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CONGENITAL BRAIN MALFORMATIONS IN THE MENTALLY RETARDED

BENJAMIN GOLDBERG, M.D.,* D. BERNARD FOSTER, M.D.,†
JOHN A. SEGERSON, M.D.† and JACQUELINE BAUMEISTER, M.D.**

Mental retardation is not a disease entity; chronic subnormal intellectual function from early life may be due to a wide variety of known and unknown factors. Exhaustive examination of retarded children with current clinical and laboratory techniques may fail to establish the precise etiologic diagnosis we seek, as an ideal prelude to prognosis, specific treatment, and research in the prevention of mental retardation. We think that insufficient stress is placed on the high frequency of congenital errors in development of the nervous system in individuals with lifelong mental retardation.

Ford[1] states: "In a recent survey of a large institution for defective children, the writer [Ford] was led to form the opinion that defects of development, or at least conditions of intrauterine origin, are responsible for the overwhelming majority of cases of mental deficiency; and that such a variety of types of defective development occur that descriptions of definite syndromes must be entirely arbitrary and of only didactic value. One gains the impression from such institutional material that degenerations of the nervous system are relatively rare, and that birth injuries, although not rare, are uncommon as compared with defects of development."

* Psychiatric Research Institute for Children, London, Ontario, Canada. Former Fellow, Menninger School of Psychiatry.

† Senior Physicians, Menninger Clinic, Division of Neurology, Neurosurgery and Internal Medicine.

** Clinical Director, Parsons State Hospital and Training Center, Parsons, Kansas.

We were similarly impressed with the high proportion of congenital brain malformations found in a recent survey of a state residential treatment center for 700 mentally retarded patients (The Parsons State Hospital and Training Center in Parsons, Kansas). A selection of 194 of these patients for study was based on completeness of diagnostic appraisals. All of the children could walk alone. Their age range was eight to 16 years. Their intelligence quotients were below 80. They were observed for a minimum of six months. Their birth weights, and reasonably complete data on the family, antenatal, birth and developmental history were available. The study included a general physical examination, neurological examination, serological test for syphilis, blood count, blood typing, urinalysis (including tests for phenylpyruvic acid), electroencephalography, X-rays of the chest, skull and wrists, speech and hearing tests, and psychological tests. Other examinations were also carried out for specific indications.

Incidence of Congenital Brain Malformations

In Figure I are summarized the major diagnostic categories for the 194 patients we studied. Sixty-one percent presented manifestations of an antenatal developmental defect state. Some classical syndromes of maldevelopment found included hypertelorism, Arnold-Chiari malformations, craniostenosis, and non-familial microcephaly.

We agree with Ford that "descriptions of definite syndromes must be entirely arbitrary." Our inclusion of patients in the congenital brain malformation group was based on (1) failure to demonstrate any other cause for the retardation, (2) absence of significant birth trauma, (3) absence of historical or other evidence of postnatal nervous system injury, (4) the appearance of signs or symptoms of delayed brain development in the first six to 12 months following delivery, (5) the observation of the stigmata of congenital deviation in association with the impairment of intellectual functions, and (6) the presence of defective motor system development in a high percentage of patients.

The estimates of other observers[2, 3, 4] range from 37 percent to 74 percent incidence, with four of the five observations ranging from a 61 percent to 74 percent incidence of antenatal developmental disorders in large groups of retarded children (Figure I).

Clinical Aids in Diagnosis

The fetus has developed in six to seven months to a degree which

ETIOLOGY OF MENTAL RETARDATION

	Congenital Brain Malformations	Destructive Processes (at birth or postnatal)	Inborn Errors of Metabolism	Neoplasm	Subcultural (also idiopathic, familial mental deficiency, and those with normal neurological examinations)
Current Clinical Study % of 194 patients (institutional)	61	12	1	0	26
Yannet[2] Clinical Study % of 2000 patients (institutional)	37	10	13	0	40
Levinson and Bigler[3] Clinical Study % of 325 patients (private consultation)	72	15	0	0	13
Malamud[4] % of 543 autopsies (institutional)	74	22	2	2	0
Yannet[2] % of 2000 autopsies (institutional)	62	17	21	0	0

FIGURE I

permits extrauterine existence. The brain has by then completed the major portion of its organogenesis and differentiation. An adverse intrauterine environment in the final trimester of pregnancy is, therefore, not nearly as significant a factor in provoking errors of antenatal development as are malfunctions of the fetal environment in earlier embryonic development.

Fifty percent of the length of a normal two-month fetus is made up of head and neck; 25 percent of the length of a four-month fetus is made up of head and neck.[5] So the cephalic end of the fetus, including the brain, grows at a disproportionately greater rate than the remaining portion of the fetus during the first trimester of pregnancy. *This first trimester is the important time for errors in central nervous system development to occur.* Minor deviations in organogenesis at this stage affect adversely all of the later stages of intrauterine development and differentiation.

In part, we recognize retarded youngsters with congenital brain malformations by external signs of arrested development characteristic of stages of fetal differentiation which should have occurred during the

first 12 weeks of intrauterine life. Measures helpful in the diagnosis were reports of physical examinations of the mother *before she became pregnant* with the subsequently retarded child, and precise knowledge of the mother's health while pregnant, especially during the first trimester of pregnancy.

The average birth weight of normal white infants in the United States is 7.5 pounds (3400 grams). In the group of 194 children we studied, the average birth weight was 6.38 pounds (2900 grams) with 67 percent weighing less than 7.5 pounds, and 33 percent weighing over 7.5 pounds (Figure II). Immediate postdelivery histories of cyanosis, motor apathy, motor weakness, or respiratory difficulty were common, as were histories of treatment for noncerebral congenital anomalies.

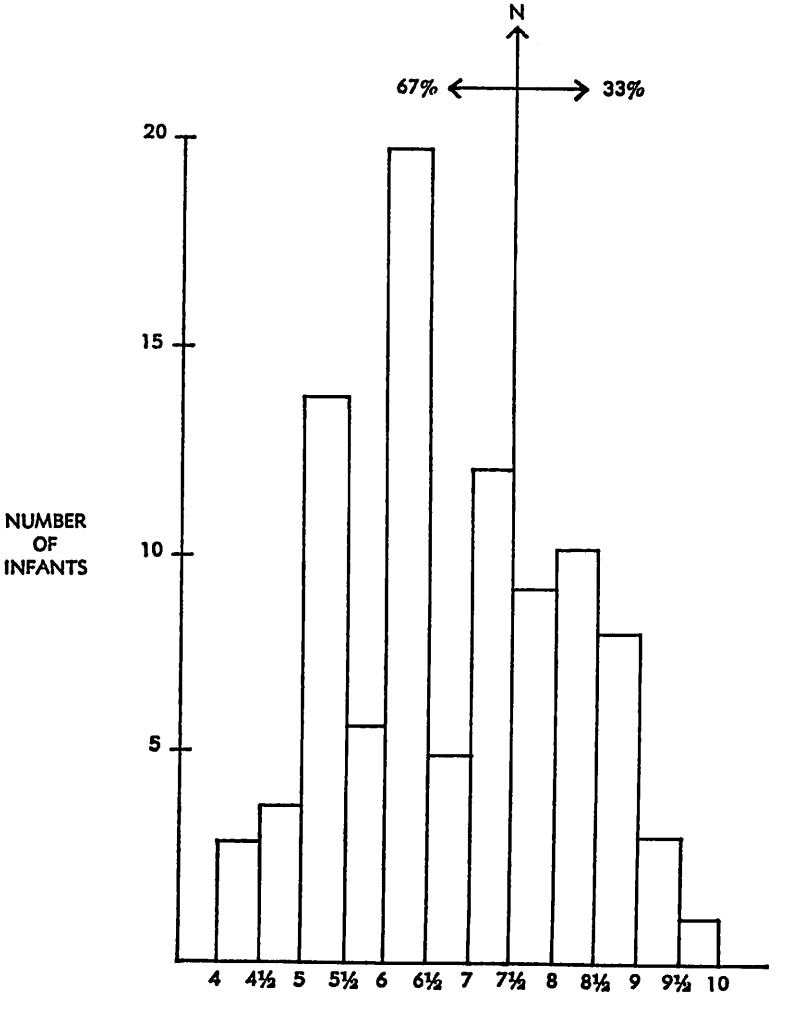
The age of acquisition of the usual motor skills of infancy and childhood (rolling over, crawling, sitting, standing, independent walking, beginnings of verbal speech, acquisition of discrete finger movements, development of sphincter control) was commonly in the low normal to gross retardation range.

Using the State University of Iowa Department of Pediatrics standards for height and weight, we found that 67 percent of the children were more than one standard deviation below the average height, significantly shorter, for their age and sex. Their weights were within the range of normal.

The ectodermal structures showed many deviations, such as persistent lanugo hair, or anomalies of hair distribution; supernumerary nipples; cafe-au-lait spots; malformations in size, shape, dentine development, distribution, symmetry and placement of the teeth; Simian lines in the palms of non-Mongol retardates; persistent fetal webbing of fingers and toes; unusually thin and delicate skin; ichthyosis, midline lumbosacral hair tufts, and dimples; and persistent fetal creases of palms and soles. Rarely, congenital cataracts with little functional visual defect were observed.

Examination of the body walls, viscera and genitalia by clinical examination and X-ray revealed scattered instances of congenital cardiac disease, transposition of the visceral organs, urographic demonstration of renal anomalies, and malformations of the external genitalia.

Disproportion in the size of the various body parts was found to be fairly common: Extremities were too short for the length of the torso, digits were too short for the length of the arms and legs, ocular globes



DISTRIBUTION OF BIRTH WEIGHT IN A CONGENITAL BRAIN MALFORMATION GROUP

FIGURE II

were too small for the size of the face (microphthalmia), and the fifth digit in non-Mongols was too short for the other fingers. There was commonly more than the average degree of asymmetry between the size of right and left hand, length of right and left foot, size of the left and

right half of the thoracic cage or placement of the breasts on the thoracic cage.

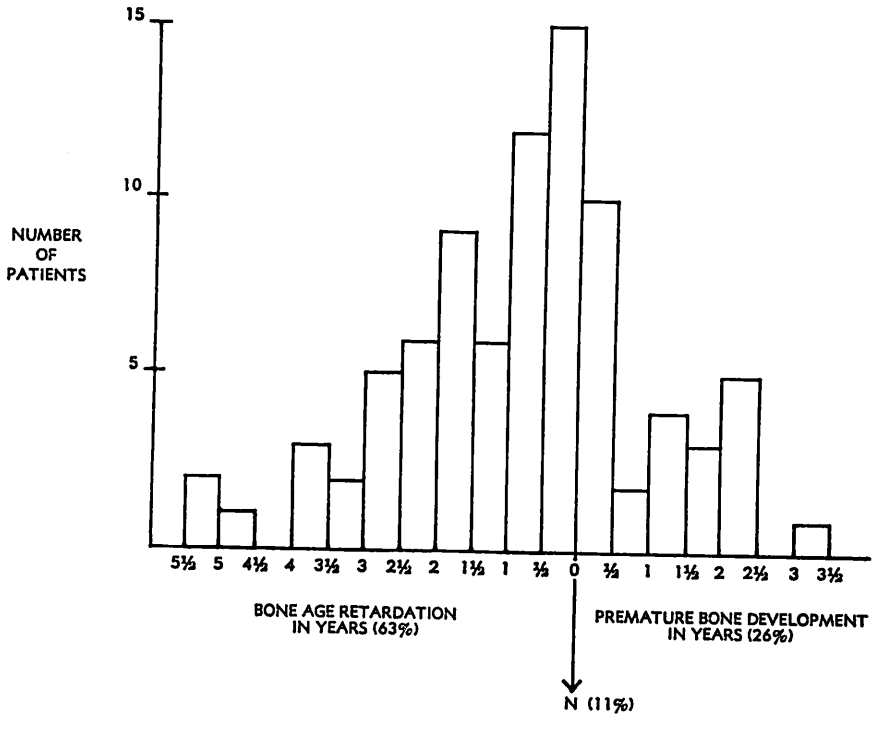
Careful observation about the face and skull revealed microphthalmia, hypertelorism, micrognathia, dental maldevelopment, Mongoloid slant of palpebral fissures, and conjoined eyebrows in some cases. The degree of maturity of development of the external auricles and their position of attachment on the skull were particularly deviant from normal and provided easily visible signposts of developmental errors of the first trimester of pregnancy. Such deviations in the symmetry of placement of the external auricles also signaled maldevelopment, indicating an error in migration of the auricles during the first eight weeks of pregnancy, or an asymmetric development of the cranial bones, particularly the temporal bone.

The formal neurological examination of cranial nerves, reflexes, motor and sensory systems rarely gave evidence for localizing or lateralizing structural brain damage. Subtle symmetrical changes in the motor system were the most common abnormalities, such as distal hypotonia of the hands with hyperextensible digits, retardation in the speed of movement, a clumsy and awkward performance in tandem walking (the rail test), independent standing and hopping on one leg, ungainly walking and running with impaired rhythm of movement, and a slowed and defective performance in carrying out discrete movements. Many children were unable to close one eye independently of the other, or to carry out isolated finger movements as in the direction to "play the scales on the piano" without carrying out mass finger movements. Rapid alternating movements of the tongue were commonly impaired, as was the ability to curl the tongue at the edges; these defects are commonly associated with the almost universal dysarthria.

Mild, diffuse underdevelopment of spinal and extremity musculature associated with symmetrical diminution of muscle strength was a common abnormality.

Tests for the preference of eye, hand and foot laterality showed 57 percent with crossed laterality; that is, the preferred eye, hand and foot were not all on the same side. Thirty-nine percent of the group had consistent right eye-hand-foot or left eye-hand-foot laterality, and four percent had no established laterality. This is not differentially diagnostic from other types of brain-damaged retarded children.

Eighteen percent of the group had a seizure disorder; *grand mal*



DISTRIBUTION OF BONE AGE IN A CONGENITAL BRAIN MALFORMATION GROUP

FIGURE III

convulsive disorders were the commonest type, with mixed *grand mal* and other seizure types occurring in a third of the seizure group.

Laboratory examinations were of limited value in the recognition of congenital brain malformations, except in excluding other causes for mental retardation. Skull X-rays confirmed cranial bone asymmetry and abnormalities of contour and suture closure. X-rays of the wrist for the age of bone maturation showed 63 percent with bone-age retardation, 11 percent with concordant bone age-chronological age, and 26 percent with hypermature bone development (Figure III).

Blood group determinations revealed a normal distribution of the A, B, O, AB and Rh factors.

Discussion

Our study of congenital brain malformations associated with mental retardation confirms the opinions of others that a high proportion of

retarded youngsters owe their handicap to errors of intrauterine development, many of which began in the first trimester of pregnancy.

Many factors leading to intrauterine errors of development are open to preventive measures, many of which are unknown by prospective parents. In most states, a license to marry (and have children) is issued upon the verification that the marriage candidates are free from evidence of active syphilis and active gonorrhea, lulling the potential parents into the false feeling of security that they are adequately prepared for parenthood.

We have no quarrel with these marriage requirements which reduce congenital syphilis (with a high incidence of associated mental retardation) and gonorrheal ophthalmia neonatorum (with its devastating effects on visual acuity), but many prospective parents and their physicians would also like the protection of knowing how to prevent, when possible, other causes of congenital malformations.

Since no decline in the incidence of congenital malformations in the United States has been shown in the past 20 to 40 years, it seems appropriate to briefly review some "loading" factors which predispose to errors in intrauterine development, that result in mental retardation and congenital malformations.

We find the concept of Pasamanick[6] a useful one: he speaks of a "continuum of reproductive failure," that is, of a high incidence of reproductive difficulties of various types in the histories of women who give birth to retarded youngsters. This includes relative sterility, multiple miscarriages, stillbirth, death in the first week of life, prematurity and children with low birth weights.

It should also be understood that congenital errors in development rarely confine themselves to one organ or system of organs, but involve in varying degree multiple organs and regions of the body.

1. *Maternal health prior to conception*: Prospective mothers who desire the highest percentage of healthy babies should be in an ideal state of good health prior to conception, *i.e.*, free of any preventable or curable disease.

2. *Age of mother at time of delivery*: Congenital malformations occur in a higher frequency in the earliest and latest ages of potential childbearing. It is impossible to be specific about ideal ages for childbearing because of the lack of parallelism between physiological age and chronological age in a woman of childbearing age. A suggested ideal age span for maternal conception would be between 18 and 38 years.

3. *Maternal weight*: Prospective mothers should be close to their ideal body weights. Obese females have a significantly higher incidence than do childbearing females at their ideal weights of absolute sterility, relative sterility, prematurity, preeclampsia and eclampsia; these are the well-known handmaidens of congenital malformations and also cause complications which increase maternal morbidity and mortality. Many systemic diseases manifest themselves by weight loss or body weights which are below ideal: a childbearing female below her ideal weight at the time of conception is not an ideal candidate for a healthy pregnancy and a healthy baby.

4. *Maternal diet*: The details of an adequate diet before and after conception are well described elsewhere.[7] Diets adequate in caloric content, proteins, vitamins and minerals are tremendously important in the development of a healthy fetus from the moment of conception. Inadequate diets cause a significantly higher percentage of premature deliveries, low birth weights and congenital malformations. Two out of three retarded youngsters in our study had birth weights below the ideal. In our culture, diet is probably one of the easiest factors to correct prior to conception and during pregnancy, *if the prospective mothers know early in the course of their pregnancy of its importance in the development of the unborn baby.*

Some diets are inadequate because of: ignorance—the mothers do not know the importance of an adequate diet for the maintenance of a healthy fetus, poverty—the mother cannot afford an adequate diet, and narcissism—the mother "does not want to lose her figure." Diets which are restricted because of allergies, duodenal ulcer, obesity, or chronic diseases must be planned with particular care for prospective and actual pregnancy.

Personality disorders manifested in abnormal diets must be recognized and managed with attention to the welfare of the unborn child. Such diets involve (1) excessive alcoholic intake with adequate calories but inadequate maternal nutrition, (2) hyperemesis gravidarum, with its psychological overtones, (3) food faddism with elimination of important nutrients, (4) immaturity—the teen-ager's black coffee for breakfast, hamburger and soft drink for lunch, and steak and salad for dinner, (5) paranoid delusions about the make-up of the diet, and (6) depressive

reactions with anorexia. These are all potentially devastating to a healthy pregnancy.

5. *Maternal infections*: Maternal syphilis, German measles in the first trimester of pregnancy, cytomegalic inclusion body disease and toxoplasmosis are well-documented examples of maternal infections which may adversely affect the development of the unborn baby. More difficult to document with irrefutable evidence is our conviction that other maternal infections during the first trimester of pregnancy may exert an adverse effect on the developing nervous system of the fetus. In our study, a number of mothers of the children with congenital brain malformations had maternal infections of various kinds—tuberculosis, collagen diseases, respiratory infections, urinary tract infections, virus infections—during the first trimester of the pregnancy.

The virus of German measles has recently been isolated.[8, 9] Women of childbearing age who have not had German measles will probably soon be able to develop the disease from the isolated live virus and secure lifetime immunity prior to conception. German measles is an innocuous ailment in nonpregnant women, but, occurring during the first trimester of pregnancy, about 20 percent of the children born develop congenital malformations of the eye, ear, heart and brain.

6. *Anoxia and hypoxia in pregnancy*: In laboratory animals, it has been shown that anoxia during critical periods of pregnancy predisposes to congenital malformations, and there is reason to believe that it may similarly affect humans. Heart or pulmonary disease with any degree of hypoxia in the mother during early pregnancy harms the developing fetus. Our congenital brain malformation histories include instances of maternal asthma, maternal bronchiectasis, maternal rheumatic heart disease, pulmonary tuberculosis, elective and mandatory surgery under general anesthesia, and chronic anemia. Respiratory infections with any degree of air hunger are serious ailments in pregnant women and they should be vigorously and carefully treated.

7. *Thyroid disease*: Women with hypothyroidism have difficulty in becoming pregnant, and have a high percentage of spontaneous abortions and premature babies. Hypothyroidism in the mother has long been suspected as one of the extrinsic factors in the genesis of Mongolism.

In a recent study[10] of 23 pregnancies in 22 women with known or suspected thyroid dysfunction, there were 1 abortion, 2 stillbirths, 2 neonatal deaths, 5 living infants with retarded or abnormal physical and

mental development and 13 living infants who were normal at one year of age. Forty-three percent of the pregnancies led to an undesirable result, an incidence of reproductive failure far beyond average expectations.

Women who have been on thyroid medication at any time prior to conception, who have had thyroidectomies, who have had radioactive I_{131} therapy for thyroid disease, or who have had propylthiouracil or similar drugs to suppress thyroid function need to have their thyroid function evaluated with particular care prior to pregnancy, and appropriate thyroid replacement therapy carefully adjusted during pregnancy. Any suspicious symptoms of hypothyroidism (mass in the neck, ease of gaining weight, undue ease of fatigue, low body temperature, intolerance to cold, relative poverty of perspiration, "puffiness" about eyes and other subcutaneous tissues, slow pulse, hypermenorrhea, anemia, etc.), should be called to the physician's attention so that appropriate thyroid function examinations and treatment can be carried out.

8. *Diabetes and prediabetes*: Maternal diabetes presents extra hazards to both mother and fetus, manifested by spontaneous abortion, hydramnios, congenital abnormalities, acidosis, hypoglycemia, toxemia, prematurity and large babies. Assiduous treatment of the pregnant mother diminishes the hazard to some extent, but fetal morbidity and fetal mortality are still distressingly high.

MATERNAL AND FETAL MORTALITY IN 584 PREGNANCIES IN DIABETICS:[11]

Years	Number of Cases	Maternal Mortality Percentage	Total fetal loss percentage (stillbirths and neonatal deaths)
Before 1941	49	2.2	32.6
1941–1948	141	1.4	25.4
1949–1952	102	1	25.5
1953–1957	165	0	23.8
1958–1961	127	0	13.4

This table indicates the high proportion of stillbirths and neonatal deaths under the management of an obstetrician with a particular interest in diabetes and pregnancy, utilizing every known treatment device in management.

Since many congenital malformations are not obvious at the time of delivery, it is difficult to get reliable percentage figures on congenital

malformations in children born to diabetic mothers. Kade and Dietel[12] reported congenital malformations in diabetic pregnancies of 3.6 percent (110 deliveries) as compared to 0.5 percent in 1000 nondiabetic deliveries. Without specifying the incidence of nervous system malformations, Gonce[13] gave an incidence figure of one congenital malformation out of six children born to diabetic mothers, contrasted with one congenital malformation out of 55 nondiabetic mothers. Dekaban and Magee[14] described the neurological abnormalities in five patients born to diabetic mothers; they stated that "the chief clinical abnormality in all four surviving infants described in this paper consisted of a severe degree of mental deficiency."

The inference is strong that retarded youngsters whose mothers develop overt diabetes subsequent to the pregnancy had "prediabetes" as an etiologic factor in the genesis of malformation.

A family history of diabetes, overt diabetes during childbearing female age, glycosuria, or an abnormal glucose tolerance curve during pregnancy, are factors which merit particular care and attention during childbearing years and pregnancy.

9. *Drugs and medications during pregnancy*: The well-publicized tragedy of thalidomide intake during early pregnancy by pregnant women and the subsequent defective limb development of their children has focused attention on the potential effects of drug intake in the early months of pregnancy on intrauterine fetal development.

So many pregnant women have used various drugs over the years without damage to the fetus that clinical testing of these drugs has been possible. But it is now well known that testing of new drugs on pregnant animals does not adequately test the ability of pregnant women to tolerate the drugs with safety to their unborn child.

No unnecessary drug should ever be taken by a pregnant woman, particularly in early pregnancy; any drugs taken during pregnancy are warranted only if the reasons for taking them are compelling enough to justify potential hazards to the fetus; drug intake during pregnancy without close medical supervision is hazardous (thalidomide was not a prescription drug and could be purchased "over the counter").

Drugs that have been implicated in the genesis of some congenital malformations include propylthiouracil and other antithyroid drugs, abortifacient drugs (ergot, apiol), tetracycline, vitamin K, folic acid antagonists, corticosteroid compounds, and stilbestrol (and stilbestrol-like drugs).

10. *Smoking*: Simpson and others[15] have reported that prematurity in pregnant women smokers is directly related to the number of cigarettes smoked each day. Savel and Roth[16] correlated birth weight in 1415 babies and the smoking habits of their mothers, saying that "the number of cigarettes per day did seem to affect the birth weight of the babies, smaller babies being born to smokers. The smallest babies were born to women who smoked over 20 cigarettes a day. Twice as many babies premature by weight (2500 grams or less) were born at term to women who smoked 20 or more cigarettes per day than to lighter smokers. Babies premature by weight were born at term about four times as often to women who smoked 20 or more cigarettes per day as to nonsmokers, either Negro or white."

11. *Prematurity and prenatal care*: A number of investigators have found that premature children have a high incidence of mental retardation (Alm,[17] Asher and Roberts,[18] Beskow,[19] Drillien,[20] Knobloch et al.[21]). A study of "Congenital Defects Associated with Prematurity" by Alison D. McDonald[22] documents particularly well the association between congenital malformations and prematurity. Of a group of 3179 children, 204 were premature (birth weight below 5½ pounds). Of the 204 premature infants, 32 were stillborn, 23 died neonatally, and 149 survived the first four weeks of life. One child died of leukemia at 14 months and six could not be traced. One hundred and forty-two of the 148 remaining children were evaluated between three and six years of age. Of the 142 surviving children, nine percent were found to have severe defects (cerebral palsy, deafness, serious eye defects) as contrasted with a two percent incidence of such defects in 2975 full-term children.

The extent of prenatal care by physicians is an important factor in the prematurity incidence. Dunham's figures[23] on 166,977 infants in New York City are as follows:

First Prenatal Visit to a Physician	Prematurity Rate
First Trimester	7.8%
Second Trimester	8.7%
Third Trimester	10.2%
No Prenatal Visit	20.3%

While factors other than antepartum medical care may be operative in this group, it appears that women receiving prenatal care throughout pregnancy have a lower incidence of prematurity. Inferentially, the incidence of mental retardation and congenital malformation could be lowered by more adequate medical supervision of pregnant females.

12. *Attempted abortions*: In three instances in our series, mechanical or drug attempts at abortions were reported by the mothers. Case reports involving such attempts are rare and their importance in producing congenital malformations will probably never be known.

13. *X-ray, fluoroscopy and ionizing radiation*: Laboratory animal experimentation and clinical observation in humans have shown that radiation exposure at critical periods of intrauterine development leads to the development of congenital malformations. As with drug intake during early pregnancy, the need of diagnostic X-rays has to be balanced against possible harm to the fetus and used with great care and discretion. Firm controls over the use of uncalibrated diagnostic X-ray machines with abundant scatter, and fluoroscopic devices (as in fitting shoes) have been established in some states (Kansas, for one); women who may be pregnant should avoid unnecessary exposure to diagnostic X-rays and radioactive materials.

A missed menstrual period is an extremely important historical item before any voluntary exposure to ionizing radiation.

14. *Miscellaneous*: Unusually heavy manual exertion, gymnastics, unnecessary travel, insufficient rest and sleep, avoidance of external trauma, avoidance of unnecessary exposure to contagious and infectious diseases (*e.g.*, nurses, teachers of young children, laboratory technicians), and minimizing exposure to inclement weather are common-sense precautions for any pregnant female.

Many pregnant women tolerate environmental stresses which create less than an ideal environment for the unborn baby without demonstrable injury to themselves or the fetus. The margin of safety is wide in average situations, but an average pregnancy may change to an abnormal situation with astounding rapidity. The women who must exercise more than the average degree of caution are those who have previously delivered a baby with a congenital malformation (the risk of a congenital malformation in a later pregnancy is estimated at 10 percent) and those with previous histories of reproductive insufficiency (relative sterility, miscarriage, prematurity, stillbirth, low birth weight baby, neonatal

mortality). As enumerated in the preceding list of the "loading" factors in congenital malformations, women in less than an ideal state for childbearing from any cause must exert particular care prior to and during pregnancy if the genetic determinants of the forebears are to be realized to a maximum degree.

Summary

In a survey of an institutional group for retarded children, 61 percent of the retardates were found to be associated with errors of intrauterine development. The examinational features of this group of congenital malformations are described. Emphasis is placed on the importance of an ideal state of maternal health prior to and during pregnancy if the risk of mental retardation associated with congenital brain malformations is to be reduced.

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SOCIAL INTERACTION AND PHYSIOLOGIC CHANGE*

WILLIAM W. SCHOTTSTAEDT, M.D.†

Some years ago a young woman of 33 was referred to me for study of premenstrual tension associated with outbursts of uncontrolled rage. As a part of the study she was asked to collect urine specimens at regular intervals throughout the day for a period of approximately two and a half weeks.[1] These studies showed no relationship between the attacks of rage and her menses; but they did reveal some interesting information.

One evening she invited a friend of hers to visit in her apartment. He brought along another friend named Bill. Bill and the patient, Marian, worked together in the same office but were not well acquainted. The two men found that they were both interested in medieval art. Marian had no interest whatever in medieval art and was bored by their conversation. She suggested that they change the topic. They, however, were deeply engrossed in their discussion and continued to talk about the meanings of medieval art. Marian became quite furious with them. After a heated argument she threw them out of her apartment and followed them angrily down the stairway, kicking at them all the way. At the bottom of the stairway she found the landlord who had come to see what all the commotion was about. He complained that she was creating an undue disturbance. She kicked him in the shins and returned to her room.

In Table I are recorded the excretion rates observed during this period of time. At the time of the fight with her friends, the renal excretion rate for water was only slightly above the average excretion rate for that period of day. Sodium excretion likewise was only slightly increased. Potassium excretion was essentially unchanged. Thus a relatively violent outburst of angry behavior was reflected by moderately increased rates of excretion of water and sodium.

Two days later she came to see me in the clinic. During this clinic visit she recounted the entire episode with renewed expressions of anger and with a certain amount of anxiety lest I criticize her for her loss of control. During this interview, excretion rates for water, sodium and potassium were all markedly increased. Thus, recounting the episode

* Presented to a forum of the Menninger School of Psychiatry, March 13, 1963.
† Chairman, Department of Preventive Medicine and Public Health, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

TABLE I
SOCIAL INTERACTION AND RENAL EXCRETION

	H_2O cc/min	Na ueq/min	K ueq/min
Neutral situations	0.83	85	37
Fight with friends	1.83	122	28
Recounting to physician	2.26	175	56
Awaiting landlord	0.66	79	28
Rejected by colleague	2.56	311	56
Rejected by boss	2.88	289	153
Considering suicide	0.47	45	28

was associated with much more marked deviations of renal excretion from the average than was the actual event itself.

About ten days after the fight she had to visit her landlord to pay her rent. She considered paying by mail, though he lived in the same house, but decided against this since it seemed cowardly. This was the first occasion on which she had seen him since kicking him in the shins on the night of the argument. She felt she had been "a bad girl" and wondered what his reaction would be when she went to see him. On this occasion, as evidenced in Table I, renal excretion rates of water, sodium and potassium were all decreased below the average rates for that period of the day. Thus, recounting the episode to a physician, while feeling some anxiety about how he would respond, resulted in increased rates of excretion while visiting her landlord and thinking about exactly the same episode, but in a totally different way, was associated with decreased excretion rates.

This was not the end of this particular situation, however. The following day at work she had trouble with Bill. He seemed a little distant. He had never been very friendly, however, so she was not sure what this meant. She tried to evaluate whether he was preoccupied with his work or trying to avoid her. Finally she decided to find out. She asked him if he would have coffee with her during the morning coffee break. He refused rather coldly. She was furious at him for refusing, but turned on her heel and went off to coffee with the other girls in her office. In this instance she suppressed her anger and her desire to react with bodily violence, but the anger bubbled up inside of her the rest of the morning. Excretion rates on this morning were several times greater than on neutral mornings. Sodium excretion was particularly high. She continued to brood over this matter throughout

the afternoon, feeling angry and humiliated by his refusal to have coffee with her. Excretion rates continued to be significantly elevated throughout the day.

Marian had come to me initially because her outbursts of anger had caused her considerable difficulty on the job. Her boss had told her that if she lost her temper once more she was going to be fired. During the period in which we were doing these studies she had some difficulty with her boss. She had gone to the water fountain to get a drink of water and thought the water tasted peculiar. She commented that it did not taste right to her. Her boss, who was standing nearby, said in rather clipped tones that the water tasted perfectly all right to her. This was said in the presence of other people in the office and Marian said she felt humiliated by this exchange. She, however, made no comment. In fact, she was afraid to let herself feel angry in this situation, clamping down tightly on her feelings. As will be seen in Table I, excretion rates under these circumstances of rejection were quite different. In the episode where she was rejected by her colleague and felt considerable anger, allowing it to bubble up inside her for hours afterwards, she had a marked increase in sodium excretion and only a moderate increase in potassium excretion. In an episode where the anger itself was a considerable threat and all of her efforts were expended in controlling this, she also had a very marked elevation in potassium excretion.

With all of these difficulties she subsequently became extremely depressed and spent one afternoon considering various ways of committing suicide. She felt worthless and hopeless, deciding that nobody was going to be able to cure her and she might just as well end it all and put herself out of her misery. In this setting with her anger turned against herself, her excretion rates were all reduced far below average excretion rates during neutral periods.

Thus, in this one individual we find exemplified the rather marked effects which emotions and attitudes can have on renal excretion. Other studies have confirmed these relationships. Anger is usually associated with an increased excretion rate for both water and sodium. Anxiety is similarly associated with an increased excretion of water and sodium; but the increase in sodium excretion is much more marked with anger than with anxiety. Both tension and depression are associated with decreased excretion rates of water and sodium. The necessity to exercise

conscious control over emotional states is frequently associated with an increase in potassium excretion.

These data also emphasize the tremendous importance of social relationships in determining behavior and physiologic changes. Her attitudes, behavior and renal excretion rates were all affected by the person with whom she was interacting. Rejection by a colleague and rejection by her boss were associated with different types of emotional reaction and were accompanied by different patterns of renal excretion. Reconsidering a fight she had had with friends was associated with opposite renal excretion rates when this was done in the presence of a physician and when she was contemplating seeing her landlord again. They were also very different when she was reliving the angry feeling she had had at the time of the fight and when she was subsequently considering how worthless she was and contemplating suicide.

Since the time at which these particular studies were done, a number of similar studies have been performed on a metabolic ward.[2, 3, 4] On this ward many patients are hospitalized for weeks or months for metabolic studies of disease states and response to drugs. It seemed that this would be an excellent setting in which to study social interactions and their effect on body physiology. The patients were on these wards for a long enough period of time to get well acquainted and to develop their own groups. A certain number of these patients were on a rigid metabolic regimen so that their intake was precisely known and their excretion rates could be carefully determined. The possible effects of exercise and food or fluid intake could therefore be minimized and deviations occurring interpreted more precisely in terms of emotional states and social settings.

The general emotional tone of the ward had a striking effect on how frequently metabolic deviations would occur and how marked they would be.[2] It was found that stressful events occurred on twenty-five percent of patient days during periods when the ward atmosphere was calm. Stressful events occurred on forty percent of patient days during periods of ward disturbance. This increase would be expected in view of the fact that the ward was disturbed. However, it seemed significant that of those events considered stressful, less than half were associated with significant metabolic deviations on days when the general atmosphere of the ward was calm, whereas eighty-six percent of them were associated with significant metabolic deviation on days when the ward

atmosphere was disturbed. Thus, the background setting in which the stress occurred seemed to have an influence on whether the stress would be associated with significant metabolic deviations or not.

In studying patients on this ward, it was found that a number of elements contributed to the status of a patient within the patient group.[3] One of the most important of these was the ability to conform rigidly to the balance regimen. Those who were unable to do so were considered "weak." Those who managed to conform for long periods of time were admired for their ability to do so. A second factor in determining status was length of hospitalization. Older patients instructed new arrivals. Those who had had many studies done on them were quick to let people know this. When unusual results had been obtained, this was also common knowledge among the patient group and was seen as a real contribution to the research aims of the ward. Type of illness influenced status on the ward. Leukemia was a common disease on this ward and leukemic patients had less status than did patients with biliary cirrhosis. However, the seriousness of an ailment seemed to have some importance. Thus migraine headaches, though associated with more pain than many of the other diseases represented on the ward, afforded little status to the sufferer as compared with cancer of the breast, leukemia or cirrhosis. Congeniality and forcefulness of personality without open aggressiveness were highly regarded. Special talents could increase a person's status, particularly if these could be used for the benefit of others.

The importance of status among patients on the ward was highlighted by the competition of two women for it. Mrs. Parry had been on the ward for almost two years when the study began. She conformed readily to routines and had been the subject of many studies. She had a rare illness, xanthomatous biliary cirrhosis, and had aroused much interest from the staff. Her personality made her well liked by staff and patients. Therefore, at the beginning of the study she enjoyed the highest position among the women on the ward.

At the time the study was initiated another patient appeared on the ward, Mrs. Dietrick. She also had xanthomatous biliary cirrhosis. It was the first time in two years that another patient had come into the ward with this illness. The new patient had a very domineering personality. As the eldest of six children, she had been forced to assume responsibility for the care of her younger siblings early in life. She

resented this. Her family had been one in which there had been little display of affection. She had attained her parents' approval and her own self-esteem largely by excelling others. She could not tolerate being in second place. One of her most painful memories from childhood was of a spelling contest in which she ended in second place. Nor would she take second place to her husband. She had been married for some years and had managed both family and farm. She remarked on one occasion that she had often said to her husband "I should have been the man of this house." To Mrs. Dietrick the ward was another arena in which to establish her dominance.

At the beginning of the study, the relationship between the two women was one of courteous neutrality. It was planned that studies of the effect of ACTH should be done on both women simultaneously after suitable baseline studies. Mrs. Dietrick's baseline was satisfactory but Mrs. Parry's baseline fluctuated. Therefore on the appointed day only Mrs. Dietrick was given ACTH. This seemingly simple decision resulted in a tremendous emotional experience for both women.

On the morning following her first dose of ACTH Mrs. Dietrick appeared at breakfast in high spirits. She wore earrings and a choker, which surprised the other patients since she had previously dressed very simply. Throughout the day she made references to "poor Mrs. Parry" who had been unable to get the medication. Mrs. Parry, on the other hand, stayed in her room incapacitated by a severe migraine headache. Both women showed marked fluctuations in metabolic balance for the next two days. The significance of these events was clearly indicated a few days later when Mrs. Parry commented, "When I see how well Mrs. Dietrick is doing it almost kills me." Balance data are shown in the accompanying table where data are given in standard deviations from the mean. Thus, any figure above two is significant at the five percent level or less. Deviations were greater for Mrs. Parry, who had lost status on the ward, even though she was receiving no ACTH and Mrs. Dietrick was.

TABLE II
METABOLIC FLUCTUATIONS (S.D.) ASSOCIATED WITH PATIENT COMPETITION

Patient	*Na*	*K*	*Cl*	*N*	*P*
Mrs. Parry	−5.0	+0.4	−6.8	+1.0	−1.3
Mrs. Dietrick	−4.1	−1.5	−1.3	+4.9	+0.7

Changes in status were associated with marked metabolic and symptomatic change in other patients as well. Thus, when Mrs. Dietrick lost prestige among the patients later in the study, she responded by developing severe back pain which required close attention from the nursing staff. Another patient when isolated from the patient group, in which he had previously been a person of relatively high status, showed marked retention of fluid and electrolytes during the period when the patients were disapproving of him.

There were a number of situations arising during these studies which affected the ward as a whole. At these times many of the patients showed physiologic alterations simultaneously. This was usually accompanied by an increased frequency of complaints from patients and a worsening of their clinical condition.

Late in the course of this study the nurses were given a questionnaire in which they were asked to state confidentially their preferences among patients and staff. This information was to be used in evaluating interpersonal reactions. Anxiety mounted among the nurses as they discussed this request. Their picture of the ideal nurse was a person who maintained impartiality in dealing with patients, physicians or other nurses. Should they answer the questions? Could they honestly express preferences without opening themselves to censure? What would really be done with their answers? Finally one of the nurses went to the chief nurse to resign. Another asked if she might be permitted to take her vacation early since she was "nervous and distraught." The nursing staff continued to be disturbed until the questionnaire was withdrawn the following day.

The anxiety felt by the nurses seemed to be transmitted to the patients, although they knew nothing of the questionnaire. It was striking that all patients who were on the metabolic study at this time showed consistently negative sodium balance during the two-day period. Other items studied also tended to show a negative balance as indicated in Table IV.

The outward behavior of these patients differed considerably. One male patient reacted outwardly by being much quieter than usual. Another on the contrary spent these two days making unkind comments which was quite unlike his usual manner. He stated frankly, "I feel mean." A third patient was particularly resentful and commented that the nurses seemed more brusque than usual in talking to him. Despite

TABLE IV
BALANCE DATA (S.D.) ASSOCIATED WITH STAFF ANXIETY

Patient	*Na*	*K*	*Cl*	*N*	*P*
Mrs. Dietrick	−8.1	−0.2	−6.0	0.0	−0.5
Mr. Potts	−4.0	+1.3	−6.9	−3.2	−4.3
Mr. Hall	−1.5	−1.7	+0.4	−1.0	−0.1
Mr. Roberts	−8.4	+2.1	−1.0	+0.8	−6.1

individual differences in reaction, the general disturbance of the ward was evident in everyone's behavior. The night nurse complained that she had never had so much trouble getting the ward quiet for the night. Everyone seemed more ill and more demanding than usual. The deviations noted in the patients were those usually associated with feelings of anxiety. Thus, anxiety aroused in the nursing staff seemed to have been transmitted non-verbally to all patients on metabolic balance studies at that time.

In this period of turmoil and disorganization, the person showing the greatest over-all deviations in metabolic balance was Mr. Roberts who was of lowest status among the patients. He was conscious of his position and made frequent references to his physician about it. Mr. Potts was the person of highest status. Mrs. Dietrick had lost position by refusing to participate in Christmas activities and through the behavior of her daughter which had evoked strong disapproval from other patients on the ward. Mr. Hall, who showed the least metabolic deviation during this period, was maintaining a degree of self-isolation, holding himself aloof from the other patients.

It seems evident from data of this sort that social relationships markedly affect renal excretion and metabolic balance. When Marian felt rejected by a colleague, her behavior and renal excretion differed significantly from that observed when she felt rejected by her boss. When reconsidering a temper outburst, the position of the person to whom she was relating herself at the time markedly affected renal excretion rates. These were altered in opposite directions when recounting the episode to her physician or contemplating it while awaiting her landlord. Social relationships are extremely important for psychophysiologic studies. They must be kept in mind just as clearly as the content of what is said when interpreting the results of such studies.

Social setting is also of importance. This was evident in the difference observed in number of stressful situations associated with significant

metabolic deviations during periods of ward tranquility as compared to periods of ward turmoil. Of special interest was the observation that anxiety among the nurses was reflected in significant physiologic and behavioral changes in the patients without their awareness of the situation disturbing the nurses and with only one patient indicating an awareness of a change in emotional tone among the nurses.

The influence of status considerations on behavior and on metabolic balance data have become clearly evident during these studies of a metabolic ward. They affected the reaction to interpersonal stresses, which were the most common stressful situations to arise on this ward. Changes in status seemed to be particularly potent in altering physiologic processes. Disapproval by the group was often associated with striking deviations in metabolic balance data. Competition for status on the ward likewise resulted in marked changes in metabolism. Both situations were, at times, associated with the appearance of incapacitating symptoms requiring confinement to bed. They were quite generally associated with the appearance of new or the increased severity of old symptoms.

These examples, selected from a number of studies, indicate the importance of interpersonal relationships, status considerations, and social setting to an understanding of physiologic processes. All of these must be included in an analysis of results of psychophysiologic studies. It is evident that the individual cannot be considered apart from the group of which he is a member or from his position within that group.

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SILENCE AS COMMUNICATION*

M. MASUD R. KHAN, B.A., M.A.†

> Adolescence is not an affliction but a *normative crisis.*
> —Erik Erikson[7]

Silence in the analytic situation is a recurrent and complex clinical phenomenon. Recently Arlow[1] and Zeligs[24] have discussed exhaustively the patient's silence as serving the functions of discharge, defense and communication in the analytic situation. Balint[2] has related silence in the clinical analytic situation to primary psychic creativity and creation as they emerge in early ego development.

In my clinical report on the first sixteen sessions from the introductory phase of a male adolescent patient's psychoanalytic treatment, I shall try to show the communicative function of his persistent silence in the analytic situation. In my discussion, I shall not enlarge upon the defensive function of silence either as a defiance of the therapeutic process, or as a typical adolescent flight from intrapsychic conflict.[7, 23] I shall only briefly discuss the discharge function of his silence as seeking a magical symbiotic fusion with the analyst.[10] These elements were present and were interpreted. But it is my contention that from the stage reported in the treatment of this one adolescent patient, it was the judicious withholding of therapeutic intervention, either through excessive interpretation or reassurance, that enabled him to communicate his real inner conflicts and predicament.

I shall try to show the primary function of his silence was to communicate through the transference and the analytic process a very disturbed early childhood relationship to his mother which had brought about identity diffusion[6] at adolescence. The regressive and defiant flight into a negative identity[7] was his private and magical attempt to deal with this developmental predicament. My major concern is to detail the reconstruction of the cumulative trauma[16] through the analytic process in the treatment of the patient. The cumulative trauma was the sustained, pathogenic encroachment on his childhood developmental processes by

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† Training Analyst, British Institute of Psychoanalysis, London, England.

the disturbed relationship to his mother. I shall try to show that countertransference was an instrument for perceiving and deciphering the affectivity and archaic object-relationships as they were expressed by the patient through his silent behavior in the analytic situation.[12, 22] The persistent silence was also a mode of acting out and served the functions of recollecting, integrating and working through the pathogenic early relationship to the mother.[5, 11, 13]

Almost all analysts have stressed the technical difficulties involved in treating adolescent patients.[3, 4, 8, 9, 17] In the clinical handling of this case I have been guided and helped by the researches of Erikson[6, 7] and Winnicott.[20, 21, 23] When faced with the young patient's adamant refusal to speak, I was profoundly encouraged by a counsel of Winnicott's:[20] "Many treatments of schizoid types of adolescents fail because they are planned on a basis that ignores the child's ability to think up—in a way, to *create*—an analyst, a role into which the real analyst can try to fit himself." Once I had diagnosed that the negativity and withdrawal into inertia and apathy were both an appeal for help and an expression of an antisocial tendency, I was ready to involve the clinical process in an enactment of these intrapsychic conflicts. The chief idiom the patient used to communicate and express these was silence, and it is the clinical handling of this silence that I shall recount.

Case Report

The patient, whom I shall call Peter, was just over eighteen years of age. He had been referred to me by a psychiatrist because of the parents' acute anxiety and concern about the patient. Peter had been progressively withdrawing from his school activities and social interests over the past five years. The climax had been reached when he willfully refused to finish his last paper in a competitive entrance examination and had sat idly doodling and scribbling instead. He had also isolated himself in his room, spending all his time listening to classical music and reading highbrow novels. He rarely went out or spoke to anyone. At home he was polite, but totally aloof and uncommunicative. The presence of psychiatric illness in the family had made the parents anxious for help. They were afraid Peter might deteriorate into an illness of a schizoid-depressive type, or that he might attempt suicide.

By all accounts, Peter was intelligent, alert and gifted, with leanings towards art and literature. Though he had always been shy and sensitive, his behavior had been normal during latency. Until a few years previ-

ously, he had enjoyed his school and social life. It had been impressed upon me by the referring psychiatrist that Peter was in urgent need of help, but it would be difficult to get him to accept treatment. One further problem needed immediate attention. He was due to take his high school graduation examination in three months and the parents dreaded that if he shirked it, and he was likely to because of his avowed refusal to go to a university, then his whole life would be prejudiced and affected by it. The only other facts I knew about Peter before I saw him in consultation were that he came from a professional upper class and had enjoyed good home life. There was little overt conflict with the parents.

The youth who arrived for consultation was an elegant, fragile, polite and polished person. He talked fitfully but thoughtfully and used language with distinctive clarity and correctness. He was neither secretive nor defensively or anxiously hostile. He made it clear that he had come to discuss matters so as not to cause his parents further distress. He had no intention of undertaking analytic treatment because it would be a stupid waste of time. He had been to a psychotherapist the year before and had not been able to talk, so the treatment had to be given up. He did not feel that he was either ill or needed help. He had simply decided not to go on with education and instead to do some ordinary job which would pay enough for him to live and to go to musical concerts. He then asked what I wanted him to do and I suggested he should give the treatment a try. He protested he could come only once a week as he was still attending school an hour a day. We agreed that he should come every Saturday.

What had impressed me most during the consultations were: (1) His capacity for genial and intelligent conversation alongside his negativity and refusal to seek help. I felt he was not so hostile against me and the treatment as engrossed in a very personal mood. (2) His polite and fragile style and a certain static quality about his way of sitting. He had neither moved nor fidgeted even once during the consultation. (3) I could easily distinguish between his polite, social behavior and his private mood of inertia and self-engrossment. (4) Though he could talk lucidly, he had utterly failed to say anything significant about the private withdrawn world he lived in. (5) He had made light of his refusal to do the examination paper. I regarded this as an isolated and

impulsive antisocial act through which he had been able to signal and appeal to his parents that he needed help.

I am using the concept of antisocial tendency as defined by Winnicott:[21]

> "The antisocial tendency is characterized by *an element in it which compels the environment to be important.* The patient through unconscious drives compels someone to attend to management . . . *The antisocial tendency implies hope* . . . when there is an antisocial tendency *there has been a true deprivation* . . . that is to say, there has been a loss of something good that has been positive in the child's experience up to a certain date, and that has been withdrawn; the withdrawal has extended over a period of time longer than that over which the child can keep the memory of the experience alive." (Cf. Shields.[18])

I decided that since the patient had been able to communicate his predicament only through an antisocial act, it was very important to concentrate on enabling him to express his withdrawn mood in the analytic situation and through the analytic process. I decided to use the classical analytic procedure (recumbent position and verbal free associations) and totally refrain from any guidance of or involvement with his family, his school difficulties and approaching examination. I felt that his withdrawn mood of inertia, his refusal to finish his examination paper, and his belief that he would not be able to speak in the analytic situation, were expressions of some basic need and conflict in him. From the very beginning he found it hard to speak. He was obviously anxious and afraid that I would adopt an incriminating attitude. From what little he said during the first four sessions, I gathered that his personal life had come to a standstill and he lived in a hopeless state of inertia and apathy, consoled by his music and excessive reading of novels.

The experience and observation of this silent state was more arduous than I had anticipated. I persisted, however, in letting the clinical process take its own course and shape and evolve its pattern according to the patient's needs. This entailed literally living through his silences with him and experiencing every nuance of his body-behavior and mood-atmosphere. Even though the completely silent sessions were six in number, it is important to bear in mind that the time involved was six weeks. It was important for him that I could bear the strain and anxiety from it and did not directly contact his parents. After the first four sessions, Peter became utterly mute, silent and frozen. I am distinguishing muteness from silence here. Muteness, I felt, had a destructive, aggressive,

belligerent tone to it, whereas silence was a more benign or neutral state. I shall now discuss some of the salient features of his mute, silent and frozen behavior and its relation to his childhood traumatic experiences.

Soon it became clear that the silent state was a complex one. The great difficulty was about knowing precisely what was happening and when. I could sense and feel in his body-tensions, in his posture, and facial expressions, a continuous flux of feelings and attitudes.

The first inference important for me was that the patient was enacting a state of affectivity, in which two people are involved and yet each was a "creation" of the other. Describing the area of "basic fault" Balint[2] states, "The force originating from the basic fault has *not* the form of a conflict." I felt strongly that the patient was not in conflict with me. It felt more like a state in which two people who could be alive and responsive to each other had become frozen and petrified by each other. The patient expected me to magically free him from his frozen state, just as I expected him to speak so that I could help him. There was an archaic affectivity involved which Peter's adult ego functions could not express or communicate. In the analytic situation silence and nonverbalization were the vehicle of this mood and affectivity. These emotions and affects, though they were loosely enveloped in his mood and attitude of frozen passivity, inertia, and silence, could, however, be registered sentiently by me as varying from pleasant well-being and liveliness to sullen anger, muted rage and helpless despondency.

Gradually I began to realize, through the impact of the silences on me and my inner reactions to them, that Peter was using me as his auxiliary ego. He was making me experience and register what he had lived through passively at some stage of his development. I was the child Peter and he was the other person from the original childhood situation. I could sense in my role as child-Peter that he must have felt reduced to impotence, futility and exhaustion through the mood and behavior of this other person, just as I was experiencing these now through him. I learned that to be seduced into hopeful liveliness and expectancy because he looked alert and perky on arrival was a sure way of experiencing painful rejection during the rest of the session. The more I felt responsive and expected responsiveness from Peter, the more bitterly futile and helpless I felt at the end of the session.

One striking feature of these silences was that they were not directed against me in any hostile and viciously vindictive way. It was essentially

a question of his being engrossed in a deadly depressive inert state and my having to share it. Of course there were oscillations of mood. He only became hostile or bloody-minded when I would verbally intrude on his silence with persistent interpretations.

The next thing I realized was that through these *silences* Peter was presenting me with "another person." This other person he had experienced and registered with singular vividness across a long period of time. I began to infer that this person must have suffered from acute depression and had consequently felt apathetic and inert in relation to the child-Peter.

Watching my personal reaction to his silence, I was impressed by how often I was impelled to *nudge* him physically. Of course I never did. But the wish was there; and the illusion that this would make him come alive and react responsively and feelingly was very strong in me. When trapped in the long, intense and bleak deadness of some of his silences, I always had the wish in me to somehow rattle him into liveliness. The greatest temptation I had to fight against in myself, during these moments, was to *act on him* through verbal interpretations.

I had found out from experience that if I started to give some interpretation, *e.g.* that he was testing me, provoking me or attacking me with his silences, then his mood would change. He would become sullen, his body-tone would flop and all one had was a collapsed heap of a boy on the couch.

This led me to think that the silent mood and state was an articulate and active one. It re-enacted and expressed the mood and manner of a person, a person who was *not* Peter, but on whom the child-Peter had been intensely dependent. Also, the child-Peter could not get out of this relationship, just as during the session I could not get away from him.

Another important element in the relationship that was being re-enacted in the transference was the positive bond with and attachment to the person. I had been impressed with the punctuality and regularity with which Peter attended his sessions. He had to travel a long way and it was a strain on him. This I inferred repeated a positive libidinal bond to the person in the original childhood situation. There was never any doubt about his wish to come to the sessions. This also made me pursue the latent meaning and logic of his silences more seriously rather than interpret them exclusively as resistance only.

There was a distinct affect of pain, loss, and dejection to the silences.

It was difficult to differentiate the phenomenology of his silent moods. Feelings and processes changed so rapidly, invisibly and yet sentiently. At one moment I was child-Peter feeling his reactions; and the next he would be child-Peter in his own right lying helpless and sullen. The most important thing clinically was to distinguish the role of the analytic transference process between Peter and me from the existence and role of Peter and me as persons in the analytic setting. The analytic setting enabled this regressive re-enactment of the childhood experience. This peculiar and specific mode of "remembering" involved child-Peter and me, but was sustained and made possible by the analytic setting. To try and introduce notions of interpersonal conflict between Peter and me was always disruptive at this stage. It was also clear that in this re-enacted affectivity and mood, Peter in the role of this other person imposed a task upon me which I had no option but to bear with. He had no capacity to meet my expectancy, namely to talk and free associate which I inferred must have been true of the original situation. He had put up with the other person's depression while that person had not been able to meet the patient's needs and aliveness.[11, 19, 22]

Observing my reactions to his silent mood, I concluded that Peter's traumata in childhood must have been in terms of his lively expectations and wishes to engage this person in excited, aggressive interchange. The evidence for this was that if I felt tired at some point in the session or disinclined to concentrate on his mood and wandered off in my thinking, I felt no strain. There was only his idle, dull presence on the couch. It was only my alive responsiveness and expectancy that made his silence into a torture of frustration, futility, anger, and despondency for me.

My role and function during his silences was to provide a sentient, concentrated, alert attention. This attention had to be more than merely listening. It is listening with one's mind and body. If my attention sagged, or I got the slightest bit bored and tired, the clinical process immediately lost its vitality. The important element in this body attention was the capacity to utilize neutralized, aggressive cathexes in one's attention on the patient.[14]

It is important to stress here that during the six silent sessions only the patient had been silent. I had sparingly, but regularly, commented on whatever I could put together by way of inference about his shifts of mood and feelings in the sessions, from observing his behavior. I always made some summary, brief comment at the end of each silent

session. To Peter this indicated that I had been watching and participant in the situation. It also established my separateness from him and provided a verbal link with the next session. The linking function of these interpretations was important, as we were to discover fully in retrospect later in his treatment. To Peter it had meant that another person, who was not he, could empathize with his state of mind and feelings, without his either being overwhelmed by them or subsumed by them. My behavior provided a model for reality testing in the analytic situation, both in establishing separateness between him and me as two persons in the situation and in discriminating between fantasy (inner reality) and external reality.

Through these brief statements about his feelings, it became possible for Peter to learn that what another person says and does can change one's mood, that people can help and communicate with each other, and magical incorporations or archaic fusions with objects are not the only way of dealing with emotional relationships. I was, of course, only relatively correct and accurate in my statements about his moods and feelings. It was important to indicate that feelings can be perceived and talked about instead of being *lived* and acted out. Another aspect of my providing Peter with verbalization was that it proved that I was not retaliating against his silence with silence, that I could tolerate the hostile and rejective elements in his silence without being threatened by them. Through my verbalization (interpretation) of his feelings, I lent him my ego-function to test his inner reality. Thus, he could gradually relax his magical and archaic defenses.

One of the easiest errors to make when either irritated or exhausted by the strain and stress of Peter's silence was to give interpretations that would provoke guilt or sound reproachful. It was, however, important to keep myself aware of the reproachfulness that his behavior provoked in me. It is my contention that every nuance of feeling that I experienced in relation to his silences was in some form or another his own experience in the original traumatic relationship.

Present in Peter's persistent attitude of silence and withdrawal was also a diffuse state of excitement in him. I could sense it in his body-tone and posture on the couch. I felt that he had invented a new idiom of being where he had projected all his own excitement to "external" things, like music and fictional characters. He lived passively surrounded by these. Even intrapsychically he lived at a distance from his thoughts

and preoccupations. This recreation of a pure pleasure-self fed by music and literature had a protective function as well as a discharge function. It protected him and the other person (in analysis, me) from his reactive sadism and aggression. How his mother's depression must have exaggerated the sadistic rage reactions in the frustrated child I could infer from the amount of aggressive feelings his silence and inertia roused in me. It was also clear that the withdrawn state defended the self and the object against aggression. One consequence of this was that of paralyzing the ego-functions and a reactive idealization of primitive pleasure.

From these, and myriad other fleeting impressions, observations and inferences, I decided to interpret to Peter what I thought were the content and meaning of his withdrawal state and silence in analysis. This I did in the 11th session (roughly three months after the start of the treatment and after the sixth silent session). I interpreted to him that observing his behavior, and the mood-relationship he had involved me in through his silences, I was left in little doubt that he had experienced in his childhood relation to his mother over a considerable length of time, what he was repeating in the analytic situation; that his mother had suffered from a severe depression in which he had been helplessly involved. This had imposed a strain on him, especially in relation to his lively, aggressive, contact-seeking impulses. He had reacted by becoming passive, despondent and depressed. In time it had all changed and he had been absorbed in the routine processes of growth, development and socialization.

At puberty and adolescence when he had to define his own aims and ideals and find his new role as a sexual adult male, the whole conflict had re-emerged and he had to get back to the original relationship to sort it out. He had tried to invent a totally new identity for himself through absorption with music and identification with various fictional characters. In fact he had tried to discover a new milieu where he *became* what he read. This was an as-if identity, which aimed at recreating an idealized pleasure-ego, unrelated to reality and free of all conflict. He denuded himself of all emotions and contacts and lived surrounded by music. This enabled him to deny, both his *actual* need to be dependent on his parents, and the need to be nursed through the original trauma and its sequelae. The addiction to music served as a denial of his despair, dependency-needs and wish to cry and scream. He had been

also scared that his magical attempt at a new concocted identity might succeed all too well.

His parents, because of their knowledge of the mother's depression in his childhood, had felt guilty and responsible and, therefore, had been all too permissive and accommodating toward his withdrawal techniques. Hence he had to act out through refusing to finish his entrance examination paper to compel them to seek therapeutic intervention on his behalf. What he was seeking was a setting and relationship in which both dependency-needs and aggression could be integrated. The refusal was both an appeal and an act directed against the destructive regressive strength of his withdrawal techniques. This act had exposed him to full view and his family could see he was ill. Similarly, silence in the sessions was a way of *showing*. In regressive mood, magical gestures were his only idiom of communication.

I was rather surprised when Peter reacted to this long construction with the remarks that he remembered his mother's depression all too well. He was then about three years of age. He could time and place it, because Jenny, the young girl who had been looking after him and the other children, had begun to play a progressively more important role in his life and that of the family. She had, more or less, taken over the management of the household. She was still with them and she was the only person he had been able to talk to with any spontaneity for the past five years. He had a notion that his mother had gone in for a lengthy analytic treatment.

Then he was silent for a long while. He broke his silence by volunteering to tell me a dream. It was not a new dream. He had dreamt it first when he was six years old and it has recurred in different variations since, though not during the past five years. The dream was: "I am in my grandmother's house by the seaside. A crab is trying to come through the glass window. I feel very threatened and frightened and wake up screaming." I interpreted that the crab signified his own aggressive aliveness and excitement which he had repressed and could experience only as a threat. In association to the dream he added that his mother had the next child after him around that time. He thought perhaps he had been sent away when she was due to have the baby.

It was clear from this that when the mother had recovered from her depression, she had another child and gradually family life had returned to normal. But in between, Peter had dissociated his aliveness and

aggressive vitality. This had enabled him to be a delicate, sensitive and compliant boy during latency. It was only with the resurgence of instinctuality at puberty and the need to integrate his inner resources, that he had found himself facing the original traumata. Then he had tried the solution by withdrawal and the invention of a private, regressive pleasure-self screened by his negative social identity. I communicated most of this to Peter. When Peter came for the next session he looked more lively and eager to talk. He asked me whether his father had been in touch with me. He told me that he had let them know he was going in for the examination in two week's time. I was deeply relieved to hear this. He must have sensed this because he remarked: "Don't get too hopeful. I have not promised to go to the university."

Peter wanted to take the next week off for the preparation for the examination and I let him. He took the examination. I saw him once again before the summer break. He wanted to think over the whole question of the treatment and decide for himself about it. I agreed to this too.

I saw Peter after six weeks. He had been miserable and unhappy. This he said was a change from being dead and inert. He had passed the examination all right. He told me that his father had asked him to discuss what he was going to do about going to the university. He asked me what was he to do? I replied it all depended on how he felt. He said he could now see that the idea of refusing education was merely a way of getting back at the parents and, therefore, he was no longer against going to the university on principle. He could not, however, face going there and doing all the work and being caught up in all the activities. He had felt depressed during the holidays and "damned near to a breakdown." He also said: "My parents' fear that I might commit suicide is not that much of a myth. Only I do not even know what I will be killing myself for." He also said he was willing to go in for full treatment.

I told Peter that I agreed with him that going to the university would be a useless and disruptive strain on him. What he needed was a setting to be ill in. I said I would talk to his father and see whether the issue of the university could be postponed for a year. Then he would be in a better position to decide. Meantime he could live at home if he wished. He agreed to all this.

Peter's father, when I saw him, was quite cooperative about all my

suggestions. He said he had known all along Peter would have a breakdown since he had been all too compliant and goody-goody throughout childhood, while the elder brother had shown severe symptoms. The father was also instinctively aware of the effect of the mother's depression on Peter. He added one significant fact, however. Five years previously the father had been taken seriously ill with a heart complaint. We agreed that Peter should stay at home. I warned the father that Peter could become seriously depressed and ill in which case he would have to be hospitalized. The father understood this also and was willing to cooperate.

I shall only briefly recount that Peter sank into a deep regressive state for some five months. During this period he stayed either in bed most of the day listening to music and reading, or just sitting idle and staring. He came five times a week regularly for treatment. During the regressive period he could not bear any relation with his mother and everything was done for him by Jenny, his childhood nurse. The parents were most patient and understanding and neither intruded upon him nor spoiled him.

In analysis we were now able to work verbally through reactions of loss, grief and rage in reaction to the mother's depression. Gradually he started to re-emerge and wish to do things. He tried a few things, but could not sustain his interest or effort. He tried skating and kept at it. I have not the space available to discuss the strange way this youth found his way back to mobility and aliveness through skating. In another four months he felt inclined to study again and went to the university after the summer, where he did well the first year he was there. A recent dream of his showed clearly how much his internal emotional situation has changed. He dreamed about a pretty classmate of his: "We are sitting in the canteen. She comes over, leans her head against my shoulder and starts to cry. I was able to comfort her and she began to smile."

Peter had felt very pleased he had been able to dream this dream.[15] To him it meant that he had begun to believe that he could change another person's mood and feelings. In the dream it was the girl's feelings, intrapsychically it meant the mother's as well. He now felt that there could be mutual responsiveness and communication with another person, and he did not have to magically internalize all emotional states in order to deal with them. He stressed his relief that he could recognize depression outside himself in another person. He felt this gave him freedom

and the ability to do something about it. From here the theme of the value of mourning and sharing sadness emerged. He felt related to others.

The dream was also an attempt to replace the incestuous object (mother) by a new, contemporary one. This he felt freed him to be friends with his mother once again. He had always admired his mother and now would not have to persist with negating her presence at home and denying his genuinely affectionate feelings for her. Altogether Peter had felt very positive on waking up. The dream, he said, had given him a new freedom and a new start.

Conclusion

Erikson[7] in discussing the therapeutic problems encountered in the clinical handling of identity-diffusion in adolescents, details "a phase of particular malignancy" and "the rock-bottom attitude" which accompanies the search for "the ultimate limit of regression and the only firm foundation for a renewed progression." He relates these to Kris's concept of "regression in the service of the ego." Winnicott[23] discusses pertinently "the close relationship that exists between the normal difficulties of adolescence and the abnormality that may be called the antisocial tendency." In my clinical report I have discussed:

1. An adolescent's retreat into negative identity and identity diffusion.[7]
2. In this context, the function of antisocial tendency[21] as an appeal for help as well as an expression of the early failure of the mother in relation to the child's ego-needs.
3. The acting out of the antisocial tendency in transference and analytic setting through persistent silence.
4. The function of this silence to communicate the patient's disturbed relation to the mother in childhood.
5. The use of countertransference perceptions of the analytic process and the patient's transference to decipher the nature, and meaning of this disturbed mother-child relationship in the patient.
6. The reconstruction of the cumulative trauma in this patient's childhood as it was repeated in his silence through the transference and analytic process and its interpretations to the patient.
7. By allowing the patient's silence full expressive scope in the analytic situation, I enabled him to "create" out of me and the analytic process a clinical idiom through which he could re-enact and communicate the affectivity and unconscious conflicts relating to his mother's depression in his childhood and his involvement with these.
8. The reconstruction of the cumulative trauma in relation to the mother's depression in childhood and its working through led to the gradual release of his capacities to use positively regression to dependence in the service of the ego, and enabled him to re-discover his spontaneity, initiative and the capacity to live and work in his contemporary milieu creatively.

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DISCUSSION

J. COTTER HIRSCHBERG, M.D.

As Khan points out, Erikson's concept of identity diffusion is an important basis for our understanding of what is specific for the period of adolescence. In "Ego Identity and the Psychosocial Moratorium," Erikson offers useful concepts about the psychosocial dynamics of "becoming somebody." Khan's clinical material illustrates to what extent the analyst can help a young individual come to a healthy choice of identity formation.

Perhaps the analysis itself can also be considered as an example of Erikson's "psychosocial moratorium" in that it gave the 18-year-old boy a period of delay for adult commitment. He "took time out" to use the special resources provided by analysis for the process of identity formation. Erikson remarks that each component of identity diffusion in late adolescence can be discussed: first, as a normative life crisis; second, in connection with individual psychopathology; and third, in connection with social pathology. Khan discusses the normative life crisis of his patient and the individual psychopathology. The social and cultural component one senses from the preoccupation of the patient with the discrepancies between his self-image and how he wished to appear in the eyes of others. Khan shows his patient struggling with what Erikson calls "bisexual diffusion" (preoccupation with the question of what kind of a man he might become), with "authority diffusion" (the question of who can tell what to whom), and with "ideological diffusion" (receiving meaningful ideological opposites from the parents from which the adolescent tries to choose a clear identity). Erikson feels, and Khan's clinical material illustrates, that unless these diffusions can be resolved, well-sustained identity formation becomes impossible.

However, it seems likely that this patient avoided the anxious state of excessive identity diffusion not only by his regression in the analysis, but also by his identification with the analyst, and uses both to come to a better appraisal of his contradictory identity fragments. The excerpt from the analytic work with this patient makes particularly vivid his two problems: that of personal intimacy versus personal isolation, and that of solidarity versus social isolation.

In presenting the problems of analytic technique with this adolescent, Khan enables us to extrapolate for our *work with adolescents* three ways

to consider the problems of such therapeutic work.* (1) The problems in therapy *from the standpoint of the adolescent* himself. Khan conveys the fragile equilibrium which puberty disturbs between the primitive impulses and the strength of the ego. Khan comments how this fragile balance and the necessity of maintaining it created anxiousness for him in the analytic process. It is to his credit that such anxiousness aroused in him only further desires to help and did not bring about a hostile response. Khan comments how he always remained aware that he must "not act on the patient through interpretation." (2) The therapeutic problems brought from the adolescent himself: namely, that the defenses of the adolescent are of a primitive kind, repeating those of early childhood. Khan speaks specifically of the defense of "magical expectancy"; he emphasizes also the defense of the magic of identification, when he remarks about the "as if" identity of this patient. Another primitive defense is seen in the "all or none" responses of this patient in which he is inclined either to a violent attack on his problem, or a violent destructive attack on himself, or a complete retreat to isolation. (3) The therapeutic problems brought by the adolescent: that is, the way the analyst represented the very adult to whom the adolescent was reacting. The empathy with which the analyst felt this re-presentation of this adolescent's struggle with the early mother was intense.

The second group of problems in therapeutic technique relate to the standpoint of the therapist himself. The clinical presentation shows four of these: (1) The difficulty which the analyst experiences in empathy with the adolescent, a difficulty which comes not only because of the emotional distance which the adolescent attempted to impose by his silence, but a difficulty in empathy which came because of the closeness and nearness which the adolescent wished to achieve through his silence. (2) The problem of the threat posed by the adolescent to the therapist's own internal economy. The analyst needed to give more to the adolescent patient, needed to reveal and share more of himself than is ordinarily a part of analytic work with adult patients. (3) We experience with the author the fact that the emotions of this adolescent are in the here and

* In the following remarks I have drawn upon these sources: GITELSON, MAXWELL: Character Synthesis: The Psychotherapeutic Problem of Adolescence. *Amer. J. Orthopsychiat.* 18:422–431, 1948; HAMILTON, GORDON: *Psychotherapy in Child Guidance.* New York, Columbia University, 1947; FREUD, ANNA: Adolescence. *Psa. Study of the Child* 13:255–278, 1958.

now and not merely to be responded to as if they were from the past. (4) The primitive nature of the anxiety itself leads many an analyst to be less courageous than Khan was with his patient, and not to feel comfortable, as Khan felt comfortable, to involve the adolescent in expressive, intensive, analytic work, using a free associative technique.

The third group of problems arise within the *therapeutic situation* itself. (1) Khan mentioned his willingness and his freedom to serve as an "auxiliary ego" for his adolescent patient. Unfortunately Khan presents none of the difficult detail which is involved in serving in this function for the adolescent patient. It requires an analyst who can offer a dependable relationship, one which provides direct and practical help without creating dependency; it requires an analyst who can offer protective control without sacrificing stimulus to growth; it requires an analyst who provides security while he concomitantly offers freedom. (2) The second of the problems within the therapeutic situation is apparent in the adolescent's distrust of the analyst, not out of any personal struggle with the analyst himself, but because the patient was in a state of alienation from his parents and arrived with and used the same defenses toward the analyst as he had needed and used with his parents. Khan's task was to tolerate this distrust without seductiveness, without aggressiveness, and without over-identifying with the patient or being against the parents. (3) The third problem is inherent in the therapeutic situation which requires that the analyst make a narcissistic contact. The patient began from his self-centered view; he gave little in the relationship; he first related within the relationship on the basis of liking to be liked. (4) One thus sees a fourth problem coming into being: namely that the treatment process must give for the adolescent an emotional experience so that dynamically accurate treatment does not fail because it is emotionally inadequate. (5) Khan constantly was aware that his interpretations could be dynamically correct, but that depth of the therapeutic process and the depth of the interpretation had to be continually evaluated not solely in terms of the analytic transference, but from the standpoint of the adolescent's reality situation in life itself. Khan speaks of therapy with an adolescent as being "two people creating a situation" in which the adolescent patient is so frequently "engrossed in a personal mood." Khan further makes us aware that the hopeful aspect of the adolescent's attempt to create action from the environment is, as Winnicott states, that it means that early actual deprivation has

occurred in this adolescent's life only after a good experience has first occurred.

In addition to all that this clinical presentation allows us to learn about adolescence, Khan also teaches us something about silence. He makes his inferences through the *impact* of silence, not only on the free floating attention of the analyst, but on the way in which silence requires in this work with an adolescent, invested, active, intuitive participation from the analyst with the patient's struggle. Khan remarks, "It was only my alive responsiveness and expectancy that made his silence into a torture of frustration, futility, anger and despondency." But it was also only Khan's alive responsiveness and expectancy that made the process a therapeutic one. As Khan says, it depends on the analyst's "capacity to utilize neutralized aggressive cathexes in his attention on the patient."

The silent state is an *active* state in which the silence becomes a peculiar and specific mode of remembering. Khan put it, "Every nuance of feeling that I experienced in relation to his silences was in some form or another the patient's own experience in the original traumatic relationship."

The analysis of this one patient's silences provides us with a generic meaning of silence.

In Memoriam

NELSON ANTRIM CRAWFORD, M.A. (1888–1963)

Nelson Antrim Crawford, Book Editor of the *Bulletin* and Professor of Scientific Writing in the Menninger School of Psychiatry, died June 30 in Topeka. He was 75 years old.

Mr. Crawford was nationally known as an author, editor and teacher. He headed the department of industrial journalism at Kansas State University from 1914 to 1925, when he became director of information for the Department of Agriculture in Washington, D.C. Later he became editor of the *Household Magazine* which under his direction printed the works of such authors as Theodore Dreiser, Carl Sandburg, Sherwood Anderson, Jesse Stuart and William Gibson. In several such instances, he was the first to recognize and print their work. His own works included several books and many articles and poems. For several years he published *Author and Journalist*, a magazine for writers.

His interest in psychiatry began many years ago as a young man. He and Doctor Karl began their respective careers about the same time and were good friends from their first meeting in the early 1920's. He counseled Doctor Karl in the preparation of *The Human Mind* and introduced a department in the *Household Magazine* dealing with the mental health of children for which he and Doctor Karl selected a panel of national authorities. Jean Menninger collaborated with Doctor Karl in the preparation of the material.

Mr. Crawford's last years were spent in sharing his erudition and experience with the Fellows in the School of Psychiatry, a task which he enjoyed greatly. His distinguished presence brought enthusiasm and luster to the Foundation and to the office of the *Bulletin*. He was perhaps the most widely educated man in our entire community, with a versatility extending from poetry and art to literary criticism and magazine publishing. He will be missed by many friends and most of all by the editors of the *Bulletin*.

In Memoriam

MARIETTA HOUSTON, M.D. (1909–1963)

Dr. Marietta Houston who was a member of the staff of The Menninger Foundation from 1959 to 1961, died July 9 in San Francisco. She leaves many friends in Topeka, where she was Coordinator of Residency Training. Her dedication as a teacher and a physician, and the warmth and graciousness of her personality are remembered by all who were associated with her.

The following biography was prepared by one of her California colleagues, Dr. David W. Allen:

"A distinguished psychiatrist, Marietta Houston, was driving across the Golden Gate Bridge into San Francisco on the morning of July 1, 1963, when she was stricken with a ruptured cerebral aneurysm. Fatally ill, she nevertheless conducted herself with characteristic dignity and calm, and drove her car into the parking area at the toll plaza before collapsing. Later in the hospital she regained consciousness for a time and talked briefly and amiably with several friends and with her sister. She died in the afternoon on July 9th in the University of California Hospital in San Francisco.

"In Doctor Houston's death, psychiatrists of the Bay Area lost a valued colleague, and the people of California lost one of the most capable administrators of their advancing mental health program.

"Doctor Houston was born in Salem, Indiana, October 11, 1909. Educated in the public schools of Salem, Doctor Houston was graduated in 1931 from the Methodist Hospital Training School for Nurses in Indianapolis. Subsequently she attended the University of Indiana, taking there both a BS degree and in 1939 her MD degree. She interned at the Indiana University Hospitals, Indianapolis, and took a year of residency there in pathology."

After more study and medical practice, she took a three year residency in psychiatry at the Langley Porter Clinic where she later became Director of the Outpatient Department (1952–1958). She also became an Assistant Clinical Professor of Psychiatry at the University of California. From there she went to The Menninger Foundation. In 1961 she returned to her beloved Bay Area to become Regional Chief, Mental Health Services, California Department of Mental Hygiene, the position she held at the time of her death.

BRIEF BOOK REVIEWS

Hypnosis and the Body Image. By FREDERICKA F. FREYTAG. $6.50. Pp. 271. New York, Julian Press, 1961.

The diagnostic and therapeutic value of the hallucinated unconscious body image is presented with a wealth of descriptive illustrative material. For the most part the book is clearly written, although some of the case study material is unduly lengthy and in some instances the author has not attempted to integrate this material, thus leaving this task to the reader. At other places there seems to be a short circuiting and the reader is hard put to see how a particular "dynamic interpretation" was formulated from the material presented. The author in general presents the technique in a tentative, cautious manner, and seems aware of the validity and research questions which it explicitly and implicitly raises. From the clinical and intuitive point of view, both the technique and the book merit consideration. (R. E. Schulman, Ph.D.)

Der Wahnsinn: Geschichte der Abendlandischen Psychopathologie. By WERNER LEIBBRAND and ANNEMARIE WETTLEY. Pp. 698. Munich, Karl Albert Freiburg, 1961.

A unique and rich source book, with excerpts from many original documents interwoven with the text, and full of hard-to-obtain historical facts. The authors have tried to present their thoughts as a chapter in the history of ideas rather than as a concise, fact-minded handbook. They make much use of the philosophical and prescientific ideas organizing their material in the following divisions: Graeco-Roman Antiquity, the Middle Ages, Renaissance, Baroque, Enlightenment and Modern Era. Unfortunately, there is a typically German neglect of British and American ideas and practices; the section on psychoanalysis is inadequate to its complex topic, and there seems too much determination to prove that the history of psychopathology, which started from Greek mythology, ends up in the "mythology" of depth psychology. (Paul W. Pruyser, Ph.D.)

Social Psychiatry in the Community, Hospitals, and in Prisons. By MAXWELL JONES. $5.75. Pp. 129. Springfield, Ill., Charles C Thomas, 1962.

From his rich experience, Doctor Jones describes freshly and warmly the application of the principles of individual treatment focused on the internal world of patients to the interaction between people in a variety of troubles and their environments—community, hospital or prison. This book will be useful to either board or team member who wants to find out what social psychiatry is descriptively and what its practitioners do day by day. Teachers will be especially interested in the last and best chapter, "Training in Social Psychiatry." (Richard Benson, M.S.W.)

Mosaic Patterns of American Children. By LOUISE BATES AMES and FRANCES L. ILG. $9.50. Pp. 297. New York, Harper, 1962.

This book presents a developmental approach to the interpretation of the Lowenfield Mosaic Test, believed by the authors to give clues to "how the

individual functions," whereas the Rorschach Test gives clues to "how the individual experiences." The findings are based on the test productions of nearly 1500 children, predominantly of superior intelligence, ranging in age from 2 to 16 years. At each age level the test productions have been analyzed as to type of structure, form, color, symmetry, compactness, naming, content, number of pieces used and time spent. Although the treatment of the data is cross sectional at each age level, 123 children contributed test productions over periods of four or more years. The book suggests gross trends rather than establishing definite norms. Enhancing the usefulness of this book are the 191 full-color illustrations. (Dorothy S. Fuller, Ph.D.)

The Mental Ward: A Personnel Guidebook. By MORGAN MARTIN. $4.50. Pp. 84. Springfield, Ill., Charles C Thomas, 1962.

This little book is based on a Master of Science thesis the author wrote after training in Administrative Medicine at Columbia University. It testifies to industrious and conscientious reading of many authors who wrote about problems of the mental ward. The book is far too condensed to convey much understanding itself, but can be useful as a guide to the literature on the subject. (H. G. van der Waals, M.D.)

Working with Children in Hospitals. By EMMA N. PLANK. $3. Pp. 86. Cleveland, Ohio, Western Reserve University, 1962.

Mrs. Plank is the director of a program at Cleveland Metropolitan General Hospital in which specially trained persons work as "child care workers" under the nursing staff, helping children better tolerate and integrate separation from the family, the strangeness and fearsomeness of the hospital, and the impact of illness and procedures of medical care. The book is of special interest to those responsible for the care of children in general hospitals. It does not deal specifically with the problems of psychiatric child care work. The book is apparently designed to fit into a program for training of child care workers in general hospitals. While it is a charming and pleasantly written book, stressing the importance of proper and loving care, kindness, and companionship, it does not stand by itself as a text or a manual. (Edwin Levy, M.D.)

Body, Mind and Sensory Gateways. By FELIX DEUTSCH. $4. Pp. 106. New York, Basic Books, 1962.

The author combines the interviewing technique of associative anamnesis with that of a sensory stimulus. The sensory stimulus acts as a key signal for further associations. Dr. Deutsch uses the term "synesthesiology" to convey the supposition that all object relationships originate from sensory perceptions of one's own body, and that these sensory impressions belong to the first objectless sources of psychic developments before the superego forces are developed. Deutsch presents three patient interviews, extending over a period of several months, in which different sensory stimuli, *i.e.* sound, smell, and light are used. He points out how the sensory stimulus cuts through to the core of the patient's conflict more rapidly than do the standard interview techniques. (V. G. Henry, Jr., M.D.)

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