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Schizophrenia in childhood

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SCHIZOPHRENIA IN CHILDHOOD

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INTRODUCTION

The concept of child psychiatry is a twentieth century achievement. In previous ages and eras man dealt with one another as if everyone in the community or nation was one--as if humans were homogeneous. Great writers and philosphers wrote treities in which may be found many profound truths about mankind. However, there was a basic fault. These truths regarded mankind as a single unit and the philosophers made generalizations in which the human race was considered as one mass.

It was not until the twentieth century that great thinkers of the times came to realize that mankind was not homogeneous but heterogeneous. Each person was an individual and would react to a given situation in a manner different from his neighbor. Instead of studying the masses of people, psychologists and psychiatrists started to concern themselves with the problems of the individual person. Educators came to the realization that their program should be flexible and should fit the capabilities and limitations of those they taught. Heretofore students had to fit a rigid program.

DEVELOPMENT OF CHILD PSYCHIATRY

Through the first half of the twentieth century there have been several events that have given impetus to the development of psychiatry and especially psychiatry as it relates to children. In 1905, Binet published a group of tests which set up a norm of performance with regard to scholastic ability. These tests were given to thousands of Paris school children and the norms for different ages and situations were determined. Binet's work was of importance because it brought into existance a concrete and reliable method of helping teachers to evaluate a child's mental age. Thereby instruction could be directed at a given pupil with the pupil's needs in mind. Binet's work also pointed up the fact that people are heterogeneous.

Dynamic psychiatry, that which saw the origins of a person's difficulties in happenings and experiences of the past, replaced the old type of static psychiatry, which basically just described a person's disease without trying to explain a person's actions by tracing them back to their origin; childhood and the difficulties encountered in children themselves seemed to be a fertile ground for psychiatric exploration.

Also present at the turn of the century was the establishment of juvenile courts. When a child was guilty of a misdeed, these courts not only tried to give punishment commensurate to the misdeed, but also attempted to discover why the child had performed as he did and what had caused the child to be guilty of a transgression. With the establishment of juvenile courts came juvenile court probation. This consisted of a court probation officer being put in charge of a child and trying to direct the child's interests toward constructive and wholesome goals.

Other organizations were now being established for the purpose of helping children who were in undesirable situations. One was the foster home placement organization. The juvenile courts could put a child into one of these homes when the child's own home set-up was given to neglect, brutality or other forms of child irresponsibility.

Out of the recognition of individual differences, as revealed by psychometric tests, grew a movement designed to individualize instruction. The ultimate goal was to have special classes for children with similar handicaps. Such classes were to be taught by especially trained teachers.

The next bright light on the horizon was the establishment of child guidance clinics. Such clinics had a psychiatrist, psychologist and social worker as a nucleus.

Parents, schools, and child-caring groups were encouraged to bring or refer children with puzzling or non-conforming behavior to these clinics. A child's behavior could now be correlated with the parents' and teachers' attitudes. Behavior which had been previously regarded as bad came to be recognized as the individual child's reaction to attitudes and situations about him.

The scope of educational programs also changed. Instead of focusing all of the program's attention on the teaching of facts, orderliness, morality and obedience, some teachers directed its energies towards the development of the child's social and emotional growth and education. In connection with this change in the philosophy of education, arose a need for visiting teachers. Their task was one of working in the home atmosphere with children who had special problems.

Many of these trends, associations and programs are new and still in the growth process. "But on the whole child psychiatry has come of age and has come to stay." (31)

HISTORY OF TERM SCHIZOPHRENIA

Having just briefly discussed the growth of child psychiatry the author believes that a short discourse on the history of the term schizophrenia is in order. Although not so called, the clinical picture we now know as schizophrenia was probably first described in 1849 by John Conolly of England. He pointed out that young persons not infrequently fall into a state somewhat resembling melancholia. This they did without any discoverable cause of sorrow, and certainly without any specific grief. They became indolent and pursued their usual occupations or recreations mechanically and without interest. The intellect, passions and affections all seemed inactive or deadened and the patients became utterly apathetic.

The term dementia praecox was first used in 1860 by a Belgian psychiatrist named Morel. He interpreted the disorganization of personality seen in a fourteen year old boy as an arrest of development to be included with mental deficiency as a variety of intellectual, physical and moral degeneracy due to heredity. 'Dementia' indicated an irresistable trend toward progressive deterioration; 'praecox' alluded to an early onset in life.

In 1871 Hecker described hebephrenia as follows. "Its characteristic features are: its appearance in

connection with puberty, the succession or changing appearance of various forms (melancholia, mania and confusion), the very quick termination in a psychic enfeeblement, and a characteristic form of final deterioration, the evidences of which can be seen in the first stages of the disease." (43) In 1874 Kahlbaum described catatonia as that condition in which the patient sits quietly or completely motionless, immovable, with a staring countenance. The eyes are fixed on a distant point, and sensory impressions are missing.

At Munich, in 1896, the great professor of psychiatry, Emil Kraepelin, pointed out that a common denominator existed among such apparently unrelated syndromes as hebephrenia, catatonia and many paranoid states. He defined dementia praecox as a distinct syndrome with a series of disease pictures, the common feature of which was its termination in a special kind of state of mental weakness and deterioration. He also thought that certain fundamental psychological reactions were significant in dementia praecox. Such reactions consisted of combinations of hallucinations, delusions, odd distorted emotional expressions, disorders of attention and judgment, lessened capacities for work and the loss of thought processes. All of this was associated with relatively intact perceptive capacities, clear sensorium

and memory retention. These writings and thoughts of Kraepelin brought some order into what had previously been considered clinical chaos.

In 1906 Adolf Meyer initiated the thesis that dementia praecox was not a disease entity, but rather a type of reaction developed in certain personalities as a result of progressive difficulty in adaptation and that the accumulation of faulty habits of reaction lead to a habit deterioration. According to Meyer's psychobiological concepts, classification of mental illnesses should be based on the grouping of patients according to such of their performances as one could observe. The focus of attention is the patient and what he does and not an impersonal disease process.

Eugen Bleuler, in 1911, introduced the term schizophrenia. In doing so he turned away from the prognostic implications contained in dementia praecox. He felt that a hopelessly pessimistic attitude was not always justifiable and stated that the disturbance could come to a standstill at any stage. He also said that some of its symptoms might disappear either partially or entirely. If the process in a patient did progress, it then lead to dementia. Bleuler conceived the disorder as a definite disease process, but thought its essential nature was a

splitting of the personality, or schizophrenia, rather than a mental deterioration. He stressed a psychodynamic interpretation of what he observed in his patient's behavior. Bradley (11) points out that Bleuler thought there were certain primary symptoms resulting directly from a fundamental disorder of the thought processes. Prominent among these primary symptoms were; logically unrelated ideas which did, however, have some relationship to each other in the patient's mind; the use of symbols when the normal mind would use the real objects; the use of vague notions instead of concrete statements; and combinations of ideas in a condensation process. Secondary to these primary symptoms were a number of other manifestations including autism, delisions, illusions, hallucinations, negativism and many catatonic signs.

Thus we see that the clinician's concept of schizophrenia could easily be a blending of the ideas of Kraepelin, Meyer and Bleuler. A recent brief description of the disorder, schizophrenia, about which many workers would find no fault, is given by Despert. (26) She states that schizophrenia is characterized by a, "loss of affective contact with reality, coincident with or determined by the appearance of autistic thinking, and accompanied by specific phenomena of regression and dissociation."

SCHIZOPHRENIA AS FOUND IN ADULTS

Before trying to discuss the incidence, etiology, diagnosis, differential diagnosis, treatment and prognosis of schizophrenia in children, a short outline of schizophrenia as found in adults will be presented with a few general remarks concerning the symptomology as found in children.

The schizophrenic type of reaction as seen in an adult is basically characterized by a diminished interest in and adaptation to the work-a-day world. There is increased interest in subjective creations or fantasies, which are freed from the control of ordinary logical thoughts. There are frequent occurrences of hallucinations. Also there is general emotional blunting and a failure to participate in the concerns of the surrounding environment. When emotional responses do exist, they are out of proportion to the external stimulus, and the difference between mood and thought is often striking.

However, the important concept, as Kanner points out, is not the presence or absence of any one symptom that is pathognomonic for schizophrenia. Rather, the emphasis must be placed on the total behavior of the patient. Thus, "we should speak of a diagnosis of schizophrenia only when we have a fair picture of a broader consistency of the events,

a fair etiologic accounting and an understanding of the factors determining the developments." (31)

Generally speaking four different types of schizophrenia can at times be distinquished. One must keep in mind, however, that there is an almost unlimited range of combinations of symptoms and that in the course of illness there may be a succession of different pictures in the same patient. The first type of schizophrenia with definite characteristics is the hebephrenic type. In this, one sees superficial responses, shallow inappropriate affect, unpredictable giggling, silly behavior and mannerisms, grotesque and changeable delusions; and regressive behavior and hallucinations, usually of a visual nature.

A second distinguishable type is that of catatonia. The main characteristics here lie in the field of psychomotor disturbances. Awkward positions may be maintained for hours or weeks, and these positions are symbolic expressions of internal conflict or striving. There may be marked generalized inhibition with the patient showing stupor, mutism, negativism or waxy flexibility. At times, the patient may burst out in violent excitment, in which he is dangerous to himself and especially others. The patients are also seen to regress to a state of vegetation.

Paranoid schizophrenia is a third distinguishable type. Delusions of persecution and/or grandeur often predominate here; and, not infrequently, they are quite fantastic in nature, inconsistent, illogical and bizarre. There is usually a fairly constant attitude of hostility and aggression. Hallucinations are also frequently present.

The fourth separable type is simple schizophrenia. Here one sees an inpoverishment of human relationships, and a reduction of external attachments and interests. Apathy and indifference are commonly present, but delisions and hallucinations or any degree are rare. This type of schizophrenia shows increasing severity of symptoms over long periods of time, and some mental deterioration is frequently seen.

The above types of schizophrenia are seen in the purest form in adults. The older a child is at the onset of the illness, the more closely do the clinical features similate the adult patterns. However, "Smaller children," as pointed out by Potter (45) "cannot be expected to exhibit psychopathology with all the elaborations of the adult. It must be remembered that the level of intellectual development and the life experiences of the child are limited in comparison with those of the adult. Language developed to a degree of complexity is a product of a mature intelligence."

Thus it can been seen that children do not possess the facility to verbalize their feelings completely. Also, they are not capable of complicated abstractions. Consequently, any delusional formation in a child is relatively simple, and their symbolization is particularly naive. It appears that the outstanding symptomatology is found in the area of behavior, and there is a persistent lack of emotional rapport. The urge for integration with the environment is either deficient or absent in these children.

GENERAL COMMENTS CONCERNING CHILDHOOD SCHIZOPHRENIA

It was previously pointed out that the concept of primary and secondary symptoms in schizophrenia was originated by Eugen Bleuler. (9) He held that certain primary symptoms are directly related to the fundamental disturbance in the psychosis. "When these primary symptoms are present, others arise secondary to them, as an expression of the way the patient, handicapped by his primary symptoms, adjusts to his surroundings." The development of the secondary signs on the structure of the primary lesions are due to normal environmental irritations and to normal psychologic and physiologic mechanisms. Bradley and Bowen (12) tabulated the behavior traits that were prominent in 14 schizophrenic and schizoid children. Two traits, namely, seclusiveness and irritability appeared in all 14 children, and six more traits appeared variably in the children. In attempting to understand the relative importance of the eight traits, psychiatrists applied the concept of primary and secondary symptoms, as first utilized by Bleuler. Seclusiveness appeared to be a primary and fundamental symptom. According to psychoanalytic teachings, the essential quality of a psychosis lies in the disordered relationship, which exists between the patient and reality.

Seclusiveness directly expresses such a primary disturbance; since, by the very act of being seclusive, the child withdraws from many situations in real life. On the other hand, irritability is not primary, but seems merely to measure the intensity of the seclusiveness. The other secondary symptoms, along with irritability, are daydreaming, bizarre behavior, diminution and regression of interests, sensitivity and physical inactivity.

In discussing schizophrenia in children, the term "children" should be defined. This is necessitated by the fact that the literature is replete with references to fifteen, sixteen and seventeen year old "children", who are largely in the first decade of their life. If this definition is adhered too, the diagnosis of, and use of the term, childhood schizophrenia, will be more meaningful to the reader and will facilitate his reading, interpretation and presentation of material.

Probably the most important problem as regards the present status of childhood schizophrenia is one of attempting to elucidate more clearly what should be and what should not be called childhood schizophrenia. Harms (28) points out that when child psychiatry became a separate field, apart from general psychiatry, there was a trend toward the misevaluation of almost all the mental illness of childhood, i.e. childhood schizophrenia. If one was to take the trouble

to summarize the descriptions of childhood schizophrenia by various authors in the past fifteen years, he would find every eymptom that occurs in abnormal psychology. This indiscrimate and over use of childhood schizophrenia as a major childhood disease has been most tragic in the practical application to the majority of young patients. In reading literature of the past few years, one gets the feeling that the prime objective of child psychiatrists has been to try and resolve this lack of clarity.

INCIDENCE

What is the incidence of childhood schizophrenia? The latest figures and data show that psychoses of any sort are extremely rare in children. Unfortunately, accurate figures as to the precise incidence in children are not available. This deficiency, up until very recent years, has been due to the absence of a standard age limit, the variability of the diagnostic standards and the fact that many workers prefer to report the incidence of psychoses in general, rather than of schizophrenia in particular. Bradley (11) reported that up until 1937 Lutz found only 60 cases of childhood schizophrenia in the world's literature. Thirty of these cases were less than ten years old, and in only ten of these 60 was the clinical diagnosis made before six years of age. The general consensus of opinion is that about 3 to 4% of all cases of schizophrenia (including adult) have their onset or show signs of their condition before the age of ten. The actual diagnosis of schizophrenia in childhood (childhood now being used as previously defined) is well under 1% of all cases diagnosed. In Lutz' series the youngest child in whom a definite diagnosis was made was $2\frac{1}{2}$ years old. From these few figures one can conclude that schizophrenia in childhood is quite rare, but can occur at an early age.

ONSET AND COURSE

The onset and course of childhood schizophrenia, as pointed out by Schumacher (53) can be either chronic or acute. In the latter, the disorder breaks out suddenly, and often unexpectedly, and the patient's course is frequently characterized by remissions and exacerbations. In the chronic form, the onset is insidious and often escapes detection. The subsequent course is usually slowly but steadily progressive.

In the acute type, the initial sudden onset may have been precipitated by some external event such as physical illness or injury, or emotional upset. These attacks are often characterized by active psychomotor manifestations, appearing unexpectedly and stormily. Such manifestations may be composed of active negativism, catatonic actions or extreme irritability. These symptoms usually abate in a few days to weeks. The patients rarely recover completely from such episodes, and subsequent attacks are to be expected.

In the chronic type of childhood schizophrenia, the rate of progress is most variable. The disease makes itself evident by a gradual loss of interest in one's surroundings. There may be withdrawal from the usual

group activities and the child becomes preoccupied with his own thoughts and interests. The slow couse may be interrupted by an acute episode. The progress of the disease towards deterioration may stop at any point. However, the child can continue to function, but at a level somewhat inferior to his original condition. These children often become quiet, shy, introverted, dogmatic, disturbing and/or foolish. Their school performance declines because industry and attention lag.

There is no particular agreement among different authorities as to which type, chronic or acute, is the more common. These same writers seem to stress that patients with an acute or chronic course may show a totally unrelated and often amazing variety of symptoms. The course is also extremely variable in childhood schizophrenia.

Also noted is some confusion between "deterioration" and "symptoms of regression." Regression refers to the resuming of interests and activities at a more elementary level, through which the child has probably already passed at an earlier age of development. Deterioration refers to the qualitative impairment of special mental functions. There is a divergence of opinion as to whether or not actual mental deterioration in childhood really occurs.

ETIOLOGY

The problems confronting child psychiatrists in attempting to understand the etiology of childhood schizophrenia have been many and large. One of the biggest of these problems, until relatively recently, has been the lack of positive diagnostic criteria. Hendrickson (29) points out some of the basic questions still to be answered. "Does the schizophrenic child develop his illness because of his mother's pathogenic attitudes toward him, or is the basic devect present in the child at birth, with some of the mother's attitudes developing out of the frustrations of trying to deal with the sick child? Does the illness represent an inherent biological defect or is it psychogenetically determined? Or are both types of factors operating?"

One of the leading theories on the etiologic mechanism is championed by Bender. (6) (7) From her observations of some three hundred patients she concludes that we are dealing with a form of encephalopathy. The encephalopathy appears at different times on the developmental pattern of the biological unit and the social personality in a characteristic way; and, because of frustration, causing anxiety to which the individual must

react according to his capacities." Bender believes that the pathology involves behavior at every level and in every area of integration within the central nervous system. Thus it appears that Bender considers childhood schizophrenia to be basically, a diffuse, complex and subtle type of neurological disorder. She states that the encephalopathy is caused by genetic factors, and the clinical evidences of the schizophrenia are precipitated by the physiological crisis of birth, or psychogenically by emotional crisis later in life. Presumably, therefore, children not born with this defect are not subject to schizophrenia. There is no definite causation given to account for this biological defect.

Bender (7) describes some "soft neurological signs" to support her viewpoint. Schizophrenia shows no typical neurological signs that might indicate focal or diffuse brain damage nor have any particular pathological findings been satisfactorily demonstrated. However, she does think that emphasis should be placed on these "soft neurological signs", discernible only by careful observation of the child's total functioning while at play or at other activities. These signs include the patient's control of facial musculature and voice, his motility patterns, and his responses in certain postural reflexes.

Pearson and Bakwin are in general agreement with Bender's views. Pearson expresses the thought that childhood schizophrenia is due to a constitutional factor that makes it difficult for the schizophrenic child to adjust to his instinctual life. He concludes with the idea that the psychoses appear to be the result of constitutional pecularities that make the patient unable to tolerate traumatic experiences to which other persons of a different constitutional make-up can adjust.

Another theory of childhood schizophrenia stresses brain damage as the etiologic agent. This theory differs from Bender's which is based on the occurrance of an encephaopathy. Anderson (2) stresses the role of cerebral anoxia and/or hypoxia as being a basic mechanism in childhood schizophrenia. She has been impressed through the years with the number of schizophrenic patients who invariably have some organic body pathology, which can best be described as of a deficit variety. Neurological as well as general physical examinations of these patients were essentially negative. However in each one, without exception, there were strong evidences of brain pathology on psychological tests. These tests involved mainly visual-motor discriminations, memory and recall of digits forward and backward.

There was confusion in figure and ground perception, and difficulty in catching hold of stimuli without first being given a lead.

These children's associations are as confused as their perceptions. It is not strange that their relationships, especially with people, are vague and ill-defined. Obviously such children would be extremely hard to raise. Anderson (2) points out that for her, "It is no longer the assumption of a child with normal potential, warped by the experience of life with an unconsciously rejecting mother, but quite possibly a child with defective potential in the hands of average parents."

The anoxia or hypoxia could affect the child at child birth or later. Perhaps the baby does not breath spontaneously or is severely sedated at the time of delivery. The mother might go into shock for some reason or another causing the fetal supply of oxygen to be critically diminished. Intracerebral injury such as hemorrhage into brain substance could precipitate a bout of cerebral anoxia.

Schilder (52) states that one may see reaction types resembling functional psychoses in children on the basis of an organic inferiority of the brain. Many children studied by I.Q. tests were shown to be mentally deficient and presented pictures not in the least dissimilar to that

seen in schizophrenics. Inferiority of the brain, acquired or constitutional, leads to an increase in the emotional and intellectual peculiarities in a child's behavior. There may be flat, inadequate emotions or sudden and violent outbursts of rage. From the beginning, conflict situations in life will be conceived, therefore, in a different way and will be accompanied by abnormal reactions in the emotional sphere. Pictures of psychoses will appear that are similar to those of schizophrenia, although they are not identical with it. Due to the inferiority of the brain, primitive drives and emotions, as well as motor tendencies, will emerge in a very open manner. Also, the reaction to conflicts will be less controlled, longer lasting and more deep-lying. Schilder feels that one should guard the diagnosis of schizophrenia in a child with an I.Q. of less than 80. The I.Q. of a child and its effect on the emotional development and life of the patient should be considered before a diagnosis of childhood schizophrenia is made. He concludes that pictures seen in mentally retarded children and resembling schizophrenia in childhood are very often not schizophrenic but organic. He does not deny, however, that true schizophrenia may rarely occur in a mentally deficient child.

Interestingly enough, Raub (48) points out that truly psychotic children may appear to be mentally deficient.

Workers in the field of mental deficiency are becoming more and more aware of the problems presented by children who appear dull or defective, but who are actually schizophrenics of the type who withdraw from life about them rather than call attention to themselves with bizarre speech or behavior. Many of these children are called deficient on the basis of past school history, community adaptation and their behavior at the time of diagnosis. The patients receive at some time in their lives an intelligence test which shows them to be of low I.Q. All patients are carefully retested, and in a typically schizophrenic fashion, earn low scores on tests requiring attention, concentration and generalization, but considerably higher scores when they may express their thoughts through performance. Thus a diagnosis of mental deficiency should not be given a schizophrenic patient unless his psychological tests have been very carefully given and interpreted.

Eickhoff (27) goes into great detail in her study of one child with schizophrenia and postulates an interesting etiology worthy of brief mention. She feels that schizophrenia in children is an arrest in the development of abstract thought and emotional maturity. This supposedly occurs at the age of infancy or just slightly later when the

child toddles, This arrest, she thinks, is basically dependent upon a defect in the aquisition of general sensation. This latter is, in turn, due to either a defect in the neurological systems concerned with touch, pain, temperature, position and vibration sense; or it is due to faulty stimulation from the outside. Either or both may be present. This defect leads to a delay in the formation on the body images and other images. This hypothesis of the etiology of childhood schizophrenia does not seem to be very well accepted by other authorities in the field.

Another prominent etiologic factor which is receiving a lot of study and discussion at present is that of endocrine and/or chemical disequilibrium. Blood glutamic acid levels have shown a higher range in schizophrenic patients than in non-psychotic controls. It is also interesting to note that these glutamic acid levels fall during therapy, its relationship to hormonal and enzyme function and its role in the pathogenesis of psychopathology may open new vistas in the understanding of schizophrenia.

High thyroid and histamine tolerance are also seen in schizophrenic patients. A study of schizophrenic patients revealed that as there was improvement in the patients, their tolerance to histamine fell, and the more severe the psychosis

the greater the ability to tolerate histamine. The date show that hormonal disequilibrium with adrenocortical excess is a common finding in schizophrenics and appears to play an important etiologic and pathogenetic role in the psychoses. Sackler (51) points out that a search for therapeutic modalities from among the adrenocortical antagonists should be made. Also such findings as elevated histamine can be employed as a prognostic guide. At present tests and evaluations are being done on insulin resistance, glucose tolerance, ACTH responsivity and tpinephrine-mecholyl effects.

Rees (49) studied the metabolism in a schiaophrenic child and presented an etiological hypothesis. The child studied seemed to act as though under the constant influence of adrenalin. Since atropine counteracts some of the effects of adrenalin, it was chosen for a therapeutic trial. Rees thought that in this patient the atropine did counteract the schizophrenic process, partially, and made psychotherapy and re-education easier. She definitely does not feel that atropine is the final answer to the problem of childhood schizophrenia. Her hypothesis for a metabolic etiology for childhood schizophrenia can be stated as follows: "If within the body there is a chemical produced which, either in excess or in deficit, exerts an anesthetic-like effect upon the brain, the total behavior of the schisophrenic child can be explained."

Some workers in the field of child psychiatry, such as Kallmann (30) feel that there are definite genetic factors to explain the etiology of childhood schizophrenia. Other authorities such as Kanner find no basis for the genetic theory of childhood schizophrenia. Kallmann points out that there are three methods available for genetic investigations in man, namely: the pedigree or family history method, the contingency method of statistical prediction, and the twin study method.

The twin study method was used in conjunction with an ordinary sibling study. This approach provides six distinct categories of sibling groups reared under comparable environmental conditions. The one-egg, monozygotic twins are expected to show the highest morbidity rate for a genetically determined disorder, even though brought up in different environments. The morbidity here proved to be about 85%. Two egg twins are dizygotic twins and may be of the same or opposite six. However, genetically they are no more alike than ano other pair of brothers and sisters who are born at different times. The morbidity for these two categories was 14.7%. Siblings showed a morbidity of 14.3%. Half siblings, the fifth category, with only one parent in common should show a morbidity about midway between the full siblings if the given morbidity depends on the closeness of

of the blood relationship rather on the similiarity of environment. The morbidity for the half-siblings proved to be 7.0%. The sixth group was the step-siblings with no parents in common and here the morbidity was 1.8%. The incidence in the parents of the step-sbilings was 2.1%. These morbidity distributions indicate that the chance of developing schizophrenia in comparable environments increases in proportion to the degree of blood relationship to a schizophrenic background. Scakler (51) in reviewing a large number of his patients, states that generally, upon intensive diagnostic investigation, one and usually both of the parents of his schizophrenic children were also found to be either frankly schizophrenic or showed a schizoid personality. He felt that in the light of these findings, hereditary factors must be given great weight when one is considering the etiology of childhood schizophrenia. One of the conclusions that Kallmann reaches in his somewhat controversial paper is that the predisposition to schizophrenia, that is, the ability to respond to certain stimuli with a schizophrenic type of reaction, depends on the presence of a specific genetic factor which is probably recessive and autosomal.

Another theory is emphasized by Kanner (31) and Despert (23) who feel that psychological or emotional

factors in the child's early life experience play the key role in the etiology of childhood schizophrenia. Kanner observed and studied the parents of all his patients and came to the conclusion that there is a constant, typical pattern to be seen in their personalities and in their attitudes toward their children. These parents are apt to be cold, intellectual, compulsive, undemonstrative, efficient; and completely detached, objective and mechanical in their attitudes toward the children. Kanner refers to this type of parents as "refrigerator parents." He feels that the dynamics of the children's psychopathology can be explained to a large extent by the parents attitudes, personalities and behavior. The child's withdrawal seems to be an act of turning away from the parenteral situation to seek comfort in solitude. With a few exceptions it appeared to Kanner that schizophrenia in children was largely a psychogenically determined illness with the child's withdrawal and well-known failure to develop the normal ego capacities to clarify identities. These conditions resulted from his failure to receive any show of warmth or responsiveness in his mother. His view is, therefore, almost opposite to that of Benders.

Despert (23) in some of her recent work has described parents not unlike those seen by Kanner. The

mothers are seen as extremely immature, narcissistic individuals, often intellectual, with strong dependent and ambivalent ties toward their mothers, and incapable of mature emotional relationships. The fathers of these children are usually passive, aloof and inadequate except for variable degrees of professional success.

Rank (47) also agrees in general with Kanner and Despert and states that the arrested emotional growth in the child is a result of a special family constellation in which an immature narcissistic mother was not able to offer the infant in his early stages an environment with the emotional atmosphere favorable for the formation and differentiation of the self and the establishment of the reality principal. According to this theory of etiology the problem of affective contact with reality in the young child seems to depend upon the kind of satisfactions or frustrations experienced by the infant in his early dependency on his mother.

Some of the more prominent theories dealing with the etiology of childhood schizophrenia have been briefly discussed. It is conceeded by everyone that the etiology is still not known. However, at the present time, the principal focus of attention is being directed at the formation of the child's ego. Therefore a few extra words

about this particular problem, as it concerns the etiology of childhood schizophrenia, is warranted.

First of all a definition of ego is needed and the description used can be found in Noyes' (43) textbook. "The ego, or reality-testing self, is that part or function of the personality which establishes a relationship with the world in which we live. It deals with the environment through conscious perception, thought, feeling and action and is therefore the consciously controlling portion of the personality. .... The ego organization being in charge of such important functions as perception, memory, reality evaluating and testing, synthesizing of experience, and of acting as intermediary between the inner and outer world may be regarded as the integrative and executive agency of the personality."

In order to understand and interpret ego, many complex determinants must be considered, namely; constitutional, congenital, biological, instinctual and environmental factors. The content of infantile experiences is determined to a large extent by maternal influences. Ego and its functions are established for the most part during the first eighteen months of life. Thus if a defective ego is to be the basic cause of psychotic development, there must be an abnormality in the mother-child relationship.

Starr (56) speaks of this mother-child relationship as a symbiosis. There are two extremes of relationships. One is the overanxious and overintense mother-infant symbiosis, and the other is the indifferent, inadequate, unstimulating, cold undemonstrative mother-child symbiosis. This latter causes autism. Starr splits the life of this symbiosis into three phases. These three phases follow the physiological symbiosis which is terminated at birth.

The first phase is the presymbiotic era and involves the first six months of life. During this time the baby tries to find the next best thing to the life he had in utero. If the mother responds to the infants demands and needs, she fills the psychophysiologic requirements of the infant. All infants have an object-seeking or reaching-out tendency, which is variable in all infants and is probably congenitally determined. The mother in return has to be affectively available.

The second phase is that of Symbosis. By the age of six or eight months the infant's ego is differentiating the mother from the rest of the blurry world by means of its senses. By about ten months an exclusive mother-infant relationship should be established. However, "When the maternal stimulation and anxiety have been excessive in the presymbiotic as well as in the symbiotic phase, the infant

is quite unprepared for the next step. The symbiosis becomes a parasitic inseparability. On the other hand, when the relationship has been a distant one, autistic trends manifested during the presymbiotic period become more clearly evident during this phase." (56)

The third phase is that of postsymbiosis, and starts at about the onset of the first year. By this time the child is weaned and starts to locomote. The child starts to disengage itself from the mother, and the smoothness of this phase depends to a large extent on the degree of trust and confidence in the mother-child relationship up to this point. Since the child has some ambivalence about this adventure, maternal encouragement and support will increase security and decrease anxiety in the infant.

As children vary in their quest for physical and psychological individuality, so mothers also vary in their attitudes toward the child's attempts at separation. The maturation of the child's psyche is very susceptible to the to the transformation and growth of the maternal attitude. Initially her goal is exclusive fusion to the infant but at about one year of age the mother must encourage autonomy to the extent that the maturity of the infant's ego will permit. Depending on the maternal actions during these phases and toward which extreme they swing, two types of psychotic

disturbances may be seen in the child, namely; autism, which is a deficiency disease of childhood or parasitism, a psychotoxic disease of infancy.

Kanner (32) was one of the instrumental pioneers in work on infantile autism. Many children possessing this disturbance are believed by their parents to be feeble-minded or to have auditory troubles. However, careful testing shows that such is not the case. The common denominator in all these children is an inability to relate themselves in the ordinary way to situations and people about them. This process begins at birth. There is a defect in ego, affect and object relationship. We see in these children a withdrawal from reality, and the child's fantasies serve to remove him still further. All of the previously discussed ego functions have been arrested in early growth. Aarons (1) states that anxiety is profuse in these children and affect is grossly diminished or absent. They become very attached to inanimate objects and thrive on a oneness, which, if disturbed or taken away, precipitates an acute outbreak of rage and temper-tantrums. These immediately cease when the oneness, a room for instance, is put back into exact order. Their relation to objects is good; their relation to the mother has absolutely no special significance. People and change produce extreme anxiety and panic in autistic children.

Early autistic characteristics in children are, without exception, due to maternal affective unavailability. The earlier this affective unavailability strikes the infant, the more devastating are the results on the child's psychic and ego development. The infant, seeking relief from displeasures in its mother, resigns itself to its motherless state and turns to inanimate substitute objects with a tenacity that would have otherwise been directed towards the mother.

Starr (56) points out that there is a variety of maternal psychopathology. Specific maternal neurotic inhibition of a hysterical or obsessive type may be seen. Severe depressive or narcissistic disturbances may be in evidence. Borderline psychotic disturbances or actual schizophrenia is sometimes prominent. A severe negative identification with the infant may be shown. Kanner (33) observes the interesting fact that almost all the parents of his children were highly intelligent. For the most part the parents were deeply preoccupied with abstractions of a scientific, literary or artistic nature and had limited genuine interest in people. There were very few warm-hearted parents.

A 'parasitic' type of psychotic disturbance is also seen in childhood schizophrenics and is also due to a

lack of ego development in the child. However the maternal psychopathology is opposite to that seen in mothers of autistic children. These mothers are the very overprotective kind who cannot seem to allow their infants to grow and develop a relatively independent existence. The problem and effects of maternal overprotection have been studied by Levy (38) and Kasanin, Knight and Sage (34) over-protection involves some of the following: excessive contact, prolongation of infantile care, prevention of the development of independent behavior and lack or excess of maternal control.

Levy feels that some of the following conditions are strong factors in predisposing to overprotection.

"1. Long period of anticipation and frustration during which the woman's desire for a child was thwarted by sterility, miscarriages or deaths of infants."

"2. Conditions in the child that made him a greater hazard for survival than other children; physical handicaps, illnesses and the like."

"3. Sexual incompatibility with the husband."

"4. Social isolation; lack of common interests between husband and wife."

"5. Emotional impoverishment in early life; unhappy childhood, particularly from the point of view of libidinal

satisfactions."

"6. Development of dominating characteristics through the assumption of undue responsibility in childhood and the continuance of this role in marriage."

"7. Thwarted ambitions."

An overprotective mother seems to react with intense separation anxiety to any growth and separation between herself and the child. This mother sees the child as part of her own image and so clings to it. Thus we see thwarted, the normal resolution of the symbiosis and post-symbiosis that takes place after about one year of age. As this relation proceeds, the child eventually feels safe only when close to his auxillary ego (the mother). When the child is left to his own resources, his inadequate ego fails; and there is panic over separation. Not only are the steps of independence not taken in the post-symbiotic phase, but the presymbiotic and symbiotic phases are replete with excessive maternal anxiety. There is a persistent flood of anxiety and, "The infantile ego undergoes an anoxic stiffling, which causes its arrest." (56) Kasanin concludes that the overprotective produces a vicious cycle in the life of the schizophrenic child. On the one hand, the child needs the extra care for his development; and on the other hand, the receiving of this extra care hinders his

emancipation from his parents and his final development.

It appears that the problem of childhood psychosis, and specifically, schizophrenia, concerns imbalances in the equilibrium between mother and infant. Mothers are variable in the amount and availability of their affect and in their attitudes towards autonomous development in the infant. The infant, in turn, varies in the speed with which he seeks objects and autonomy. It is the combinations and degrees of the mother-child relationships that determine the existance and type of childhood psychosis. In the child, the basic psychopathology is a stunting in the ego formation and development.

DIAGNOSIS

The next aspect of childhood schizophrenia to be considered is that of diagnosis. Bahler (14) states that the biggest diagnostic problem is not that of the extreme case but rather that of the border-line case. Such cases may represent incipient stages of schizophrenia. Since therapy is made easier by early attack of the problem, early diagnosis of the mild case is the goal to be achieved.

In general, the symptoms of schizophrenia in children are fewer and of simpler character than in adults. Since children are primarily creatures of feeling and behavior, their psychoses will be expressed by distortions of these faculties. It is well to remember that the symptoms seen will depend to a large extent on the child's experience, development and maturity. Generally, however, the essential features of the psychosis should be quite prominent; since the effect of culture and complexities of adult life have not yet complicated the child's life.

Cappon (15) feels that infantile autism is the major key to childhood schizophrenia and discusses the general behavior seen. Interpersonal social relations are minimal or non-existant. However the relationship to objects is good with the presence of some rapport. There appears to be a definite need for sameness as concerns

arrangements of toys and play patterns. These children have a hard time recognizing who self and himself is. They are easily absorbed in details and loose sight of the total object. The general psychomotor behavior may reveal the child to be hyperkinetic, but daydreaming and detachment may be in evidence. They may play with things for prolonged periods of time. Their mood is often impassive and they show a low threshold for frustration. The children often show a lack of appreciation for the full meaning of words and sentences. Speech may be infrequent or absent. When speech is used, it is apt to be affectless and not primarily used for intelligable communication. Marked repetition of words and activity is frequently prominent. Perceptions are clear and potentially good. Often one sees a high threshold to physical pain and a very low threshold to psychic pain. Any intelligence potential is impossible to measure, since communication is impaired.

Despert (24) feels that the six diagnostic criteria set forth by Claudius are still very good. Other authors offer their ideas on diagnostic signs. However, they all seem to merge into the following: "1. A general retraction of interest from the enviornment. 2. Dullness of thinking, feeling and acting. 3. Disturbances of thought manifested in blocking, symbolization, condensation, incoherence,

delusion, reduction--sometimes to the point of mutism. 4. Defects in emotional rapport. 5. Diminution, rigidity, and distortion of affects. 6. Alterations of behavior with either an increase in motility leading to excessive activity or diminution of motility leading to complete immobility or bizarre behavior." (24)

The question of delusional and hallucinatory findings in children is very much in debate. Most authorities feel that they are never seen in children under the age of six. Despert, (25) for one, believes that they are seen in older children. She reported visual and auditory hallucinations in eleven of her patients, and also stated that one more had gustatory hallucinations. She found the hallucinatory experiences of schizophrenic children over the age of eleven to be very similar to those found in psychotic adults, except for their greater simplicity, and lack of systemization and organization. In general hallucinations seem to appear in from 15 to 30 per-cent of childhood schizophrenics, and are usually of the visual type. In younger children who showed difinite hallucinations of visual or auditory type, it is very difficult to ascertain the content or even the presence of delusional experiences. There is general agreement among most authorities that delusions, at least as recognized in adults, rarely appear in childhood schizo-

phrenia. This is because of the child's simple outlook on life and because the child's mental development has not yet reached the degree of organization and complexity to permit true delusions. This is substantiated by the fact that paranoid type of schizophrenia is rarely seen in childhood.

Bradley and Bowen (12) define the eight separate behavior characteristics which they found to be prominent in schizoid personality and schizophrenic children. These have already been mentioned. They are seen to revolve around seclusiveness. The other seven characteristics are; irritability, especially when the seclusiveness is disturbed, decrease in the number of personal interests, day-dreaming, regressive nature of personal interests, bizarre behavior, physical inactivity and sensitivity to comment and criticism. It can be seen that these characteristics fit into the criteria set forth by Claudius. Other less prominent symptoms are sleep disorders, compulsions, rituals, and masturbation. Schumacher (53) also found these characteristics to be foremost in the patients he studied.

Despert (24) emphasizes the fact that schizophrenia in choldhood is, "A disease process in which the loss of affective contact with reality, or failure to develop affective contact, is coincident with or determined by the appearance of autistic thinking and accompanied by phenoma

of regression and dissociation." All forms of adaptation and affective contact are involved in the childhood schizophrenic. The pathological disturbances occur at every level of nervous system function, namely; vegetative, motor, perceptive, intellectual, emotional and social. Kornfeld (37) states that there is an optimal time for the maturation of various functions and in the disturbed developmental progress of the childhood schizophrenic, many functions emerge both before and long after their normally expected time. This she feels is especially true of the child's ego formation. Due to conflicts of one sort or another, the ego is forced to function at an unusually early time, when it is immature. Therefore, it is not of solid consistence. When reality relationships appear and put a little stress on the ego, it crumbles under the load.

As previously stated, all integrative and affective functioning of the central nervous system is disturbed but is manifestated according to the age and developmental level of the patient.

Bender and Helme (8) use the term plasticity to characterize the behavioral and organizational disturbances of the central nervous system seen in schizophrenic children. They stress the point that virtually all areas are disturbed in childhood schizophrenia. This is in

contrast to the more specific concentrations of symptoms to a single area, as is seen among neurotic children and those with primary behavior problems. These authors ran a series using 30 schizophrenic children and 30 non-psychotic children of comparable age and socio-economic status. They compared the incidence of many signs and symptoms in the two groups in the various areas of disturbance. Some of the following characteristics are found to be quite prominent in the schizophrenic child.

On the lower brain levels, there is a very noticeable instability of the homeostatic mechanisms. Schizophrenic children show marked perspiration or vascular dilatation, or appear pale and have cold extremities. Disturbances in the normal rhythm of eating, sleeping or elimination may be apparent. Physical growth is often disturbed. Psychotic children frequently show particular skill in one area such as art, but the rest of their adaptional patterns are markedly inadequate.

At the motor level one sees difficulties in coordination. Movements are often awkward and clumsy and play patterns are often unpredictable. Yet if schizophrenic children are left to themselves, they may show exceptional grace in something like dance. There is often a great amount of difficulty in learning new motor patterns, and

the parents may remember that the patient had a lot of trouble learning to walk. Some do not seem to know the position of their facial musculature or have a lack of awareness of bodily secretions and excretions. Some authorities also feel that there are certain postural reflexes that are due to a developmental retardation of the neuromuscular responses. A schizophrenic child may be seen to go whirling about or to move about with the palms of his hands together.

On the interpersonal level one often sees a lot of anxiety in the family with a schizophrenic child, especially in other children. Also, if one of the parents is emotionally unstable, it is usually the healthier parent who suffers the more intense anxiety and guilt feelings. Some of the children are rather easy to relate with early in therapy. Others will not relate to anyone, including the therapist.

In the emotional sphere, the schizophrenic child is unable to control the production of his fantasies; there is an emotional ataxia and diffuse anxiety. The child desires close contact in order to acquire a source of bodily and psychological security. There is an inability to experience any sustaining pleasure. There are fluctuating perceptions and difficulty in defining

the boundaries of the child's ego. He often is unable to maintain stability toward his animate and inanimate environment. His desires to escape produce continuous fantasies, such as changing sexes or going to other countries or worlds. Sexual problems may be accentuated and are manifested in excessive masturbation and preoccupation in elimination.

Concerning the intellectual level, there may be marked speech retardation or blocking. This seems to be especially evident if the psychosis is of early onset. On the other hand, children who begin to suffer from schizophrenia after a language is partially developed, may show an unusual increase in their language ability. One may see prolonged mutism with speech suddenly appearing. Regression to infantile speech habits and patterns may be prominent. Marcus (40) points out that, "The schizophrenic uses words for themselves without employing them for communication and affective relationships. The further these disassociations occur, the greater are the feelings of strangeness, of being isolated and alone, the less the ability to employ affective contact with the environment."

Norman (42) states that many schizophrenic children show a lot of attention to detail. When these children draw pictures of people many small details are

included, such as tendons on the backs of hands. Also, some may be attracted to colors or to one particular color. Undue attention may be paid to form and contour of objects. Norman also stresses a lack of or poor formation of the body images. "There appears to be failure of integration of the various fields of experience that go to form the body-image, with possibly, actual weakness or defect in their own internal experience." Schizophrenic children seem to have poor integration of their visual, postural and vestibular experiences. They may be seen to move parts of their bodies with their hands as though they were foreign and lifeless.

Many studies have been done on schizophrenic children and adults using the electroencephalogram. In general there appears to be no single specific form of brain activity that is characteristic or that differentiates schizophrenia. Some patients show marked differences in amplitude, frequency, amount and form from homologous head regions. Most series done on adults show that about 50% of those tested have slow and irregular waves from one or more regions of the head. Davis (22) did EEG studies on 132 adult patients and felt that the waves fell within three groups: "a) essentially normal, b) dysrhythmia (indistinguishable from electroencephalo-

graphs of individuals known to have convulsive disorders), and c) choppy type which suggested possibility of brain pathology." Strauss, Rahm and Barrera (58) made a rather large study on schizophrenic children. Sixty eight per cent of their cases showed definitely abnormal EEG tracings, with the largest percentage showing a diffuse cortical dysrhythmia. Sixteen per cent of those tested had a focal type of dysrhythmia. Another series of EEG's were made on schizophrenic children by Clardy, Goldensohn and Levine (18). "The prominent features of the electroencephalographs were slow waves in all seven cases studied and asynchronism and slow waves in four cases." These latter investigators also did pneumoencephalograms. There appeared to be definite though minimal changes in the ventricular outline in five of the seven cases. They were interpreted as indicative of cerebral hypoplasia and thus would be good evidence of some organic brain changes, though not specifically for schizophrenic children but they are not pathognomonic changes.

A lot of research has been done recently in the field of psychological testing of schizophrenic children. In addition to the standard intelligence tests, some of the better projective tests, such as the Rorschach have been employed and studied. For thorough testing and evalu-

ations, a battery of tests is required. This should include the above two plus achievement tests, the Thematic Apperception test, and the Draw A Person Test. It is not within the scope of this paper to discuss the various psychological tests. However some of the findings and especially those of the Rorschach tests, as they pertain to childhood schizophrenia, will be briefly presented. It also appears that probably the best use of psychological tests is in the problem of differential diagnosis.

Piotrowski was one of the first to use the Rorschach test on schizophrenic children, and some of his findings have been summarized by Mehr. (41) Perserverance is one of the most characteristic findings of schizophrenia of childhood. The perserverance around one idea is repeated in practically every blot, regardless of the modifications in shape and color from one blot to another. Piotrowski found an uneven performance level in his experiments. A large percentage of schizophrenic children had poor original responses, and there was a comparative absence of inductive reasoning. There was no evidence of color shock.

DIFFERENTIAL DIAGNOSIS

The definitive diagnosis of childhood schizophrenia is more often than not a very knotty problem, wrought with indefinitness due to divergence of opinions of various authorities. The difficulty is intensified by a persistent lack of consistent diagnostic criteria and by the absence of an acceptable classification of children's psychiatric disorders. Differential diagnosis is somewhat simplified if the children are not considered schizophrenic, unless they are frankly psychotic. Childhood schizophrenia must be distinguished from simple mental retardation, delayed development in beginning to talk, organic disease of the brain and behavior disorders based on disturbances in interpersonal relationships. The latter may include schizoid types of personality and so called pseudo-schizophrenia. The difference between patients diagnosed as schizophrenic and schizoid personalities is basically a matter of degree rather than type. Kestenberg (36) describes three cases which she put in a 'pseudo-schizophrenia' classification on the basis of their divergent dynamics. All three of her patients had schizophrenic-like features and tendencies.

The symptoms of a mentally defective child often closely similate those of a schizophrenic child. There appear to be four big reasons for this. One is because of his intellectual inferiority with undue generalizations and insensitivity to contradictions. There is an unregulated emotional system which reacts inadequately to every problem. Another reason is because primitive drives come strongly to the foreground. Bakwin (4) has summarized some of the points of differential diagnosis. "In schizophrenia, as distinguished from simple mental retardation, development proceeds normally at first and then slows down or deteriorates. Moreover, the disturbance in mental functioning of the schizophrenic is likely to be irregular and to affect certain faculties, for example, speech, more than others. When the disease starts during the first 2 or 3 years of life, the mental deterioration may not be readily apparent." As shown on the Rorschach tests, schizophrenic children have twice as many whole responses as the defective child. Schizophrenic children, in general, do not show color shock, whereas mentally defective children often do. The schizophrenic child perceives little but elaborates greatly without due respect to the validity of his interpretation. The mentally retarded child perceives relatively much more and attempts to synthesize his more numerous perceptions,

although the synthesis is not very successful due to his limited intelligence.

Some of the differential points that are in favor of organic disease of brain are; early attack of whooping cough, encephalitis, traumatic episode such as difficult or prolonged birth, anoxia in the postnatal period, slow but progressive development, and a behavior disorder characterized by restlessness, over activity, poor concentration, distractibility, and impulsiveness. There may be signs of neurological disease that are overt and are elicited only with careful postural examination. Perceptual and conceptual difficulties may be discovered by psychological testing. Obviously, the history is very important and as in the case of encephalitis, for instance, a story of fever, chills, convulsions and so on is important.

Schizophrenia in childhood must be differentiated from such things as manic-depressive psychosis, juvenile paretics and epileptics. As concerns manic-depressive psychosis, the general concensus is that this entity occurs either rarely or not at all in children. Kasanin (35) points out that children rarely have depressions due to their inability to analyze their own emotions or express them verbally. Manic reactions in children may escape

detection due to the expected hyperactivity of normal children. Kasanin and Kaufman (35) both agree that if this condition should appear in a child, the reactions are so distinctive that it should be easily differentiated.

Juvenile paresis is occasionally associated with schizophrenic reactions. However easy differentiation should be made by means of laboratory tests in addition to observation of typical physical characteristics and organic brain damage. Also, the occurance of epilepsy and schizophrenia in the same child is rare, but can occur. When they do exist together, the problem is one of trying to determine which is responsible for any deterioration present. A very careful history is of extreme importance here.

Childhood schizophrenia also has to be differentiated from neuroses. One author reports that visual or auditory hallucinations may be seen in children with anxiety neuroses. Hysterical patients may at times show schizophrenic symptoms.

Delayed or abnormal speech is a frequent finding in childhood schizophrenia. It is also seen in asocial attitudes due to neglect, spoiling and feeble-mindedness, as well as childhood aphasia. The differentiation of feeble-mindedness from schizophrenia should not be made quickly since both are very serious diagnoses. The important differential

points have already been discussed. Aphasia is often seen in children with cerebral palsy and this diagnosis should be relatively easy. However, some cases often occur on a hereditary basis. In these there is no other evidence of cerebral involvement. The majority of such patients seem to suffer from the sensory type of aphasia which is easily confused with hardness of hearing. These children are unable to interpret sounds, especially those of speech, and therefore show indifference to auditory stimuli. Psychotic children are frequently seen to be slow in acquiring speech, or they may stop speaking two or three years after they have started. Childhood schizophrenia should be differentiated from the above speech difficulties by means of the symptoms and history already discussed.

Finally, the actions or behavior of schizophrenic children must be differentiated from those of normal children. The behavior of normal children may include preoccupation with fantasy; pointless, absurd humor often enjoyed by small children; use of coined words; and the expression of their emotions through physical activity which at times suggests catatonic behavior. Childers (17) states that in the healthy child the focus of attention can readily be diverted from these activities; whereas in schizophrenic children, the focus of attention is not

nearly so transitory. Young children are highly imaginative and often personify objects, confuse fact and fiction, and reality and dreams. Normal children identify themselves with surrounding objects and are quite illogical at times in the conclusions they draw from their experiences. Also there is a period in the growth of normal children where they show varying degrees of negativism.

Thus we see that the differential diagnosis of childhood schizophrenia can be quite difficult and in all cases should be made only after thorough review of the case and after considerable time and study with the patient.

TREATMENT

The next major problem to confront us is that of treatment. (1) Up until a few years ago the treatment of childhood schizophrenia had been very minimal and disappointing both in effort and results. However, recently new hope has arisen, and articles indicate that some progress is being made both in methods used and in the result obtained. Bornstein has written an excellant article concerning the understanding and treatment of children.

First of all, there are limitations to child analysis due to the characteristics of children. A child is not capable of verbalizing his problems. He lives in the present and immediate future and is not yet endowed with the capacity of consistent evaluation of his past. Not only does the child's nature cause limitations. Feelings of guilt on the part of the parents often arise when their child's development takes a deviating course. "Not only does the psychosis of their child awaken their own childhood conflicts, but it threatens their hopes, their trust in the future, and their self-esteem as parents". (10) The calling of an analyst

becomes the eternal and unwanted guest in the house. The parents come to feel dethroned from their position of authority and lose an important channel for discharging their own conflicts. "It should not be forgotten that parenthood furnishes adults an opportunity to repeat and correct their own oedipal conflicts; first, by identifying with their own parents, and second by identifying their children with parent-figures." (10) The appearance of the analyst blocks the use of their children for the discharge of unconsicous conflicts and he is seen as an intruder. Such parental attitudes must be counteracted by the analyst and necessitate his regular contact with the parents and his tolerance for and understanding of their problems. The analyst's contact with the parents should not go beyond that of mild and supportive psychotherapy.

Another aspect to the problem is that of the analyst's own reactions to seeing parents who should be analyzed but whom he must not treat. The parents often disturb the child's analysis, and the analyst must keep careful check that he does not gather his own counter-aggression. If these feelings of counteraggression do arise, they act as a difficult emotional barrier to the treatment of the child. Thus the analyst must be well

aware of his tolerance threshold in dealing with certain kinds of parents, if his treatment of the child is to be successful.

The analyst's attitude toward the child is also very important. He must not be afraid of the child. "Children frighten us by their unpredictability, their highly charged emotions, their narcissism, and by their closeness to the unconscious." (10) Throughout the ages children have been considered a threat by society and by their parents. This is due probably to the threat of the oedipal crime.

Bornstein (10) makes the very interesting observation that, "There is no doubt that therapeutic failure with children is a greater narcissistic blow to the analyst than in the case of failure with adults." The analyst is apt to get a feeling of guilt earlier in the treatment of a child than adult, when, after long continued therapy, no conspicuous improvement takes place.

The evaluation of the child's behavior is made under the assumption that it will develop with his body, as if it will grow in proportion to the physical growth. This may explain why parents become frightened when there is even a minor deviation in the child's development. Another point of view may be that the deviation of development is negligible because the child will outgrow his

symptoms in the course of physical growth. These two conceptions are different, but they stem from the same fear; that of the child's future. "The child cannot follow us in our concern for his future; he senses that we do not permit him to be a child, as he is here and now. Out concern for his future is taken by him as an aggression and a moralistic judgment. Perhaps it is this unconscious moralistic attitude which children sense and which makes it so hard for our child-patients to confide in us. As we know, it is easy for them to share their secrets with each other." (10)

Another danger spot is that as the result of the child's frequent attempts to seduce and provoke, and his inpulsiveness, the analyst is apt to be tempted into abandoning interpretation and observation. The technique of child analysis, requiring that the analyst be interpreter, observer and participant in the child's play, promotes this error. These factors may facilitate the analyst's acting out of his own unconscious motivations, when giving advice to parents and child. A serious complication to the analyst is the danger of regression, which no one in continuous contact with children can escape. The analyst will often be unconsciously affected

by the child's attitudes. These are some of the barriers and pitfalls in treating childhood psychoses and for that matter, all mental illness of children.

Generally speaking the treatment of the schizophrenic child is divided into two phases. First is the period of treatment of the fulminating psychosis; and second, the period of emotional re-education. Usually the patient presents an acute psychotic stage, and the immediate therapeutic aim is to bring the patient out of it. In adult and also in childhood schizophrenia, the therapist, in the role of the protecting mother, is in a position to make a frontal attack upon the confused thinking of the acutely psychotic patient. Such an approach is often welcomed by the patient, who, in his autistic way is struggling with his own restitutive attempts. The schizophrenic is afraid and is fearful of again being hurt. The hurt is remembered as a wound to his pride and self-esteem, especially at the time when he was unable to strike back or to defend himself.

Aaron (1) states that the patient may be thought of as having been brought back into working contact with reality in the stage following the acute attack. The patient is able to relate himself to his therapist and to make the latter the object of his ambivalent reactions. However, this

this is still a testing period for the patient. He feels quite insecure and must find that the therapist always remains his protector. As already pointed out this may take an extreme effort on the part of the therapist. The therapeutic aim in the ambulatory stage concentrates upon the defenses. Therapy attempts to prevent withdrawal and to strengthen libidinal attachments to people and inanimate objects.

Therapy, according to Starr, (56) depends upon the understanding of the three phases of symbiotic evolution, previously discussed. It also depends upon whether the child shows autistic or parasitic components. Of course both may be seen in the same child, but one type is usually predominent.

In treating the autistic components, the most important thing to accomplish is emotional contact with people. Thus communication with the child must be established and Starr (56) points out that, "It is rare to find among children, one who has not preserved fairly well some functions of the ego; they are not totally uncommunicative." In therapy a good child-therapist relationship is needed. When this has been achieved, the therapist strives for affective stimulation in the patient. Therapy in the autistic

child must be one of replacement in which the therapist tries to develop the kind of maternal affective contact that was not made available to the child in its infancy. Gradually, he hopes to construct a relationship similar to the symbiotic one that failed to maturate. With this gained, the therapist can attempt to obtain close relationship with the child, through the functions that the child still does well, such as singing, dancing and so on. Of course all opportunities to strengthen the ego must be utilized to the fullest. It is generally felt that the same therapist should treat both child and mother. This is referred to by Starr (57) as the triangular method of treatment. He stresses the point that unless substantial improvements in the mother-child relationship can be gained, one should seriously question the degree to which the child can be helped. In most cases, this plan of therapy is superior to the four fold type of therapy. The main aim of psychotherapy with the mother is to try and change her affective unavailability to the child.

In treating the parasitic components the essential goal is the dissolution of the overintense parastic mutual control by mother and child. Here, "The child is increasingly provided with substitute object relationships that do not mobilize anxiety.....The crucial

difficulty with the mother is to help her keep 'hands off' her child. Giving up unconditional control over the child is likely to cause severe separation anxiety and depressive reactions." (56)

Generally speaking, outpatient therapy for psychotic children who live with their parents should not be attempted unless the family unit is quite stable. Also the parents must be able and willing to cope with the intensely distressing experience of living with a psychotic child.

Shock treatments have been used on children with schizophrenia but generally with poor results. One of the reasons why the different types of shock therapy do not work is that a definite diagnosis is rarely made during the early phases when shock therapy is usually the most effective. Clardy and Fumpf (19) tried electroshock treatments on a few patients. They concluded that it was of minimal value, and any improvement seen was probably due to other forms of therapy. They feel that one is justified in using electroshock only when the child has remained in a chronic state or is deteriorating and all other measures have failed. Also the use of such therapy is countraindicated in very young patients; since there is no understanding of the pathology that may take place in

the child's brain or the later effect on the personality. Other investigators such as Bender (7) have treated over 500 patients with electroshock therapy. She found that children tolerated the shock treatments better than adults. She feels that it does not interfere with intellectual function or development. The essential schizophrenic process does not seem to be altered, but there is an improvement in the patient's ability to deal with anxiety and other problems. Silver (54) found that such therapy was helpful in children with paralyzing anxiety whose symptoms were of a recent acute onset. Insulin-shock therapy has been tried but with generally unsatisfactory results.

Metrazol shock has been used in childhood schizophrenia but in general the results have not been very gratifying and the incidence of fractures has been quite high. Cottington (20) describes the use of beta-erythroidin hydrochloride with the metrazol. The beta-erythroidin decreases the strength of the muscular contractions and modifies the convulsion by acting centrally on the nervous system and by inactivating the acetylcholine at the myoneural junction. Cottington treated ten patients with an average of about 16 treatments per patient. Clinical improvement was demonstrated in eight of the ten. Of more importance was the fact that only one suffered any fractures.

Some drugs have also been used in the treatment of childhood schizophrenia. One which has been used with fairly good success is amphetamine. This drug seems to lessen anxiety and promote a feeling of well-being. It is given in 10 to 20 milligram dosage once a day. Bakwin (5) states that amphetamine does not have the depressing action on eating and sleep in children, as seen in adults. He feels that the drug is most useful in children whose illness manifests itself by sex acts. The response obtained was not uniform in all children so treated. Also if the drug was removed, there was rather rapid appearance of symptomology and regression, with improvement being noted with resumption of the drug.

Ephedrine sulfate, caffeine sulfate and oral sodium amytal have also been used. Different investigators give slightly different results, disappointing and variable from patient to patient.

Intravenous sodium amytal has also been tried. In most series about fifty percent of patients so treated showed hyperaction and agitation. The other half seemed to be more relaxed and happier. Also many children showed mild euphoria the day after injection. The general response to this type of therapy was considered to be unpredictable and temporary in duration.

Benadryl has been used on some children with schizophrenia, and it was felt that they showed improved sleeping patterns and decreased restlessness. Dilantin has shown favorable results in only those children who were overactive and impulsive. No consistently good results have been obtained.

Serpasil and thorazine have also been used but as yet, no conclusive results can be drawn. Present indications are that thorazine benefits those children with increased motor activity and marked autonomic nervous system lability. Thorazine is more effective than serpasil in central nervous system action by decreasing the synthesis of acetylcholine and interfering with transmission of impulses to and from the autonomic nervous system.

Psychotherapy in childhood schizophrenia has already been mentioned. Bakwin (5) points out that almost all childhood schizophrenics will require this type of therapy sometime during their treatment. He believes that the main goal of the therapist is relief of anxiety. There are many reasons why the child will be anxious. First of all, the child is frightened at meeting the therapist. As previously pointed out little can be accomplished until a favorable relationship has been obtained. A deeper source

of anxiety is the child's awareness that his feelings, sensations and experiences are not like those of other children. Children can be relieved of much anxiety if assurred that others feel and think like they and that the therapist is there to share their experiences with them. Another source of anxiety is the child's inability to adequately control aggressive, destructive and sexual impulses and abnormal body sensations such as exploding or flying off into space. Aggressive problems are handled by a calm accepting attitude, and feelings of guilt are eased. However, every effort must be made to keep the child in constant contact with reality. In children, any interpretation of the mechanism giving rise to the aggression are done so with great caution. Direct psychoanalysis as described by such authorities as Rosen (50) are rarely, if ever, applicable in child therapy.

The psychological conflicts with are part of everyday living are another source of anxiety in schizophrenic children. Such znxiety can be treated by reinforcing the defensive mechanisms already present in the child and/or attempting to reduce the source of conflict itself. Again, any attempt of interpretation and resolution of the conflicts in the patient's mind must be done so very carefully and only after a good relationship between child and therapist has

been gained. Another anxiety in the schizophrenic child and one which is very hard to treat is the failure of the patient to appreciate himself as an individual with dimensions and orientation. The child has trouble in distinguishing himself from the environment. It is very apparent that the most important aim of all such therapy is to gain a good relationship with the child. Further treatment will not be of any value until this is accomplished.

Child guidance clinics have been a means for treatment of childhood mental disorders, including schizophrenia. Probably the biggest problem facing such projects is possession of sufficient funds and personnel. However, those clinics meeting the latter two requirements have been quite successful. Again, the outcome of such therapy is dependant upon whether or not the child is capable of some relationship. Chess and Rubin (16) feel that the child's ability to form relationships is underestimated in many instances. It also appears that the gains and relationships made with the parents by the social workers is at times underestimated. One of the important contributions developing from the work of child guidance clinics is that the parents, in general, learn to live with the children as they are and stop urging them to be different. Thus the criteria for improvement by the parents is related to

socialization and to their own modification of expectations. In many cases, the disease process is not changed. Schizophrenic children can be treated in a child guidance clinic, if their behavior permits them to be maintained at home and is not disruptive to the functioning of the clinic as a whole.

Another source of therapy and one which is often a part of the child guidance clinics is that of the play group therapy. There are problems in this type of therapy as in all others. In the case of activity groups, unrestrained actions, lacking the necessary inner controls that may be undeveloped in the younger child, lead to chaos beyond the group's tolerance. The ability of any given group, as well as individuals, to withstand or absorb hostility and aggression has definite limits. With several children reacting, it is therefore necessary for the therapist to employ strategies and techniques to prevent disorganization, emotional tension and anxiety. When these factors are controlled play group therapy is indeed of value. Acting out has value only when it is an outcome of, and related to, the unconscious of the child and his emotional conflict. Diffuse hyper-activity, which may express hostility toward the environment including the

therapist, is in itself not therapeutic. The real value of acting out lies in the relation it has to the conflicts of the patient. Thus to be beneficial, acting out, when used with young patients, has to be limited, restrained and directed.

When using play therapy, the therapist must be aware of the significance and meaning of play in its many facets. Through play the child carries out the tasks of life and uses play for many other ends as well. The therapist must realize that through play the child expresses traumatic fixations, conflicts and hostilities; and that he employs it as a means of communication and reaction. Play is also used by the child to disguise difficulties and conflicts, or he may use it to relax tension and anxiety. The therapist can use play to overcome narcissistic and autistic fixations and to discharge libido through relationships with others in the group. Play is also used as a sublimation of primary instinctual drives which in their primitive form are socially not acceptable. Of great inportance is the fact that as the young patient discharges aggression and seeks to overcome traumatic anxieties, play acts as a regulative mechanism.

Slavson (55) states that, "The specific advantage of the group in play therapy lies in the catalytic effect

that each patient has upon the other, which makes it easier for them to act out and to bring forth in behavior phantasies and ideas. Another value of the group is that it reduces the tendency to repetition." It is obvious that all the fundamental dynamics needed in any kind of therapy for childhood schizophrenia are present in the play group atmosphere, namely; relationship, catharsis, insight and/or ego strengthening, reality testing and sublimation.

Cottington (21) stresses the use of various methods of therapy in the same case. This includes keeping the patient at home and in school by interpreting his behavior to the adults responsible for his care. Her goal with the patients at Bellevue Hospital has been to minimize the results of the schizophrenic process as much as possible, allowing such personality development as is possible to take place, and allowing education to proceed, thus giving the child some satisfaction in achievement. She concentrates upon bringing the child to his maximum social adaptation through a socializing program which diminishes external sources of threat and anxiety. Shock therapy and psychotherapy in the form of play therapy, dance, art, free discussion and psychoanalysis may also be utilized in the over-all therapy plan of a child. Cottington

emphasizes the generally accepted fact that, "While the results are discouraging in comparison with those in other psychiatric disorders of childhood, they are sufficiently good to force us to the realization that, if treated, many of these children have an outlook for further development." (21)

Finally, some word is appropriate concerning the management of the family of a schizophrenic child. Once the diagnosis seems definite, most parents can accept it. When told that other children have the same condition, their feelings of isolation and uniqueness are somewhat relieved. The various concerns of the parents are important. Guilt and hostility feelings are managed by free expression and by reassuring statements that it would be strange if they did not feel as they do, under the circumstances. Special problems in management are discussed as they arise, and constant encouragement and reassurance is helpful. In some instances the parents are themselves emotionally disturbed or psychotic and in need of psychiatric help. Group therapy for the parents of children with schizophrenia is of particular importance in view of the common problems these children have as they relate to both the home and community. Group therapy is helpful in many ways. Cooperation in therapy of the child is increased. An opportunity is afforded to give support

in the handling of specific problems and advice for general management. Bakwin (5) found that, "Interparental relationships were improved, the tendency to blame the conjugal partner for the child's unfortunate state, and in this way to relieve oneself of guilt in part at least, was dissipated as insight grew." Also, problems of social pressure, social isolation and helplessness are particularly well handled in groups. The parents seem to find strength in being a part of a group with common problems. Such group therapy for parents has made it possible for some children, who would have to go into an institution to remain at home.

PROPHYLAXIS AND PROGNOSIS

The subject of prophylaxis in childhood schizophrenia has an important role to play but is as yet in its initial growth. It is generally agreed that every attempt should be made to render the child's surroundings attractive to him, and that he should be encouraged to establish habits of meeting, rather than turning away from the problems of life. Also, younger children seem to respond best in the environment of their homes and schools. A few authors even go so far as to suggest eugenic measures in families with a history of schizophrenia or with a schizophrenic taint. However this does not seem at all practical since the etiology of schizophrenia still has to be revealed.

Prognosis is a difficult question to answer. Until a definite criteria for diagnosis is universally established, the opinions and statistics concerning prognosis will be variable and perhaps more inaccurate than otherwise necessary. Starr (56) sets down six factors which are important when trying to determine prognosis. The first is the child's inherent ability to seek out objects and autonomy. The greater these tendencies, the better the prognosis. Also the degree of maternal psychopathology and the mother's improvement in affective availability is an important factor. A third point to be

considered is the autistic-parasitic ratio. Since parasitism is one step above autism in ego development, a diagnosis or parasitic type of psychosis has the better the prognosis. If the psychosis develops after some maturation of ego, the prognosis is better than if the psychosis is on a fixation basis with arrested development. The fifth point is that those patients on the borderline possessing many neurotic tendencies, have a better prognosis than purely psychotic children. Finally, the sooner treatment is begun the better the outcome is likely to be.

Intellectual deterioration alone is not a very useful prognostic tool, since emotional disintegration is as important. Particular attention should be paid to the patient's ability to work and socialize, and to their lack of need for psychiatric supervision. Most authorities believe that attacks occurring very early in childhood carry a bad prognosis. Also, if the schizophrenia is insidious in its course, the prognosis is bad. If the patient has acute attacks he is prone to remissions and exacerbations. Sooner or later, however, the child has more frequent exacerbations with shorter and incomplete remissions. The disease gets progressively worse. This is seen even after some remissions, in which the child seemed quite well for a time. Others such as Despert and Sucharewa, as quoted by

Bradley (11) feel that an acute onset is definitely bad, with no hope for remissions or definitive improvement.

Actual figures of improvement vary. There are very few complete recoveries. Some series show a third of the patients with some improvement, a third unchanged and a third with progressive defects irregardless of the therapy. Lourie (39) and his group did studies on twenty definite childhood schizophrenics. They show nearly 20% complete recovery, and 25% who progressed to complete disintegration. The other 55% remained essentially unchanged. Potter and Klein (46) reported on fourteen cases in which only one child showed significant improvement. Generally speaking the prognosis in childhood schizophrenia is poor and any particular improvement can best be judged by the six factors discussed by Starr. Prognosis will remain poor until more is known concerning etiology, and until more uniform diagnosis and treatment is evolved and accepted.

CONCLUSION

This study and review of childhood schizophrenia has been very interesting and educational, and has created in my mind some questions which at a future date I would like to answer or have a part in answering. I want to freely admit that there are many points and theories concerning this topic that I do not understand, and itis for this reason that this paper may be negligent in different areas. The psychoanalytical terminology used by the Freuds in their work has not been directly mentioned due to my inability to understand their writing.

There are many great leaders and investigators in this field who disagree with one another on various points. These authorities do not have all the answers, and it is little wonder that a complete understanding of all the problems and complexities of the human mind escape me. With these apologies to my own inadequacies, I will express my thoughts on childhood schizophrenia.

I feel that the incidence of childhood schizophrenia is definitely less than 1%. This figure includes all children seen due to some sort of behavior problem no matter what the cause. However the percentage of children with schizoid traits or tendencies is much higher. I like to think of childhood schizophrenia as a metastatic growth

of the mind. Although it has a variable course, it will produce destructive and irreversible results if not treated. If all schizophrenics, including adults, could have their lives completely and accurately revealed, it would be seen that all of them had a trying childhood filled with anxiety and frustration. The onset may occur in childhood or become apparent at the time of a stressful event in later life. If schizophrenia presents itself in childhood, it does so after two years of age.

The problem of etiology is the biggest one that faces child psychiatrists. I do not feel that it is on an organic basis, or that it is hereditary. Rather it is due to the home environment and mainly to the affective ability of the mother. I feel that Starr's description of the symbiosis between mother and child to be the best theory. In children with schizophrenia, we see the abnormal extension of the symbiosis beyond the first two years of life, or its lack in the child's first year. Either extreme affects the growth of the child's ego so that we see either the parasitic child or the autistic child, respectively.

The diagnosis will never be clear cut due to the variable constitution of human beings. The main points to be identified are loss of normal affect as regards other

humans. Loss of interest in surroundings is prominent. Regression to habits previously learned is seen. General dullness and apathy are helpful findings. Peculiar actions and positions may be observed. The important point to remember is that no single patient will show all these signs, and the degree to which they are seen will vary. The definitive diagnosis will always have to be made ruling out such entities as mental deficiency, organic brain disease, and slow normal growth.

The treatment has to be directed at the whole home atmosphere and not just the patient alone. The child guidance clinic type of set-up seems to be the most ideal. The use of different shock techniques and various drugs are of uncertain, and in most cases, minimal value as far as curative treatment is concerned. Some of the drugs, expecially ataractics, are helpful in quieting and relaxing many patients. The crux of the therapy is to rebuild or at least brace the child's ego and defense mechanisms. This will, at least initially, be attained through the relationship gained between child and therapist. If this relationship of mutual understanding and faith fails to materalize, the therapy will be of little value.

The sooner therapy is initiated, the better the prognosis. The similarity can again be made with carcinoma where the sooner the diagnosis is made and effective therapy

started, the better the chances for at least partial cure. At the present time, the prognosis is poor with very few if any complete recoveries. However, many children can achieve a functional level that will enable them to participate quite adequately in their community.

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