may also suppose that schizophrenics' lability of affect exactly corresponds to his dissociated thinking. When thinking is dissociated, affects will tend to direct his behavior.

The following examples are cited here because they are very amazing. It is rather surprising that Bleuler does not mention the method of judging change of affect. Neither does he mention what he observes in the patient, nor does he tell the method used in inferring his conclusions. We assume that he is depending upon gestures and facial expressions.

Even if the affects change in the schizophrenic, they change somewhat more slowly than in the normal person.<sup>98</sup> It is often reported that affects seem to lag behind the ideas. In an interview with a female schizophrenic, a picture of a

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97. Bleuler, Dementia Praecox, p.44.

98. Ibid., p.45.

child was shown, and it took her one-quarter of an hour for the corresponding sad affect to appear. Most probably the picture of the child was supposed to evoke a sad affect.

In social parties, many a time, it is observed that the schizophrenic requires a much longer time to get into the party mood than the normal person, but anger and fury may set in abruptly as in the normal. Schizophrenics have a tendency to persist and even increase their anger despite the fact that the reason for the emotion in question no more exists. This phenomenon may be used to explain the apparent split of thought and affect in schizophrenic patients.

Not even homesickness seems to exist genuinely in schizophrenics.<sup>99</sup> A patient who had given the impression of a real longing to return home, upon obtaining permission, went somewhere else aimlessly without going home.

(b) Blunting of Social Feelings:

It is indeed striking to observe the blunting of the social feelings in these patients. For the schizophrenics, the presence of an authority, a respected person, a man, or a woman makes no real difference. They will explain and describe about all sorts of misdeeds in public without any

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99. Ibid., p.48.

modesty or shame. They may describe their sexual experiences in the vilest terms, and may even masturbate openly in public. Once an educated patient in a high school wrote to his mother: "Dear Mother, come to see me as soon as possible. I must know how old you were the night my father made me."<sup>100</sup>

Yet another interesting case of emotional blunting is seen in the case of a patient who received a word from his mother to come and visit his dying father.<sup>101</sup> The answer was just a few words of "consolation," but he did not care to visit his sick father.

(c) Disturbances of 'Lower' Drives:

In many schizophrenics, the 'lower' drives and the emotional side of bodily processes seem to be disturbed,<sup>102 103</sup> Patients with extreme accumulations in the rectum or bladder do not report any discomfort.<sup>104</sup> Some patients are even not disturbed by the shrillest sounds and most blinding lights; patients are seen gazing continually into the sun for long hours without damaging their retinas.

(d) Parathymia:

A very surprising phenomenon common in schizophrenics is parathymia.<sup>105</sup> Some events to which normals would react with pleasure or indifference, schizophrenics become sad

100. Ibid., p.49.

101. Ibid.

102. Ibid.

103. Ibid., p. 50.a

104. Ibid.

105. Ibid., p. 52.

or even irritated, and vice versa. Schizophrenics are observed to react to sad news with extreme cheerfulness and laughter. A particularly frequent form of parathymia is reported by Masselon.<sup>106</sup> The patient upon hearing the sad news of her brother's death, broke out into loud laughter. Another case similar to this is reported by Ruesch.<sup>107</sup>

A female schizophrenic approached one of the ward attendants and told her in the sweetest tone and the friendliest manner:<sup>108</sup> "I really would like to slap your face, people like you are usually called s.o.b.'s." Another patient danced while humming a popular song, all the time maintaining an expression of distress.

Parathymic disturbances are also observed in the fields of taste and smell.<sup>109</sup> Patients drink and swallow with ease things like bugs, saw-dust, gasoline, spoons, and even urine.

(e) Paraminia:

Paraminia is conveniently defined as a pathological state marked by misuse of gestures, etc., in expressing thought. In other words, it is loss of normal relation

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106. Ibid.

107. Ruesch, Disturbed Communication, p.111.

108. Bleuler, Dementia Praecox, p.52.

109. Ibid.



between expression by speech and by gestures.

An astounding case of paraminia is well illustrated in the case of a female patient who complained bitterly about her hallucinations.<sup>110</sup> While her mouth and forehead expressed disgust, her eyes were said to manifest happiness. After few minutes the mouth supposedly started expressing happiness while her forehead still appeared to be wrinkled and gloomy. The patient, herself confessed that the feelings which she experienced were both pleasant and unpleasant. The above-mentioned sounds very interesting, but its validity is rather questionable, and it suffers from too much subjectivity. How can the eyes manifest happiness? In an experiment of facial expression, 360 profiles drawings were prepared with an assortment of brows, noses and mouths, and it is astonishing that almost every compound was accepted by some observer as a genuine expression, even when the various parts of the complex were contradictory.<sup>111</sup> This disapproves the above-mentioned case as an example of paraminia.

(f) Judgement and Affect:

Dunn,<sup>112</sup> employed 40 schizophrenics and 40 normals to test the hypothesis that the affective content of the

110. Ibid., p.53.

111. Woodworth, R.S. & Schlosberg, H. Experimental Psychology, New York, Henry Holt and Co., 1954, p.113.

112. Dunn, W.L., Visual discrimination of schizophrenics as a function of Stimulus Meaning, J.Pers., 1954, 55, 23, 48.

stimulus material in a task will affect the schizophrenic's discriminating ability more than that of normals. The schizophrenics were significantly less able in discriminating between exposed pictures of a scolding scene (p .001) and a whipping scene (p1 .02).<sup>113</sup> However, the schizophrenics were equally good as the normals on feeding and object scenes. These data lead to the conclusion that schizophrenic performance deficit is to a certain extent a function of the stimulating scene and its emotional content rather than a general deterioration of affective reactions.

In the preceding pages examples and recent findings were cited to show the evidence for the notion of splittings in schizophrenics - that is, the incompatibility of cognition and affect. There was convincing evidence that splittings could be due to either failure of cognition, or of affect, or of both. But there rises a decisive question: How is this incompatibility of cognition and affect assessed?

Assessment of Splitting:

The psychologist observes the behaviour of the subject. All that he can observe is the subject's overt reactions to

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113. Ibid., p.55.

certain experiences that are evoked by various stimuli. In other words, cognition or thought is judged through speech, writing, etc., and affect is judged through facial expressions and gestures. However, the observer can only control the external stimuli and observe overt behaviour. But what about any other unobservable stimuli or inhibitions? Is it right and logical to hold that a patient's overt reactions are exactly the reflections of his inner feelings and experiences. If yes, what are our proofs to support it? There is much evidence that, in many cases, even the normal person cannot express his views or feelings one hundred percent correctly. Inference of subjective states from external phenomena—overt behavior, is, at least, questionable. It is quite important to note that even Bleuler realized this and said: "I consider it to be a serious defect that we are forced to deduce most of our anomalies from oral and written productions of the patients."<sup>114</sup>

Splitting due to Failure of Expression:

Our next approach to the question of splitting is an attempt to assess the possibility that the incompatibility of cognition and affect is due to failure in expression and

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114. 114. Bleuler, Dementia Praecox, p.39.

not perception. In brief, the schizophrenic may experience affect, feelings and emotions but fail in expressing them "correctly" in the process of communication.

### EMOTIONS IN SCHIZOPHRENICS

#### Model Psychosis:

The term "Model Psychosis" refers to an artificial experimentally induced psychosis. There are several drugs - such as mescaline, dilysergic acid (LDS 25), nitrous oxide, and other hallucinogenic drugs that when taken by normals produce a short-term psychosis that resembles in many ways the symptoms of acute schizophrenia.<sup>115</sup> First, the model psychosis experiment provides an opportunity to observe the speech and behavior of such subjects. Second, one gets first hand acquaintances of psychotic-like experiences in one's own mental life. Third, not only can the subject introspect at the time, but also, he can retrospect after returning to normal and describe in detail all that he has experienced.

The following is a quotation from McKeller, a contemporary student of model psychosis:

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115. McKeller, P., Scientific theory and psychosis: the 'Model Psychosis' experiment and its significance, Int. J. Soc. Psychiat., 1957, 3, 170

"Not all communication is verbal. Similar difficulties may arise from attempts to interpret the facial expressions of emotions of the subject, a difficulty rather prominent in the case of the schizophrenic patient. Similar difficulties can occur in the model psychosis experiment, during which it is usually unwise to assess a facial expression as meaning what it appears to mean. A good example occurred in the only experiment in which danger of aggressive attack by the subject on the experimenter was imminent. In a way reminiscent of the hiatus between facial expression and inner mental life which the schizophrenic exhibits, the subject's only evidence of murderous hostility towards both the present writer and Dr. Ardis was a beaming, friendly smile! Also noticeable on occasion was the fact that the laughter of subjects could not, as is often the case with schizophrenics, be taken at its face value: when the experimenter thought the subject was laughing with them it was, on occasion, subsequently apparent that the subject felt sensitive and hostile because he interpreted them as laughing at him.<sup>116</sup>

In an experiment using nitrous oxide to induce model psychosis the subject when, returned to normal described his experience as somebody putting thoughts into his mind and preventing him from saying whatever he wanted to say.<sup>117</sup> In a similar experiment, another subject experienced empathy with some object: She was able to identify herself with chairs and tables.<sup>118</sup> She held that she could exactly feel how a table was, and also described a sort of pressure at the point where the legs of the table are joined to the top.

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116. Ibid., p.180.

117. McKellar, P., Imagination and Thinking, New York, Basic Books, Inc., 1957, p.196. 1957, p. 196.

118. Ibid., p.107.

Synaesthetic descriptions:

Synaesthetic description is a way of describing experiences of one sense modality in language appropriate to another.<sup>119</sup> It has been observed that in private thinking and sometimes in spoken words, some people describe or distinguish various kinds of pain in terms of color: For example, one of McKellar's subjects describing her pain sensations once said:<sup>120</sup> "I used to annoy my mother. She'd ask, "what sort of pain?" and I'd say, "a yellow one." In this example two facts are very clear: that the synaesthetic way of description means something very real to the person using it, but had no meaning to the mother; and that the phenomenon is common to normal persons. The same subject, once referring to various types of pain, described the pain or burn as "yellowish"; also she could imagine "red" pain, but blue pains did not exist in her repertoire.<sup>121</sup> A schizophrenic's expressions are not intelligible because he does not use terms that society has agreed upon. There is good evidence that the schizophrenic is capable of symbolizing externally his internal events in a private manner which is not understood by others.<sup>122</sup>

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119. Ibid., p.64.

120. Ibid.

121. Ibid., p.65.

122. Ruesch, Disturbed Communication, pp.131-132.

When he expresses something, it becomes extremely difficult for others to understand him because he does not give hints for interpreting his statements.<sup>123</sup> A similar happening is quite often observed when one makes speeches to laymen using too many technical terms. Communication is best carried on when the audience knows the meanings of the various terms used by the lecturer.<sup>124</sup>

Schizophrenic behaviour is marked with hallucinations and delusions. Mayer Gross,<sup>125</sup> summarizing mesaline-produced phenomena, mentions the tendency to hallucinate movements of stationary objects which in turn may involve emotionality. It is interesting to note that once a patient responded to his own muscular incoordination and felt that he was subject to some new gravitational forces, the experimenter seeming to move from one part of the room to the other.<sup>126</sup> The hallucinatory perception of some persons changed into "real" people: some of these may turn out to be close relatives of the subject who represent some emotional importance to him.<sup>127</sup>

A patient who is having delusions and hallucinations of all

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123. Ibid., p.132.

124. McKellar, Imagination and Thinking, p.74.

125. Mayer-Gross, W., Experimental Psychoses produced by Drugs, Brit. Med. J., 1951, 2, 318-319.

126. McKellar, Scientific Theory and Psychosis, p.179.

127. Ibid., p.180.

sorts may appear to behave peculiarly to another observer, although the patient may be reacting rationally to his own subjective misperceptions. It is quite convincing that even a normal person when emotional problems are involved does not behave normally: this is well seen in times of rage or excitation. Therefore, this may help to explain the hypothesis of failure of expression: the schizophrenic is not communicating with his "real" social environment, but he is reacting to his delusions and hallucinations.

During a model psychosis experiment the subject was asked to perform a fluency-of-association test - to mention as many adjectives as he could in one minute.<sup>128</sup> But the subject made no response to this. Both an independent observer and the experimenter interpreted this as a paranoid and uncooperative attitude. However, the behavior took on a different aspect when the subject later remarked: "I was trying to think of what an adjective was."

Another factor that is encountered in model psychosis experiments is due to the complex or unfamiliar experiences that the subject often undergoes.<sup>129</sup> Sometimes their experiences are so pleasant and attention provoking to the subject

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128. McKellar, Imagination and Thinking, p.89.

129. Ibid.



that either he does not wish to communicate or he thinks that he has already communicated it, whereas he has not. The schizophrenic is constantly experiencing hallucinations of all sorts and to explain these he makes use of neologisms which render his speech meaningless, thus showing an impairment of communication to an observer who is unaware of the schizophrenic's particular problem.

Neologisms (any newly coined word, or a new use of a word or phrase) are sometimes the cause of serious errors in communication.<sup>130</sup> Curran and Cuttmann,<sup>131</sup> describe neologisms as follows: "Neologisms usually result from patient's urge to describe his experiences, for which purpose an ordinary vocabular is inadequate." They possess a private and new meaning which are understood only by the patient and no one else.

Nitrous oxide has some advantage over mescaline in experiments of communication because the subject can recover his normal state within an hour or less. Steinberg,<sup>132</sup> conducted a model psychosis experiment using nitrous oxide, and the subject experienced periodic loss of consciousness. Whatever the subject had written in intervals showed some

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130. Ibid., p.90.

131. Ibid., p.91.

132. Ibid.

amazing differences between what he had actually written and what he wished to communicate. For example, one of his statements read: "Prolongated solved time on subtly pre-prolongation psychological consultation." Within an hour, after the subject recovered his normal state he tried to retrospect and gave the following written statement in terms of ideas what he was trying to say:

My sense of time feels deranged and time passes very slowly. But this description does not do justice to the full complexity of what I am experiencing. In order to convey the subtlety of the experience to you at all adequately, it would have been necessary for us to have discussed the kind of experience likely to occur beforehand. On the basis of such a talk and an agreed-upon terminology, I could have conveyed more of what the experience feels like.<sup>133</sup>

In another model psychosis experiment, the subject experienced disorientation:<sup>134</sup> many familiar objects disappeared. The subject reported: "You look for the table you were sitting at and it's no longer ther!" This gives us a good idea about the emotional disturbance of the patient caused through disorientation.

Schizophrenic thinking is marked with concretization - that is, displacement from the abstract towards the more

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133. Ibid., pp.91-92.

134. Ibid., p.96.

concrete form.<sup>135</sup> Disturbances in communication may also be explained in relation to concrete thinking. In one mes-caline experiment, a subject was asked in what way a lion and a dog were alike. She could answer only after a long period of blockage.<sup>136</sup> After restrospective investigation, it was revealed that the subject was preoccupied with the sex of the animal: "a 'bitch' or a male dog." Here, the blockage is due to 'misinterpretation' of a single word which is responsible for the disturbance of communication.

Conclusion:

In the second part of this chapter particular care was taken to show the reader about another possible explanation responsible for the apparent splitting between cognition and affect: that is, the failure may be merely in the expression of the inner events. To support this second view various alternative explanations mainly related to the phenomena of the model psychosis were cited. There was considerable proof that emotion cannot be judged in schizophrenics by merely depending upon the face value of such external productions like speech, facial expressions, gestures

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135. Ibid., p.101.

136. Ibid., p.103.

and the like.

Now we have another important question that we want to investigate: (a) when schizophrenic verbal behaviour deteriorates, can he judge emotion pictures? In case he can judge emotion, we can conclude that the schizophrenic knows what experience means although he cannot express himself. In other words the hiatus is somewhere between expression and cognition and affect, as denoted in Figure 2.

In Chapters IV and V, we shall discuss our actual experiment and the results and their bearing on this problem.

CHAPTER IVTHE EXPERIMENTProblem

The purpose of this experiment is to investigate some aspects of verbal and non-verbal communication in schizophrenics; that is, their use of words and of gestures in comparison to normal persons as a first step in deciding whether schizophrenic splitting may be attributable to an inability to express emotions either by speech or gestures. In particular, we are interested in the following questions:

- (1) Can schizophrenics judge emotions as expressed by others?
- (2) How well can schizophrenics perform simple verbal tasks as compared to normals?

The appearance of splitting of intellect and affect can be assessed in this way. If there is a failure in either of these communication systems, then one can not be sure that there is an actual splitting. Possibly the appearance of splitting is given because the patient can not express his emotions either by words, gestures or both.

M E T H O DSubjects

A total of 50 subjects was employed in this experiment: 25 schizophrenics and 25 normals. Both schizophrenic and normal subjects were males. The schizophrenic subjects were chosen from among the patients of the Lebanese Hospital for Mental & Nervous Disorders (Asfuriyeh). They were all Arabs coming from the Arab world; that is, from Lebanon, Syria, Iraq, Jordan, Seoudi Arabia. The final selection of the schizophrenic subjects was made on the basis of their recent psychiatric diagnosis. Upon screening, many subjects were excluded for not meeting our criteria. Most of the schizophrenic subjects were eliminated for the following reasons: not being first admissions, age below 17 or over 50, lack of a satisfactory knowledge of Arabic, participation in insulin or electro-schock therapy, doubtful diagnosis. The range of age of the final group of 25 schizophrenic subjects was between 17 and 45 with a mean of 27.32 years, and all were first admissions not undergoing special treatment at the time they were tested.

An equal number of normals were selected for the control group. All of them were Lebanese and Arabic speaking.

As much as possible, education, age, occupation etc. were equated to those of the schizophrenic group. The range of age for the control group was between 17 and 44; the mean age was 28.68.

Particular care was devoted in selecting the subjects of the control group; none of them had any past history of neurosis or psychosis of any sort. In the absence of intelligence tests, the subjects were equated on the basis of their educational histories. Periods of formal education differ but not significantly between the groups. The median in each case was a little over 7 years and the means 7.48 and 8.20 years for the schizophrenics and normals respectively. For more detailed information regarding the age and educational characteristics of the subjects the reader is referred to Tables 1 & 2, p. 67.

The subjects were tested on verbal tests and on judgement tests. The verbal tests consisted of sentence completion and sentence matching tests. On the front of the card was the sentence completion test and on the reverse, the sentence matching. The test was given in an ascending order - from the easiest to the most difficult ones. The judgement test consisted of 30 photographs of human face purporting to express happiness, sadness or neutral emotion.

The set of pictures was presented to the subject who was told to sort them into three groups - that is, happy, sad, neutral. For further information see under the topic, testing materials, p.68 and Appendices I and II.

In order to have more reliable information about the schizophrenic subjects, we referred to their files in the office, and obtained accurate information about their date of admission, age, occupation, first treatment, education, etc.....

The subjects of the control group were tested in the same manner. To obtain information about their characteristics, we relied on their verbal reports and identity cards. The testing of the schizophrenic lasted about 16 months; that of normals one month.



TABLE 1  
 Characteristics of  
 schizophrenic subjects

|                    | Range | Mode         | Median | Mean  | Standard deviation |
|--------------------|-------|--------------|--------|-------|--------------------|
| Age in years       | 17-45 | 25.5         | 26.16  | 27.32 | 7.48               |
| Education in years | 2-16  | 8.5 &<br>4.5 | 7.30   | 7.48  | 3.94               |

TABLE 2  
 Characteristics of  
 normal subjects

|                    | Range | Mode | Median | Mean  | Standard deviation |
|--------------------|-------|------|--------|-------|--------------------|
| Age in years       | 17-45 | 27.5 | 27.78  | 26.60 | 6.49               |
| Education in years | 4-16  | 6.5  | 7.16   | 8.20  | 3.28               |

### Testing Materials

The testing materials consist of two parts: verbal tests and photographs. The verbal tests have two parts - sentence completion and sentence matching. These tests are intended to measure verbal communication.

The photographs represent a human face in various forms purporting to express different shades of emotions and are supposed to measure judgement of emotions.

#### (a) Sentence completion and matching.

The sentences were not taken from any standard test; they were simply constructed by the writer without paying any attention to their contents. Only length of sentence is considered an important variable regarding the difficulty of the sentence.

The sentence completion test was typed on 21 cards 12.5 x 19 c.m. numbered from 1 to 21. They were divided into seven categories, three cards in each category. Sample sentences are shown in Table 3. The complete set is shown in Appendix I, in English and Arabic. These tests are supposed to measure verbal communication and are arranged in the order of difficulty or complexity. Thus category I is the easiest and consists of 4-word sentences; whereas category VII has 10-word sentences and is supposed to be the most difficult one.

The front of each card contains an incomplete sentence and 5-alternative words from which the subject has to choose one to complete the sentence meaningfully. On the reverse side of each card there were 5-alternative sentences from which the subject has to choose one that would integrate best in meaning with the correctly completed sentence on the front of the card. This sentence was correctly reproduced on the back of the card (Table 3, and Appendix I). Both the alternative words and the alternative sentences are placed at random order to avoid any cue or suggestion. The tests were in Arabic.

TABLE 3

Sample cards of sentence  
completion and matching  
tests

Card No.1Front

The boy went to.....

- a) afternoon
- b) books
- c) money
- d) school
- e) happiness

Reverse

The boy went to school.

- 1) He saw his friend on the way.
- 2) Just now he went down stairs.
- 3) The dog chased the cat.
- 4) Mary went to the market.
- 5) My sister is weeping.

Card No.21Front

We eat three times a day and always sleep at..

- a) easy
- b) morning
- c) night
- d) food
- e) chickens

Reverse

We eat three times a  
day and always sleep  
at night.

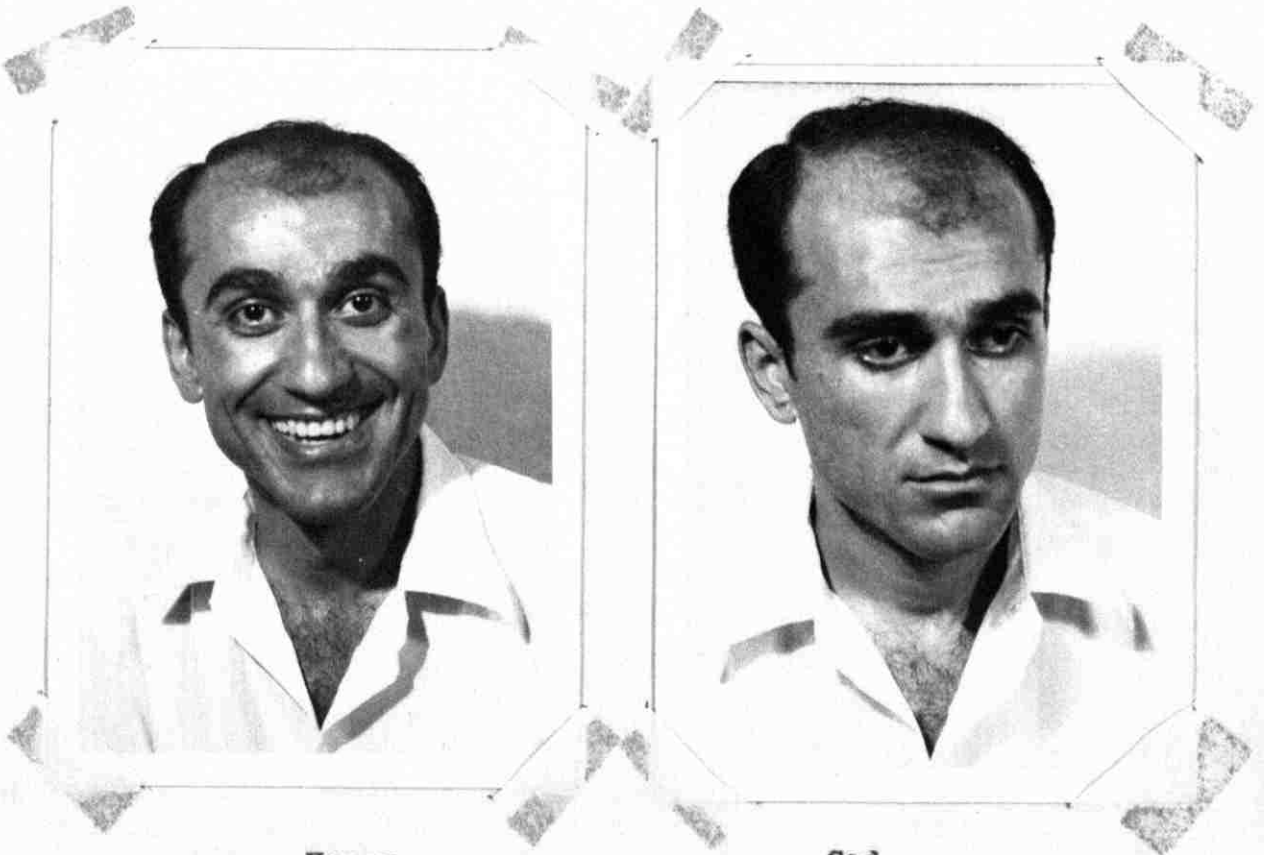
- 1) The night is the time for rest.
- 2) How beautiful is the sky.
- 3) Today, I am very sad.
- 4) Orphans are usually emotional.
- 5) Do not sit on the floor.

(b) Photographs

The same person was photographed in 30 different poses on white cards of 7 x 10.5 c.m. Figure 1 shows 2 of these photographs in full size. The complete set is included as Appendix II. To measure reliability each form was duplicated, thus the total number of photographs amounted to 60. The photographs are supposed to represent (or measure) emotions or feelings in various shades of a continuum: from very sad to neutral (or indifferent) up to very happy. They are supposed to express the following: twelve poses, from very sad to very slightly sad; twelve poses, from very happy to very slightly happy; and six poses neutral although in different forms. The question of validity did not bother us, since the same photographs were to be used by an equal number of normal subjects, and the question was not whether the emotions were really happy or sad, but to what extent the schizophrenics' judgements agreed with those of the normals. To reduce one more variable, the photographs of a male was used. The photographs were numbered from 1 to 60 in random order. This renders the recording of the scores more accurate and simpler. To give the reader a better idea a "score-sheet" is shown in Figure 5, page 75.

Fig. 4. - Happy and sad emotions

The two photographs below are supposed to express two extreme emotions: happy and sad.



Happy

Sad

### Procedure

All of the subjects, schizophrenics and normals, were tested individually and as much as possible under similar conditions. Before starting the actual testing, the subject was engaged in a friendly conversation for a few minutes to provide rapport. Usually this was felt when the subject showed friendly behavior and often asked to sit for the tests.

Particular care was taken in giving instructions to the subjects to avoid personal involvement in relation to their performances. The next step was to give the instructions to the subjects as simply as possible. Both, experimenter and subject sat beside a desk facing each other. Then the experimenter read the sentence completion instructions, at the same time showing the first card to the subject: "On every card there are five alternative words and five alternative sentences. Choose one of the five alternative words to make the sentence meaningful. Then turn the other side of the card and say which sentence fits best in meaning with the sentence you have just completed." The test was oral and no written answers were required from the subjects. Additional information was given to the subjects whenever they asked for it.

The tests were given in ascending order; that is from the shortest towards the longest sentences. As soon as the subject made an attempt to complete the sentence, the experimenter turned over the card, and the subject was asked to choose the sentence that match best in meaning with the one he has just completed. On the reverse side of the card, the sentence to be completed was found in the correct form. Each card was presented in this fashion until all 21 had been completed. The mean time spent by the schizophrenic on the verbal tests was 30 minutes, and that of normals, 15.

After a brief rest, the subject was supplied with a set of 60 photographs and told to sort them into three groups, Happy, Sad, Neutral. To avoid any type of confusion, when a subject finished, he was given some time and told to "check" his sortings once more. Recording of the scores was made by simply writing the numbers of the photographs on the score-sheet under the various headings of Happy, Sad, Neutral, cf. Fig. 5, page 75.



Fig. 5. - Score sheet

Name \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_ Education \_\_\_\_\_

Occupation \_\_\_\_\_ Diagnosis \_\_\_\_\_ Date of entry \_\_\_\_\_

| H<br>A<br>P<br>P<br>Y | S<br>A<br>D | N<br>E<br>U<br>T<br>R<br>A<br>L | No.           | Score |
|-----------------------|-------------|---------------------------------|---------------|-------|
|                       |             |                                 | 1             |       |
|                       |             |                                 | 2             |       |
|                       |             |                                 | 3             |       |
|                       |             |                                 | 4             |       |
|                       |             |                                 | 5             |       |
|                       |             |                                 | 6             |       |
|                       |             |                                 | 7             |       |
|                       |             |                                 | 8             |       |
|                       |             |                                 | 9             |       |
|                       |             |                                 | 10            |       |
|                       |             |                                 | 11            |       |
|                       |             |                                 | 12            |       |
|                       |             |                                 | 13            |       |
|                       |             |                                 | 14            |       |
|                       |             |                                 | 15            |       |
|                       |             |                                 | 16            |       |
|                       |             |                                 | 17            |       |
|                       |             |                                 | 18            |       |
|                       |             |                                 | 19            |       |
|                       |             |                                 | 20            |       |
|                       |             |                                 | 21            |       |
|                       |             |                                 | <b>Totals</b> |       |

## CHAPTER V

### Results and Discussion

The findings on the verbal completion and emotional judgement tests will be discussed separately at first, and their implications discussed in the latter part of this chapter.

#### Sentence Completion and Sentence Matching Tests

Sentence completion refers to the front of each card, where a single word is required to complete a sentence. Sentence matching refers to the reverse of the card where a second sentence has to be selected which is compatible with the correctly completed first sentence.

#### Mean Error by Group

Figure 6, page 78, shows the distribution of errors made by the schizophrenics on the sentence completion tasks; the normals made no errors. Ten patients made no errors at all so that 60% of the patients made at least one mistake, as against 0% of the normals. Although patient and normal groups were equated for age and years of formal education, and hence the difference between the groups cannot be attributed to these factors, the schizophrenics making no

errors were on the average better educated and younger (10.6 years and 24.2 years) than the respective means for the total schizophrenic group (7.5 years and 27.3 years respectively). To check the significance of these differences the t-test was applied and none of them were significant.

Figure 7, page 80, shows similar error distributions for the sentence matching test, only 8 patients obtaining perfect scores on this test as against all 25 normals. Although slightly more errors were made on this test than on sentence completion (3.16 vs. 2.60 means respectively, Table 4)

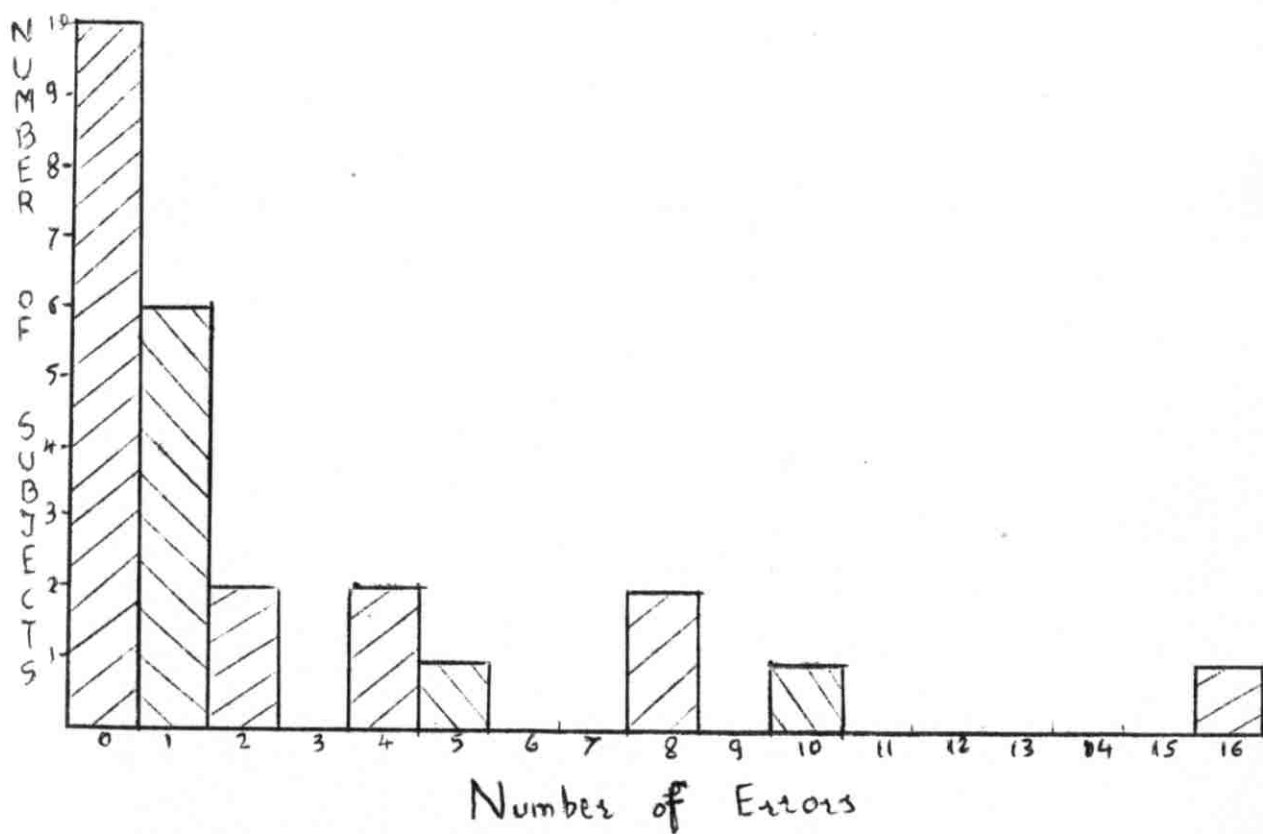
Table 4 - Schizophrenics performance  
on verbal tests

|                     | Mean<br>Errors | Variance | St.Deviation | rho  |
|---------------------|----------------|----------|--------------|------|
| Sentence Completion | 2.60           | 16.08    | 4.01         | 0.89 |
| Sentence Matching   | 3.16           | 19.05    | 4.36         |      |

X Normals made no errors.

as the correlation between the error scores on the two tests amounted to 0.89 the two tests were combined to give a single total error score per subject. The distribution of total errors

Fig. 6. - Sentence completion



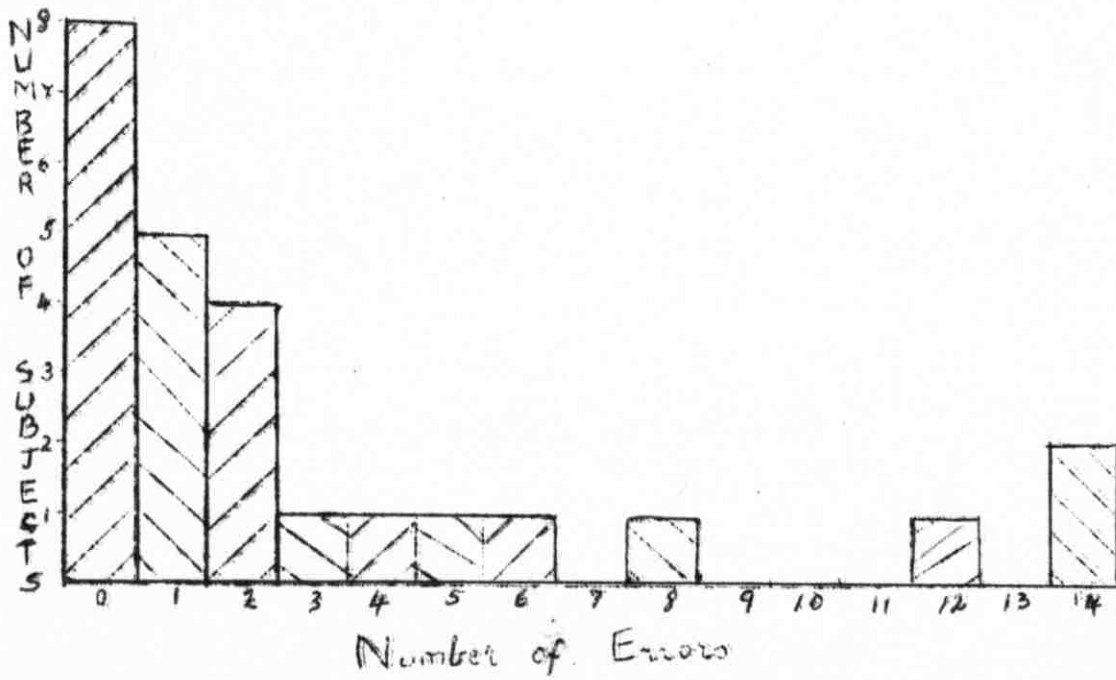
(x). - Normal subjects make no errors.

is shown in Figure 8, page 81, for the schizophrenics only as the normals made no errors. The patients with perfect scores averaged 11.57 years of education and were, on the average, 25.00 years of age. The mean years of education and average age of the other 18 schizophrenics were 5.89 and 30.44 respectively. The t-test was applied to check the significance of these differences, but in either case t was not significant, and are within limits of chance. So schizophrenics who had no errors on the verbal tests were on the average younger and better educated, but these differences are not statistically significant and can be attributed to chance.

#### Errors and Sentence Lengths

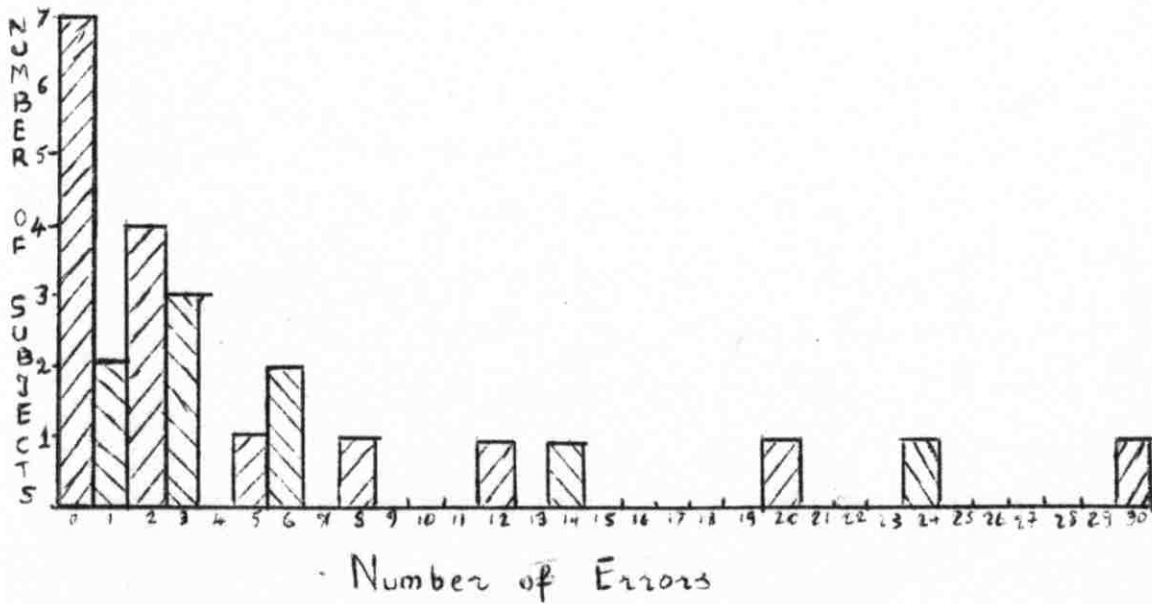
As errors on the sentence completion and matching tests were made only by the patients, further discussion of these tests refers only to this group. The question arises as to how the error scores are made up: are the shorter sentences "easier" than the long ones? The relationship between errors and sentence length in the sentence completion and matching tests are shown in Figures 9 and 10, pp. 83 and 84 respectively. The number of errors are the totals made to the 3 sentences of each length. In Figure 9, there is a marked evidence of

Fig. 7. - Sentence matching



(x) - Normal subjects made no errors.

Fig. 8. - Total errors both in sentence completion and matching



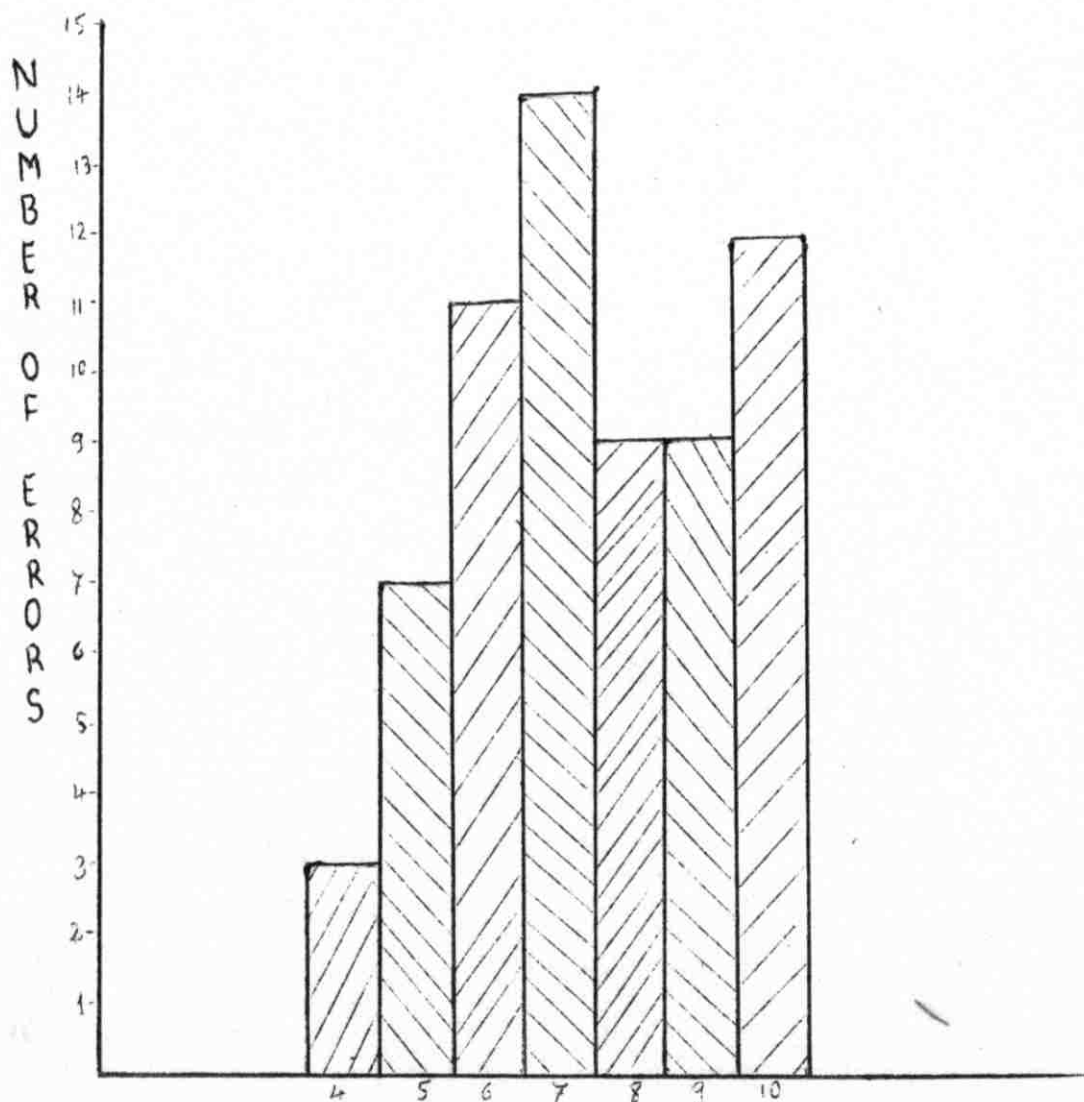
(x). - Normals made no errors.

progressive difficulty as the length of the sentence increases from 4 to 7 words, but the longer sentence shows no consistent trend. The 7-word sentences are also the most difficult (i.e. yield the greatest number of errors) in the sentence matching test. There is no clear trend in these data, although some indication of increasing difficulty with sentence length is suggested if the 7-word sentences are disregarded.

It is rather striking to see the high frequency of errors in 7-word sentences. The 7-word series had 14 errors in completion test and 15 in the matching test. Upon inspection it was discovered that one of these sentences involves emotionality, for example: "Both happiness and sadness are expected from life." May be the words happy and sad have some emotional meaning to the subject. The second sentence of this series is the following: "Talking is always easier than doing some work." In this case it seems that this sentence has a relatively abstract meaning. Therefore it may be explained according to the hypothesis that the more abstract sentences are the more difficult ones, and schizophrenics will show more deficit in performing such tasks. The third sentence of the 7-word series is as follows: "Vinegar is used by cooks in making salad." Here neither



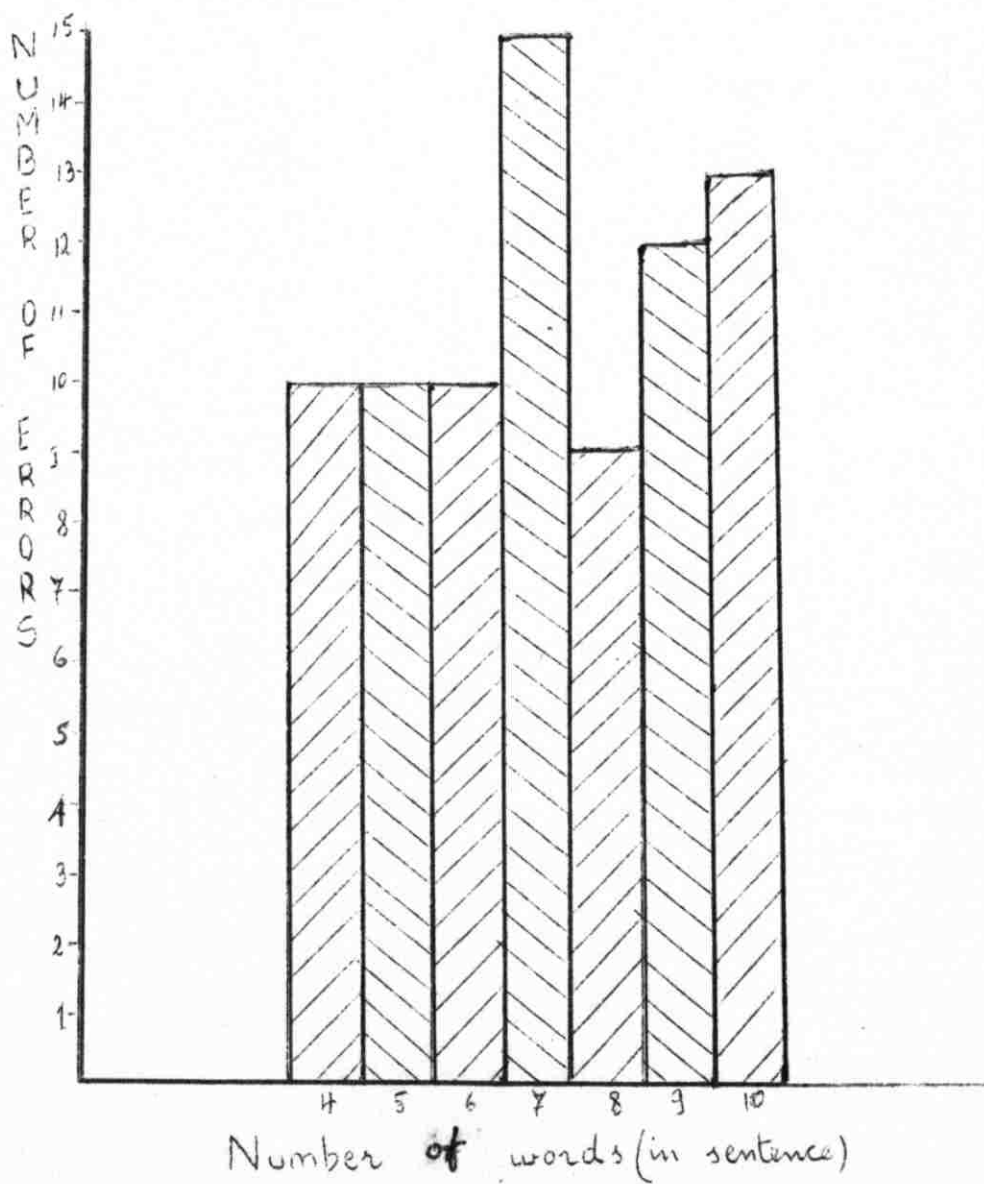
Fig. 9. - Sentence length vs.  
sentence completion.



Number of words (in sentence)

(x) - Normal subjects made no errors.

Fig. 10. - Sentence length  
vs. sentence matching.



(x) - Normals made no errors.

abstractness nor emotions are involved, but it seems that the word salad is not well understood by some subjects; also the idea of using vinegar in making salad may not be so common.

The next series that has the second highest scores of errors is the 10-word sentence category. The first sentence of this series, "Monkeys are bigger than mice, and elephants are bigger than horses," requires abstract thinking, since there is comparison of size. Also the word happy is included in the five alternative words for completing this sentence. The word happy may have some emotional meaning for the subject. In this example, both emotion and abstract thinking are involved. The second sentence of this series, "If you are rich you can have always a better house." The idea of being rich and having a good house may be associated with happiness and thus may involve emotionality. The last sentence of this series, "We eat three times a day and sleep at night," looks to be an ordinary sentence, but in the matching series there are two sentences which suggest emotion. And they are the following: (a) "Today I am very sad," and (b) "Orphans are usually emotional." The words sad, orphan, emotional may have some subjective meaning to the subjects. In this case

errors increase to a considerable extent with length of sentences: the 10-word series had 12 errors in sentence completion and 13 errors in sentence matching. Here three factors may be responsible: emotion, abstractness and length.

It is interesting to note that the 9-word series and the 6-word series had the same number of total errors in both verbal tests. The 6-word series had 11 errors in sentence completion and 10 in matching. The 9-word series had 9 errors in sentence completion and 12 in matching. It is astonishing that the 9-word series does not have more errors than the 6-word series and content analysis does not give any solution to this.

The rest of the errors, disregarding the 7-word series, in general vary with the length of sentences. However the above-mentioned data suggest content as a more effective factor than length in causing errors. Sentences analysis explains the causes of errors by attributing them to content and next to length, that is: emotional tone, abstractness, and then sentence length.

All told there is some indication that the patients might find longer sentences far more difficult to complete, or match, than shorter ones, but the evidence is at best

suggestive and the problem requires further independent study before more general conclusions can be drawn.

At any rate it is clear that the schizophrenics' verbal performance is inferior to those of the normals on these tests even though the specific locus of deficit is not clear. Taking age and education into consideration, younger and better educated patients had better performance and vice versa. But these differences were not statistically significant and are within the limits of chance.

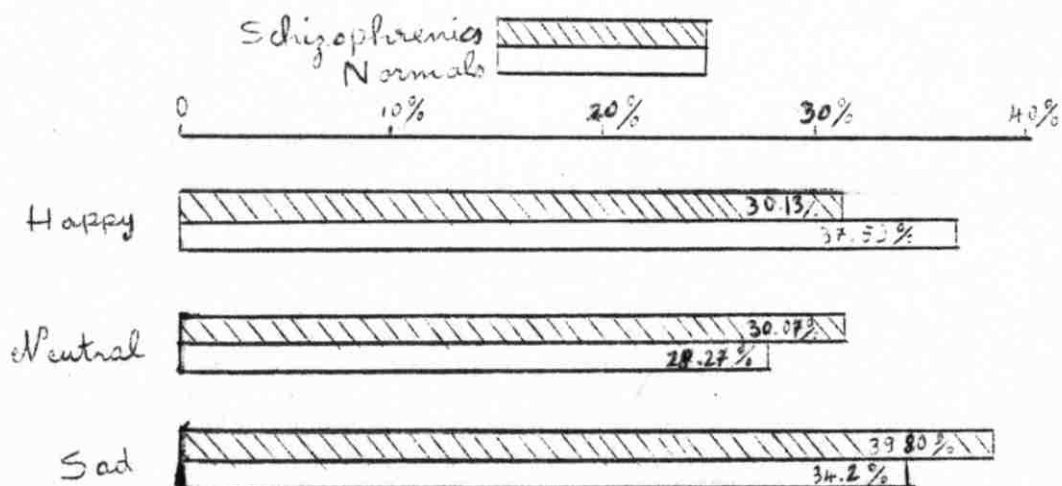
Photograph Judgements:

The subjects were given 30 photographs of a human face purporting to express happiness, sadness, or neutral emotion. Each photograph was presented twice so that every subject made 60 judgements, making 1500 (60x25) judgements in all produced by each group. The distribution of the judgements over the 3 categories happy, neutral, sad, by each group are shown in Table 5 and Figure 11, p. 87 and 88. There is a slight

TABLE 5 - Responses of subjects  
to photographs

| Responses | Schiz. | Normals | $X^2$ | p    |
|-----------|--------|---------|-------|------|
| Happy     | 30.13% | 37.53%  |       |      |
| Neutral   | 30.07% | 28.27%  | 5.68  | 0.94 |
| Sad       | 39.80% | 34.2%   |       |      |

Fig. 11. - Responses of subjects.



tendency for the schizophrenics to judge the pictures more sad than do normals, but the differences is not significant since the chi square is only 5.68.

To determine whether the patient and normal groups agreed on the degree of happiness (or sadness) expressed by the individual picture each photograph was given a "happiness" score. This was computed by weighting each 'happy' judgement of a photograph 1; and each 'sad' judgement - 1; the neutrals were ignored. The rank order, from happiest to most sad of the thirty pictures for each group is shown in Table 6. The picture numbers correspond to the picture as numbered in Appendix II.

**TABLE 6 - Ranking of pictures  
in emotion judgement**

| Picture No. | Sch. Rank | Nor. Rank | Picture No. | Sch. Rank | Nor. Rank |
|-------------|-----------|-----------|-------------|-----------|-----------|
| 1           | 19        | 16.5      | 16          | 3         | 3         |
| 2           | 3         | 6         | 17          | 20.5      | 18        |
| 3           | 25        | 25        | 18          | 23.5      | 23        |
| 4           | 23.5      | 26        | 19          | 17        | 16.5      |
| 5           | 30        | 27.5      | 20          | 9         | 8.5       |
| 6           | 13        | 19        | 21          | 1         | 3         |
| 7           | 9         | 10        | 22          | 7         | 8.5       |
| 8           | 12        | 11.5      | 23          | 15.5      | 14        |
| 9           | 3         | 3         | 24          | 22        | 20        |
| 10          | 27        | 24        | 25          | 5         | 3         |
| 11          | 26        | 29        | 26          | 18        | 22        |
| 12          | 15.5      | 13        | 27          | 28        | 27.5      |
| 13          | 20.5      | 21        | 28          | 6         | 3         |
| 14          | 29        | 30        | 29          | 11        | 11.5      |
| 15          | 14        | 15        | 30          | 9         | 7         |



The Spearman-Brown correlation between these rank orders is 0.968; hence there is almost a perfect agreement between the rankings of the two groups. The patients judge the pictures on the average just like the normals, and whatever may be the case when it comes to expressing emotions there is no doubt that these patients, at least, can judge expressed emotions on these pictures as well as a matched normal control group.

It may be that the schizophrenics are less consistent in judging the pictures than the normals. Each subject judged each picture twice and these judgements could either agree or differ. The mean number of occasions that different judgements were given for the same picture was 4.48 for the normals, and 6.08 for the patients and these means do not differ significantly according to t test in Table 7. On the average the schizophrenics are slightly less consistent than the normals, but the difference is well within the bounds of chance.

TABLE 7 - Disagreement  
within subjects

| Subjects       | Mean | Variance | St. Deviation | t    |
|----------------|------|----------|---------------|------|
| Normals        | 4.48 | 5.68     | 2.38          |      |
| Schizophrenics | 6.08 | 18.66    | 4.31          | 1.62 |

Finally there is the question of the reliability of the individual pictures for each group. Each picture is judged twice by 25 patients and 25 normals. The number of times these judgements differed is an indication of the reliability of each picture. These data are shown in Table 8.

TABLE 8 - Picture judgement  
disagreement scores  
(normals and schizophrenics)

|        | Picture Number |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|--------|----------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
|        | 1              | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Norm.  | 1              | 1 | 9 | 5 | 1 | 3 | 1 | 4 | 0 | 5  | 1  | 3  | 10 | 2  | 7  |
| Schiz. | 8              | 1 | 9 | 6 | 4 | 6 | 1 | 5 | 1 | 1  | 8  | 7  | 15 | 5  | 6  |

|        | Picture Number |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|--------|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|        | 16             | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Norm.  | 0              | 10 | 9  | 5  | 2  | 0  | 1  | 6  | 8  | 0  | 7  | 3  | 0  | 7  | 1  |
| Schiz. | 1              | 7  | 10 | 5  | 4  | 0  | 3  | 7  | 10 | 2  | 8  | 2  | 1  | 6  | 3  |

The mean number of disagreements per picture by each group were 3.73 (normals) and 5.07 (schizophrenics) but the difference is statistically non-significant. (Table 9). The least reliable pictures for the normals are numbers 3, 4, 8, 10, 13, 15, 17, 18, 19, 23, 24, 26, 29, and for the

TABLE 9 - Disagreement  
within pictures

| Subjects       | Mean | Variance | St.Deviation | t    |
|----------------|------|----------|--------------|------|
| Normals        | 3.73 | 11.20    | 3.4          |      |
| Schizophrenics | 5.07 | 12.31    | 3.5          | 1.51 |

schizophrenics are numbers 1, 3, 4, 5, 6, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 23, 24, 26, 29. According to schizophrenics the number of least reliable pictures is 19, with that of normals 13. Except picture number 10, all the other pictures that are least reliable for the normals are also least reliable for the schizophrenics. This indicates a high relationship between the judgement of the two groups. When the above average unreliable pictures according to normals judgements are discarded (and judgements weighted as we did before for all the pictures) the rank order correlation from most happy

to most sad of the remainder between the normal and patient group is 0.921. This indicates almost a perfect agreement between the rankings of the two groups.

According to all the ways that the data have been examined the schizophrenic and normal groups do not differ materially in how they judge photographs expressing positive and negative emotions. It is possible that by asking for finer shades of meaning, by using more than three emotional classes, larger differences might have been found, but earlier studies on normal judgements of expressed emotions in photographs (as cited by Woodworth and Schlosberg)<sup>137</sup> suggest that the most probable findings would have been larger discrepancies within each group.

Conclusions:

On the verbal tests, which were used as indicators of intellectual, cognitive, functioning the patients were decidedly inferior to the normals, but the two groups did not differ in ability to judge expressed emotions. These findings bear indirectly on the problem of splitting in schizophrenia. The split between affect and cognition is

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137. Woodworth & Schlosberg, Experimental Psychology, pp.113-116.

inferred by the psychiatrist on the basis of schizophrenic behavior. Typically there appears to be a discrepancy between a patient's emotional reaction to a situation and the objective, that is cognitive, aspect of the situation. His cognitive judgement of the situation can be assessed by his verbal reaction to it and by his gestures. These two communication systems are in step for normals - we cry when we say we are sad, and laugh when we say we are happy - but in the schizophrenic they are not. His words and gestures are discordant.

Calling this discrepancy a "splitting" of cognition and affect appears to assume that a patient's verbalisations represent his 'true' cognitive assessment of a situation and that his gestures reflect his emotions. The work of McKeller cited in Chapter III suggests that these assumptions may be false. The results of the present study do not solve the problem of splitting in schizophrenia but they do show that schizophrenics can judge simple emotions normally. It does not follow that they can also express them, but it makes the possibility more likely. In that case the assumption that schizophrenics do not experience normal emotions when they do not express normal emotions does not appear to be

contradicted. Schizophrenics do not fail to express emotions because of a breakdown in the gesture communication system, at least in so far as generalisations from the present study are warranted, and it is likely that the emotions which they express are the ones that they actually experience. The ability to judge emotions appropriately was retained even though the patients on the whole failed to perform up to normal standards on a test of verbal completion.

It would have been better to ask schizophrenics to act or express any specified emotion. But this is difficult for at least two reasons:

- (1) It is a difficult thing in case of some chronic patients.
- (2) The problem of scoring will be very difficult and often inaccurate for the expressed emotion would be left to the observer's subjective judgement. We, therefore, began to investigate their ability to judge expressed emotions.

### Summary

At present psychiatry considers conditions of life one of the main factors in accounting for mental disorders. Many social scientists hold that the present conditions of life are changing so quickly that the human organism is not capable to adjust himself to these changes, and this disharmony is an important factor in contributing to abnormal behavior.

As it is cited in Chapter I, according to Coleman's estimate about 50 per cent of all the beds in U.S.A. hospitals are occupied by mental patients. Again depending upon the data of some mental hospitals in U.S.A., about 18 per cent of all first admissions and about 50 per cent of the mental hospital population are schizophrenics. But, we can not generalize these findings because our data do not cover all the mental hospitals of U.S.A., and it is unfortunate that records of other hospitals were not available.

The above-mentioned information regarding schizophrenia convinces us that schizophrenia comprises a social problem. Also we have discussed schizophrenia as a personal problem. The personal experiences of the patients are described dramatically by themselves after their recovery, and one

can realize how terrible are the experiences of these patients.

Schizophrenia is a complex disease and not easy for the layman to understand its malignancy at the early stages. It may develop slowly or abruptly, usually in young adults. It may also happen in adolescence or at any other age.

Principally psychology is the study of behavior. The psychologist, therefore, as a scientist is interested in any type of behavior, normal or abnormal - and in this case in schizophrenic behavior. But schizophrenia is a complex disorder, and we can deal only with one of its aspects - namely splitting.

In ancient times mental disorders were not well-defined and classified into disease entities. It is true that the ancient history and literature is rich with descriptions of abnormal behavior, but they comprise merely isolated cases of madness. The ancient Greeks regarded mental disorders nothing but abnormal behavior, and mental patients were not treated harshly. Unfortunately later on in the Middle Ages causes of mental disorders were attributed to sin, witchcrafts, love, sex, and often dominance by the devil or evil spirits. Accordingly the patients during this period were treated with very harsh methods with the intention of expelling the evil spirits.



In the second half of the eighteenth century the scientific questioning was gradually developing, and up to the early twentieth century the organic point of view was dominant. The pioneers in this field were mainly Griesinger and Kraepelin. The so called somatologists held that mental disorders were mainly manifestations of brain diseases. It was in the early twentieth century when Bleuler set forth the idea that dementia praecox had organic basis but psychological accompaniments too had an important role in the causation of the disease, and he introduced the term schizophrenia to denote dementia praecox which he meant 'split mind' - namely, the splitting of the psychic functions.

Bleuler regarded splitting as the outstanding symptom of schizophrenia, and he incompatibility of affect and thought. To judge failure of cognition and emotion we have depended upon communication mechanism - in short, speech expresses cognition and gestures express emotions.

An alternative explanation of splitting assumes a failure in expressing the inner experiences, and the evidence for this is based on "model psychosis" experiments.

McKellar is one of the major advocates of the second view, and we have cited many of his experiments in Chapter III. His findings suggest that there may be no "real" splitting in schizophrenic behavior, but it may be due to failure of communication - in other words, a failure in expressing correctly the inner events.

In this experiment we were interested in the following:

(a) Can schizophrenics judge emotions accurately as expressed by others?

(b) How well can schizophrenics perform simple verbal tests compared to normals? The verbal tests were used as indicators of cognitive functioning, and the schizophrenics' performance on these tests were definitely inferior to that of normals. However, the two groups did not differ materially in their ability to judge expressed emotions in pictures.

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APPENDIX ICOMMUNICATION JUDGEMENT TESTS

- (a) Sentence Completion.
- (b) Sentence Matching.

On every card there are 5 alternative words and 5 alternative sentences. Choose one of the 5 alternative words to make the sentence meaningful. Turn the other side of the card and say which sentence fits best in meaning with the sentence you have just completed.

No. 1.Front

The boy went to.....

- a) afternoon
- b) books
- c) money
- d) school
- e) happiness

Reverse

The boy went to school.

- 1) He saw his friend on the way.
- 2) Just now he went downstairs.
- 3) The dog chased the cat.
- 4) Mary went to the market.
- 5) My sister is weeping.

No.2.Front

The cat ate the.....

- a) hat
- b) money
- c) music
- d) meat
- e) shirt

Reverse

The cat ate the meat.

- 1) He is a very happy man.
- 2) She hid herself in the kitchen.
- 3) He was our neighbour.
- 4) Paul is a strange man.
- 5) Music is always pleasant.

No. 3.Front

Mothers feed their young.....

- a) Mice
- b) cats
- c) babes
- d) customers
- e) stones

Reverse

Mothers feed their young babes.

- 1) All women are very kind.
- 2) They are very young and helpless.
- 3) Mice are very dirty creatures.
- 4) Bread is a cheap commodity.
- 5) Students like their teachers.

No. 4.Front

My mother's grandfather was very.....

- a) books
- b) table
- c) cheese
- d) jars
- e) tall

ReverseMy mother's grandfather was  
very tall.

- 1) All birds have feathers.
- 2) He was a very stingy person.
- 3) Wine is better than water.
- 4) Boys play foot-ball in the after-noon
- 5) Precious stones are rare.

No. 5.Front

The hunter was looking for his.....

- a) dog
- b) illness
- c) name
- d) head
- e) sad

ReverseThe hunter was looking for his  
dog.

- 1) Pianos are sold in all cities.
- 2) Dancing is a light exercise.
- 3) Dogs are of great help in hunting.
- 4) The birds fly in the sky.
- 5) Teachers like bright students.

No. 6.Front

Ducks always like swimming in...

- a) lemon
- b) chairs
- c) dirt
- d) water
- e) smoke

ReverseDucks always like swimming in  
water.

- 1) Their eggs are very delicious.
- 2) Friends were busy elsewhere.
- 3) The streets leading to our house  
is full of stones.
- 4) The valley is very deep.
- 5) Boys are taller than girls.



No. 7.Front

Our rabbit sleeps in a wooden.....

- a) box
- b) cup
- c) grapes
- d) knife
- e) dish

ReverseOur rabbit sleeps in a wooden  
box.

- 1) Cats chase mice.
- 2) Apples are cheaper than pears.
- 3) All rivers empty into seas.
- 4) Doctors gain more than barbers.
- 5) It is very pleasant to keep  
rabbits at home.

No. 8.Front

Snow is found on very high.....

- a) mountains
- b) education
- c) seas
- d) bridges
- e) minds

ReverseSnow is found on very high  
mountains.

- 1) Now it has become a rabbit.
- 2) There is no food in the kitchen.
- 3) The camel is an important vehicle  
in the desert.
- 4) Oranges are very juicy.
- 5) Some rivers are formed by the  
melting snow of the mountains.

No. 9.Front

Wild beasts in summer live in.....

- a) moon
- b) caves
- c) trains
- d) leaves
- e) dishes

ReverseWild beasts in summer live in  
caves.

- 1) Singing birds are rare.
- 2) Bees make honey.
- 3) Caves are natural houses for lions.
- 4) Education is very important.
- 5) God will help the poor.

No. 10.Front

Both happiness and sadness are expected from...

- a) bread
- b) broom
- c) stove
- d) mice
- e) life

ReverseBoth happiness and sadness  
are expected from life.

- 1) My father is always happy.
- 2) My mother is quite tall.
- 3) Girls are more talkative than boys
- 4) It is good to keep a pet at home.
- 5) Gold is heavier than silver.

No. 11.Front

Talking is always easier than doing some....

- a) sun
- b) pool
- c) bread
- d) work
- e) smoke

Reverse

Talking is always easier than doing some work.

- 1) Olives are Mediterranean fruits.
- 2) Pigs are usually fat
- 3) Working requires more attention and effort.
- 4) We no more sell shoes.
- 5) You can go anytime you like to.

No. 12.Front

Vinegar is used by cooks in making.....

- a) bread.
- b) salad.
- c) silk
- d) music
- e) happiness

Reverse

Vinegar is used by cooks in making salad.

- 1) It is very silly.
- 2) Good professors give the same answer
- 3) I never wanted to buy a horse
- 4) The sea was too rough
- 5) It makes it taste more palatable.

No. 13.Front

In my school days, I always liked long....

- a) tails
- b) men
- c) cats
- d) vacations
- e) dogs

Reverse

In my school days, I always  
liked long vacations.

- 1) My father had a bid knife
- 2) The Lebanese flag is very simple
- 3) I like colored pictures
- 4) Switzerland is a beautiful country
- 5) I was somewhat lazy.

No. 14.Front

I have been always very fair, honest and.....

- a) water
- b) cheese
- c) bread
- d) apples
- e) trustworthy

Reverse

I have been always very  
fair, honest and trust-  
worthy.

- 1) I expect others to behave the same way
- 2) All living things die
- 3) Hurry up, let us go home
- 4) The sky is very high
- 5) Stone is used for building

No. 15.Front

Her most beautiful and delicious cakes always  
won.....

- a) prizes
- b) ladder
- c) cats
- d) bread
- e) table

Reverse

Her most beautiful and  
delicious cakes always won.

- 1) We have only four chairs
- 2) In winter our village is very cold
- 3) There are no good schools here
- 4) I prefer beer to water
- 5) The same cakes were sold at a very high price

No. 16.Front

All great powers fight for their profit  
prestige and

- a) hats
- b) shoes
- c) slippers
- d) cheese
- e) independence

Reverse

All great powers fight  
for their profit prestige  
and independence.

- 1) Life is very short.
- 2) Water freezes at 0°c.
- 3) This is what politicians say
- 4) Milk is a delicious food
- 5) It is always nice to wear new clothes.

No. 17.Front

Cats, dogs, rabbits, pigs, cows, mice,  
 beetles, flies are,.....

- a) saint
- b) yellow
- c) honest
- d) jealous
- e) animals

Reverse

Cats, dogs, rabbits, pigs, cows, mice, beetles, flies are animals.

- 1) Money is a great necessity
- 2) America is cooler than Africa
- 3) Usually musicians are nervous
- 4) They all require food to keep alive
- 5) I have only two brothers.

No. 18.Front

When a person gets old his hair usually gets...

- a) broom
- b) black
- c) honey
- d) grey
- e) potato

Reverse

When a person gets old his hair usually gets grey.

- 1) It seems this is the rule of the nature
- 2) Chinese never suffer from ulcers.
- 3) I prefer a car to a horse
- 4) They are very intelligent
- 5) There are three main roads to  
 Asfurieh

No. 19.Front

Monkeys are bigger than mice, and elephants  
are bigger than.....

- a) music
- b) freedom
- c) stars
- d) horses
- e) happiness

Reverse

Monkeys are bigger than  
mice, and elephants are  
bigger than horses.

- 1) I hate beggin
- 2) Dirty clothes are a bad sign
- 3) Life is not possible without water
- 4) The earth revolves around the sun
- 5) Affrica is full of elephants.

No. 20.Front

If you are rich you can always have better...

- a) yellow
- b) house
- c) heavy
- d) sky
- e) flies

Reverse

If you are rich you can  
always have better houses.

- 1) Money is an important factor
- 2) Mountains are cooler than plains
- 3) Mosquitos live in stragnant waters
- 4) I do not like talkative peoples.
- 5) Punishment is the only way.

No.21.Front

We eat three times a day and always sleep at...

- a) easy
- b) morning
- c) night
- d) food
- e) chickens

ReverseWe eat three times a day  
and always sleep at night..

- 1) The night is the time for rest
- 2) How beautiful is the sky
- 3) Today, I am very sad
- 4) Orphans are usually emotional
- 5) Do not sit on the floor



ذهب الولد باكرا الى \_\_\_\_\_  
الفرح - العصفور - المدرسة - الدراهم - بعد الظهر

ظهر

- (1) نزل الولد الان على السدج  
(2) فرأى استاذة نازلا على السدج  
(3) لحق الكلب القطعة  
(4) ذهبت ماري الى السوق  
(5) كان راسه يؤلمه قبل اسبوعين
- ذهب الولد باكرا الى المدرسة

اكلت القطعة الكبيرة السوداء \_\_\_\_\_  
القبعة - الدراهم - الموسيقى - اللحم - القميص

ظهر

- (1) انه رجل سعيد جدا  
(2) ثم اختبات في المطبخ  
(3) كان جارنا  
(4) انه رجل غريب  
(5) الموسيقى غذاة للروح
- اكلت القطعة الكبيرة السوداء اللحم

الام الحنونية تحب اطعام \_\_\_\_\_  
الكراسي - النبيذ - الاطفال - الغيوم - الطاولات

ظهر

- (١) جميع النساء حنونيات
- (٢) الفئران حيوانات تاتي بالامراض
- (٣) الطلاب يحبون اساتذتهم
- (٤) الخبز ارخص من اللحم
- (٥) لان الاطفال بحاجة الى عناية الام

وجوه

(٤)

ان جد والدتي المسن كان \_\_\_\_\_  
كتبا - طاولة - جينة - جرة - طويلا

ظهر

- (١) كل الطيور لها ريش
- (٢) وكان يخيل جدا
- (٣) النبيذ الذ من الماء
- (٤) تطير الطيور في السماء
- (٥) الجواهر سادرة الان

وَجْه

كان الصياد الماهر يبحث عن \_\_\_\_\_  
كلبه - مرضه - اسمه - رأسه - حزنه

ظَهْر

- (١) يباع البيانو في جميع المدن
- (٢) الرقصة رياضة خفيفة
- (٣) الكلاب مفيدة جدا اثناء الصيد
- (٤) يلعب الاولاد بكرة القدم بعد الظهر
- (٥) يحب المعلمون الطلاب المجتهدين

وَجْه

يحب الموزان يسبح في \_\_\_\_\_  
الليمون - الكراسي - القذارة - الماء - الدخان

ظَهْر

- (١) بيض الوز بندي جدا
- (٢) يوجد على طريقي بيتنا احجار كبيرة
- (٣) كان اصدقاؤنا مشغولين في مكان آخر
- (٤) كان الوادي واسعا جدا
- (٥) الصبيان اشطر من البنات

تنام ارانبنا الجميلة دائما براحة في —  
القدح - العلب - العنب - الموس - الصحن

ظَهْر

- (١) تطارد القطط الفئران  
(٢) انه مسل جدا ان نربي الارانب في منازلنا  
(٣) تمام ارانبنا الجميلة دائما براحة في  
الصناديق  
(٤) جميع الانهار تصب في للبحار  
يرسح الاطباء اكثر من الفلاحين  
(٥) التفاح ارخص من الاجاص

تتراكم الثلج الجميلة البيضاء في اعالي —  
الثقافة - البحار - الجسور - الجبال - الافكار

ظَهْر

- (١) هذه هي العادة الان  
(٢) لا يوجد طعام في المطبخ  
(٣) تتراكم الثلج الجميلة ايضا في  
اعالي الجبال  
(٤) تجعل ضروري جدا للسفر في الصحراء  
تتألف الانهار من ذوبان الثلج في اعالي  
الجبال  
(٥) البرتقال له عصير غزير

—————  
وجه

تسكن الحيوانات المفترسة في الصيف داخل ———  
القمر - المغاور - القطار - الاوراق - الصخور

—————  
ظهر

- (١) الطيور المغردة نادرة جدا  
(٢) يصنع النحل العسل  
(٣) المغاور مساكن طبيعية للاسود  
(٤) الثقافة ضرورية جدا للانسان  
(٥) يساعد الله المحتاجين
- تسكن الحيوانات المفترسة في الصيف  
داخل المغاور

—————  
وجه

نحن نتوقع السعادة والحزن كل يوم من ———  
الخبز - المكسة - الحجر - الفئران - الحياة

—————  
ظهر

- (١) والدي دائما مسرور  
(٢) امي طويلة القامة  
(٣) البنات ثائرات اكثر من الصبيان  
(٤) انه مفيد جدا ان نربي حيوانا اهليا في البيت  
(٥) الذهب اثقل من الفضة
- نحن نتوقع السعادة والحزن كل يوم  
من الحياة

انه دائما اسهل لنا وللناس التكلم عن  
الشمس - البركة - الخبز - العمل - الدخان

ظهــــــــــــــــر

- (١) يزرع الزيتون في حوض البحر المتوسط
- (٢) الخنازير تكون عادة سمينة
- (٣) انه دائما اسهل لنا وللناس التكلم يتطلب العمل دائما الانتباه وبذل الجهد
- (٤) عن العمل انتقالا نبيع الاحذية بعد الان
- (٥) تستطيع الذهاب في اى وقت شئت

يستعمل الطباخون دائما الخل الجيد لكي يصنعوا  
الخبز - السلطة - الحريز - الموسيقى - الفرح

ظهــــــــــــــــر

- (١) انه عمل احمق
- (٢) الاساتذة الماهر يجيبون جوابا واحدا على نفس السؤال
- (٣) استعمل الطباخون دائما الخل انني لم ارقب ايدا في شواء حصان
- (٤) انه يجعل الطعم اللذ
- (٥) كان البحر هائجا جدا

وَجْه

في ايام الدراسة كنت احب دائما ان تطول  
الذنب - الرجال - القطط - العطلة - الكلاب

ظَهْر

- (١) كان عند والدي سكنين كبير
- (٢) العلم اللبناني مؤلف من الوان قليلة جدا
- (٣) احب الصور الملونة
- (٤) سوسرا بلاد جميلة
- (٥) كنت كسولا في صغرى

وَجْه

في جميع الاعمال التي فعلتها كنت عادلا مخلصا  
ماء - جبنا - خبزا - تفاحا - امينا

ظَهْر

- (١) اتامل ان يكون جميع الناس هكذا
- (٢) جميع الكائنات الحية ستمون يوما
- (٣) استعجل لكي نذهب الى البيت
- (٤) السماء عالية جدا
- (٥) تشجع عمل الاحجار للبناء

ان الحلويات التي كنا نصنعها كانت تروح \_\_\_\_\_  
جائزة - سلما - خبزاً - طاولة - قططا

ظهـر

- (١) بيعت الحلويات باسعار باهظة جدا
  - (٢) يوجد عندنا اربعة كراسي فقط
  - (٣) ان قريتنا باردة جدا في الشتاء
  - (٤) لا يوجد مدارس ممتازة ههنا
  - (٥) افضل البيرة على الماء
- ان الحلويات اللذيذة التي  
كنا نصنعها كانت تروح جائزة

جميع البلدان القديمة لكبيرة تحارب لاجل منقعتها ومكانتها ولاجل \_\_\_\_\_  
القبعات - الاحذية - الشحاطات - الجبن - استقلالها

ظهـر

- (١) الحياة قصيرة جدا
  - (٢) يجمد الماء في الدرجة الصفر
  - (٣) هكذا يقول السياسيون
  - (٤) لاجل منقعتها ومكانتها ولاجل استقلالها
  - (٥) انه مفضل دائما ان نلبس الملابس الجديده
- جميع البلدان القديمة تحارب  
الجليب طعام مفيد للجميع



القطط والكلاب والارانب والخنازير والابقار والفئران والزيز والذباب هي  
 قبعات - حيوانات - صفراء - قديس - فيور

## ظهـر

- (١) الدراهم ضرورة جدا  
 (٢) اميركا ابرد من افريقيا  
 (٣) الموسيقون عادة يغضبون بسرعة  
 (٤) جميع هؤلاء يلزمهم الطعام كي يعيشوا  
 (٥) لي اخ واحد فقط
- القطط والابقار والكلاب والارانب  
 والخنازير والفئران والزيز والذباب  
 هي حيوانات

عندما يتقدم الانسان في العمر يصبح شعره ذولون  
 مكنسة - اسود - غسل - ابيض - بطاطا -

## ظهـر

- (١) هذه هي عادة الطبيعة  
 (٢) الصينيون لا يصابون بمرض القرحة ابدا  
 (٣) افضل السيارة على الحصان  
 (٤) انهم انكياا جدا  
 (٥) يوجد ثلاث طرق معبدة للعصفورية
- عندما يتقدم الانسان في العمر يصبح  
 شعره ذولون ابيض

اجسام القردة اضعف من الفئران واجسام الفيلة اضعف من اجسام  
الخلاص - الموسيقى - الاحصنة - النجوم - الفرس .

## ظهـر

- (١) انني امقت الشحاذيين
- (٢) يوجد في قارة افريقيا العديد من الفيلة
- (٣) الثياب القذرة علامة سيئة
- (٤) تدور الارض حول الشمس
- (٥) لا نستطيع العيش بدون الماء



اذا كنت غنيا تستطيع ان تشتري في كل وقت اجمل  
الاصغر - المساكن - الثقيل - السماء - الذباب .

## ظهـر

- (١) الدراهم مهمة جدا في الحياة
- (٢) الجبال ابرد من السهول
- (٣) البراغيث تعيش في المستنقعات
- (٤) لا احب الناس الذين يتكلمون كثيرا
- (٥) العقاب هو الطريق الوحيد

## وَجْه

اننا ناكل في كل يوم ثلاث مرات ونستريح دائما في  
اليمين - النهار - الليل - الاكل - المطبخ \*

## ظَهْر

- (١) الليل هو وقت الراحة  
(٢) ما اجمل منظر السماء  
(٣) انني في هذا اليوم حزين جدا  
(٤) اليتيم يحزن بسرعة  
(٥) لا تجلس على الارض
- اننا ناكل في كل يوم ثلاث مرات ونستريح دائما في  
الليل

APPENDIX II

EMOTION JUDGEMENT TESTS

Photographs Purporting Happy, Sad, and Neutral Emotions.



1



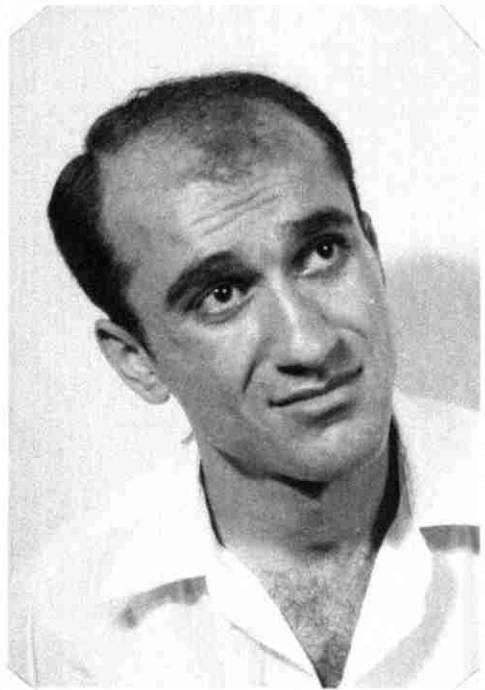
2



3



4



5



6



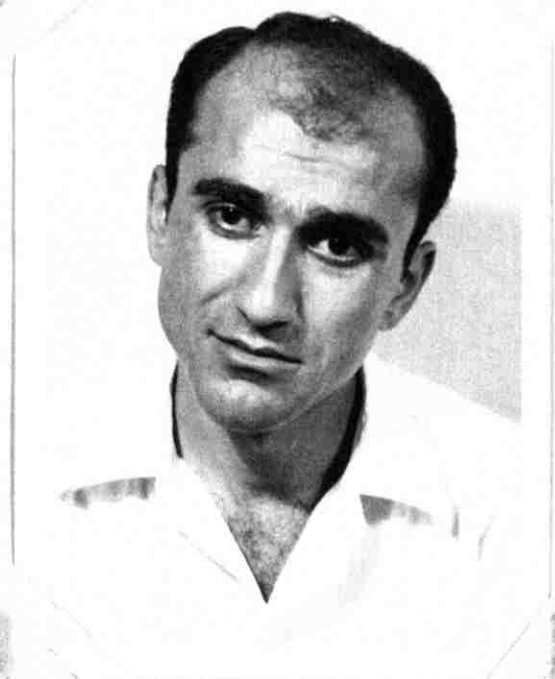
7



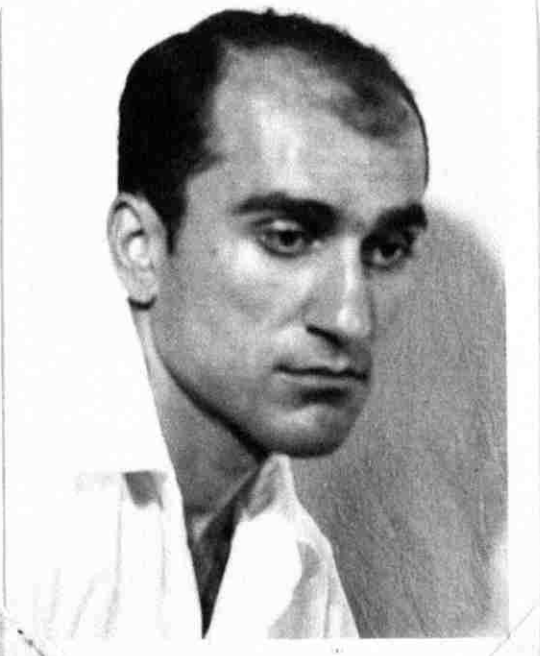
8



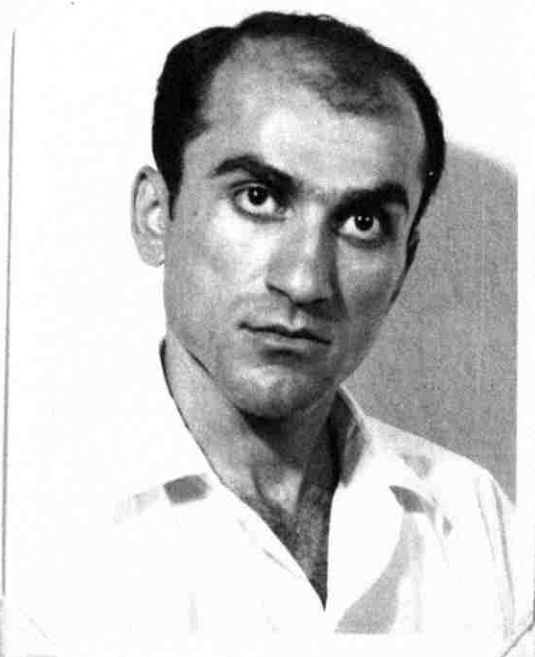
9



10



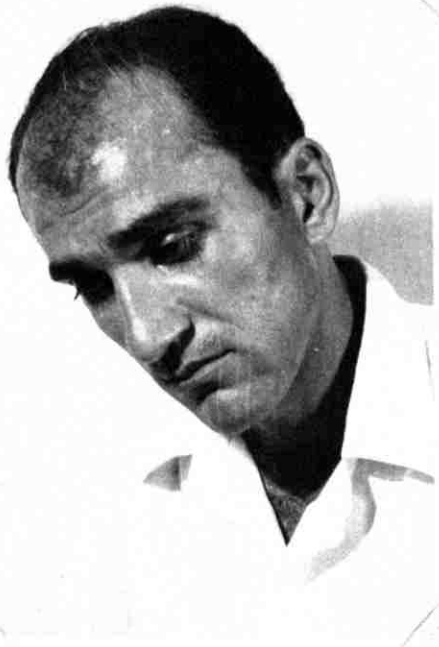
11



12



13



14

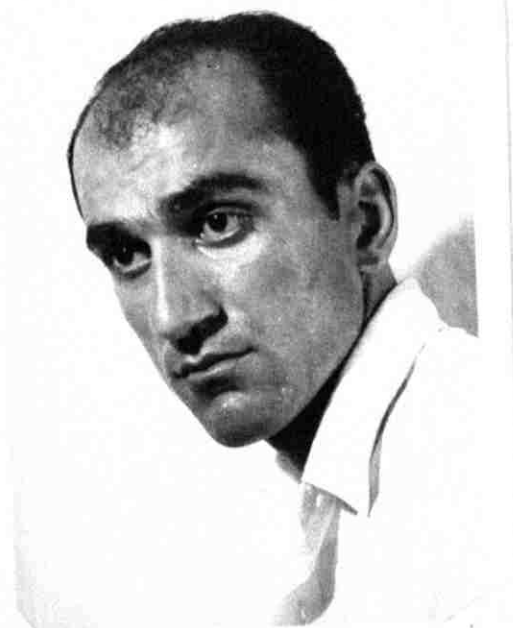


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