
PATHOLOGY

To understand and measure emotional qualities is very difficult. Psychologists and educators have been struggling with that problem for years but we are still unable to measure emotional and personality traits with the exactness with which we can measure intelligence.

—ROSE ZELIGS in *Glimpses into Child Life**

AUTISTIC DISTURBANCES OF AFFECTIVE CONTACT

By LEO KANNER

SINCE 1938, there have come to our attention a number of children whose condition differs so markedly and uniquely from anything reported so far, that each case merits—and, I hope, will eventually receive—a detailed consideration of its fascinating peculiarities. In this place, the limitations necessarily imposed by space call for a condensed presentation of the case material. For the same reason, photographs have also been omitted. Since none of the children of this group has as yet attained an age beyond 11 years, this must be considered a preliminary report, to be enlarged upon as the patients grow older and further observation of their development is made.

Case 1. Donald T. was first seen in October, 1938, at the age of 5 years, 1 month. Before the family's arrival from their home town, the father sent a thirty-three-page typewritten history that, though filled with much obsessive detail, gave an excellent account of Donald's background. Donald was born at full term on September 8, 1933. He weighed nearly 7 pounds at birth. He was breast fed, with supplementary feeding, until the end of the eighth month; there were frequent changes of formulas. "Eating," the report said, "has always been a problem with him. He has never shown a normal appetite. Seeing children eating candy and ice cream has never been a temptation to him." Dentition proceeded satisfactorily. He walked at 13 months.

At the age of 1 year "he could hum and sing many tunes accurately." Before he was 2 years old, he had "an unusual memory for faces and names, knew the names of a great number of houses" in his home town. "He was encouraged by the family in learning and reciting short poems, and even learned the Twenty-third Psalm and twenty-five questions and answers of the Presbyterian Catechism." The parents observed that "he was not learning to ask questions or to answer questions unless they pertained to rhymes or things of this nature, and often then he would ask no question except in single words." His enunciation was clear. He became interested in pictures and very soon knew an inordinate

From the Henry Phipps Psychiatric Clinic and the Harriet Lane Home for Invalid Children, the Johns Hopkins Hospital, and (cases 1 and 11) the Child Study Center of Maryland.

* See THE RECENT BOOKS.

number of the pictures in a set of *Compton's Encyclopedia*." He knew the pictures of the presidents "and knew most of the pictures of his ancestors and kinfolks on both sides of the house." He quickly learned the whole alphabet "backward as well as forward" and to count to 100.

It was observed at an early time that he was happiest when left alone, almost never cried to go with his mother, did not seem to notice his father's homecomings, and was indifferent to visiting relatives. The father made a special point of mentioning that Donald even failed to pay the slightest attention to Santa Claus in full regalia.

He seems to be self-satisfied. He has no apparent affection when petted. He does not observe the fact that anyone comes or goes, and never seems glad to see father or mother or any playmate. He seems almost to draw into his shell and live within himself. We once secured a most attractive little boy of the same age from an orphanage and brought him home to spend the summer with Donald, but Donald has never asked him a question nor answered a question and has never romped with him in play. He seldom comes to anyone when called but has to be picked up and carried or led wherever he ought to go.

In his second year, he "developed a mania for spinning blocks and pans and other round objects." At the same time, he had

A dislike for self-propelling vehicles, such as Taylor-tots, tricycles, and swings. He is still fearful of tricycles and seems to have almost a horror of them when he is forced to ride, at which time he will try to hold onto the person assisting him. This summer [1937] we bought him a playground slide and on the first afternoon when other children were sliding on it he would not get about it, and when we put him up to slide down it he seemed horror-struck. The next morning when nobody was present, however, he walked out, climbed the ladder, and slid down, and he has slid on it frequently since, but slides only when no other child is present to join him in sliding. . . . He was always constantly happy and busy entertaining himself, but resented being urged to play with certain things.

When interfered with, he had temper tantrums, during which he was destructive. He was "dreadfully fearful of being spanked or switched" but "could not associate his misconduct with his punishment."

In August, 1937, Donald was placed in a tuberculosis preventorium in order to provide for him "a change of environment." While there, he had a "disinclination to play with children and do things children his age usually take an interest in." He gained weight but developed the habit of shaking his head from side to side. He continued spinning objects and jumped up and down in ecstasy as he watched them spin. He displayed

An abstraction of mind which made him perfectly oblivious to everything about him. He appears to be always thinking and thinking, and to get his attention almost requires one to break down a mental barrier between his inner consciousness and the outside world.

The father, whom Donald resembles physically, is a successful, meticulous, hard-working lawyer who has had two "breakdowns" under strain of work. He always took every ailment seriously, taking to his bed and following doctors' orders punctiliously even for the slightest cold. "When he walks down the street, he is so absorbed in thinking that he sees nothing and nobody and cannot re-

member anything about the walk." The mother, a college graduate, is a calm, capable woman, to whom her husband feels vastly superior. A second child, a boy, was born to them on May 22, 1938.

Donald, when examined at the Harriet Lane Home in October, 1938, was found to be in good physical condition. During the initial observation and in a two-week study by Drs. Eugenia S. Cameron and George Frankl at the Child Study Home of Maryland, the following picture was obtained:

There was a marked limitation of spontaneous activity. He wandered about smiling, making stereotyped movements with his fingers, crossing them about in the air. He shook his head from side to side, whispering or humming the same three-note tune. He spun with great pleasure anything he could seize upon to spin. He kept throwing things on the floor, seeming to delight in the sounds they made. He arranged beads, sticks, or blocks in groups of different series of colors. Whenever he finished one of these performances, he squealed and jumped up and down. Beyond this he showed no initiative, requiring constant instruction (from his mother) in any form of activity other than the limited ones in which he was absorbed.

Most of his actions were repetitions carried out in exactly the same way in which they had been performed originally. If he spun a block, he must always start with the same face uppermost. When he threaded buttons, he arranged them in a certain sequence that had no pattern to it but happened to be the order used by the father when he first had shown them to Donald.

There were also innumerable verbal rituals recurring all day long. When he desired to get down after his nap, he said, "Boo [his word for his mother], say 'Don, do you want to get down?'"

His mother would comply, and Don would say: "Now say 'All right.'"

The mother did, and Don got down. At mealtime, repeating something that had obviously been said to him often, he said to his mother, "Say 'Eat it or I won't give you tomatoes, but if you don't eat it I will give you tomatoes,' " or "Say 'If you drink to there, I'll laugh and I'll smile.'"

And his mother had to conform or else he squealed, cried, and strained every muscle in his neck in tension. This happened all day long about one thing or another. He seemed to have much pleasure in ejaculating words or phrases, such as "Chrysanthemum"; "Dahlia, dahlia, dahlia"; "Business"; "Trumpet vine"; "The right one is on, the left one is off"; "Through the dark clouds shining." Irrelevant utterances such as these were his ordinary mode of speech. He always seemed to be parroting what he had heard said to him at one time or another. He used the personal pronouns for the persons he was quoting, even imitating the intonation. When he wanted his mother to pull his shoe off, he said: "Pull off your shoe." When he wanted a bath, he said: "Do you want a bath?"

Words to him had a specifically literal, inflexible meaning. He seemed unable to generalize, to transfer an expression to another similar object or situation. If he did so occasionally, it was a substitution, which then "stood" definitely for the original meaning. Thus he christened each of his water color bottles by the name of one of the Dionne quintuplets—Annette for blue, Cécile for red, etc.

Then, going through a series of color mixtures, he proceeded in this manner: "Annette and Cécile make purple."

The colloquial request to "put that *down*" meant to him that he was to put the thing on the floor. He had a "milk glass" and a "water glass." When he spit some milk into the "water glass," the milk thereby became "white water."

The word "yes" for a long time meant that he wanted his father to put him up on his shoulder. This had a definite origin. His father, trying to teach him to say "yes" and "no," once asked him, "Do you want me to put you on my shoulder?"

Don expressed his agreement by repeating the question literally, echolalia-like. His father said, "If you want me to, say 'Yes'; if you don't want me to, say 'No.'"

Don said "yes" when asked. But thereafter "yes" came to mean that he desired to be put up on his father's shoulder.

He paid no attention to persons around him. When taken into a room, he completely disregarded the people and instantly went for objects, preferably those that could be spun. Commands or actions that could not possibly be disregarded were resented as unwelcome intrusions. But he was never angry at the interfering *person*. He angrily shoved away the *hand* that was in his way or the *foot* that stepped on one of his blocks, at one time referring to the foot on the block as "umbrella." Once the obstacle was removed, he forgot the whole affair. He gave no heed to the presence of other children but went about his favorite pastimes, walking off from the children if they were so bold as to join him. If a child took a toy from him, he passively permitted it. He scrawled lines on the picture books the other children were coloring, retreating or putting his hands over his ears if they threatened him in anger. His mother was the only person with whom he had any contact at all, and even she spent all of her time developing ways of keeping him at play with her.

After his return home, the mother sent periodic reports about his development. He quickly learned to read fluently and to play simple tunes on the piano. He began, whenever his attention could be obtained, to respond to questions "which require yes or no for an answer." Though he occasionally began to speak of himself as "I" and of the person addressed as "you," he continued for quite some time the pattern of pronominal reversals. When, for instance, in February, 1939, he stumbled and nearly fell, he said of himself, "*You* did not fall down."

He expressed puzzlement about the inconsistencies of spelling: "bite" should be spelled "bight" to correspond to the spelling of "light." He could spend hours writing on the blackboard. His play became more imaginative and varied, though still quite ritualistic.

He was brought back for a check-up in May, 1939. His attention and concentration were improved. He was in better contact with his environment, and there were some direct reactions to people and situations. He showed disappointment when thwarted, demanded bribes promised him, gave evidence of pleasure when praised. It was possible, at the Child Study Home, to obtain with constant insistence some conformity to daily routine and some degree of proper handling

of objects. But he still went on writing letters with his fingers in the air, ejaculating words—"Semicolon"; "Capital"; "Twelve, twelve"; "Slain, slain"; "I could put a little comma or semicolon"—chewing on paper, putting food on his hair, throwing books into the toilet, putting a key down the water drain, climbing onto the table and bureau, having temper tantrums, giggling and whispering autistically. He got hold of an encyclopedia and learned about fifteen words in the index and kept repeating them over and over again. His mother was helped in trying to develop his interest and participation in ordinary life situations.

The following are abstracts from letters sent subsequently by Donald's mother:

September, 1939. He continues to eat and to wash and dress himself only at my insistence and with my help. He is becoming resourceful, builds things with his blocks, dramatizes stories, attempts to wash the car, waters the flowers with the hose, plays store with the grocery supply, tries to cut out pictures with the scissors. Numbers still have a great attraction for him. While his play is definitely improving, he has never asked questions about people and shows no interest in our conversation. . . .

October, 1939 [a school principal friend of the mother's had agreed to try Donald in the first grade of her school]. The first day was very trying for them but each succeeding day he has improved very much. Don is much more independent, wants to do many things for himself. He marches in line nicely, answers when called upon, and is more biddable and obedient. He never voluntarily relates any of his experiences at school and never objects to going. . . .

November, 1939. I visited his room this morning and was amazed to see how nicely he cooperated and responded. He was very quiet and calm and listened to what the teacher was saying about half the time. He does not squeal or run around but takes his place like the other children. The teacher began writing on the board. That immediately attracted his attention. She wrote:

BETTY MAY FEED A FISH.
DON MAY FEED A FISH.
JERRY MAY FEED A FISH.

In his turn he walked up and drew a circle around his name. Then he fed a goldfish. Next, each child was given his weekly reader, and he turned to the proper page as the teacher directed and read when called upon. He also answered a question about one of the pictures. Several times, when pleased, he jumped up and down and shook his head once while answering. . . .

March, 1940. The greatest improvement I notice is his awareness of things about him. He talks very much more and asks a good many questions. Not often does he voluntarily tell me of happenings at school, but if I ask leading questions, he answers them correctly. He really enters into the games with other children. One day he enlisted the family in one game he had just learned, telling each of us just exactly what to do. He feeds himself some better and is better able to do things for himself. . . .

March, 1941. He has improved greatly, but the basic difficulties are still evident. . . .

Donald was brought for another check-up in April, 1941. An invitation to enter the office was disregarded, but he had himself led willingly. Once inside, he did not even glance at the three physicians present (two of whom he well remembered from his previous visits) but immediately made for the desk and handled papers

and books. Questions at first were met with the stereotyped reply, "I don't know." He then helped himself to pencil and paper and wrote and drew pages and pages full of letters of the alphabet and a few simple designs. He arranged the letters in two or three lines, reading them in vertical rather than horizontal succession, and was very much pleased with the result. Occasionally he volunteered a statement or question: "I am going to stay for two days at the Child Study Home." Later he said, "Where is my mother?"

"Why do you want her?" he was asked.

"I want to hug her around the neck."

He used pronouns adequately and his sentences were grammatically correct.

The major part of his "conversation" consisted of questions of an obsessive nature. He was inexhaustible in bringing up variations: "How many days in a week, years in a century, hours in a day, hours in half a day, weeks in a century, centuries in half a millennium," etc., etc.; "How many pints in a gallon, how many gallons to fill four gallons?" Sometimes he asked, "How many hours in a minute, how many days in an hour?" etc. He looked thoughtful and always wanted an answer. At times he temporarily compromised by responding quickly to some other question or request but promptly returned to the same type of behavior. Many of his replies were metaphorical or otherwise peculiar. When asked to subtract 4 from 10, he answered: "I'll draw a hexagon."

He was still extremely autistic. His relation to people had developed only in so far as he addressed them when he needed or wanted to know something. He never looked at the person while talking and did not use communicative gestures. Even this type of contact ceased the moment he was told or given what he had asked for.

A letter from the mother stated in October, 1942:

Don is still indifferent to much that is around him. His interests change often, but always he is absorbed in some kind of silly, unrelated subject. His literal-mindedness is still very marked, he wants to spell words as they sound and to pronounce letters consistently. Recently I have been able to have Don do a few chores around the place to earn picture show money. He really enjoys the movies now but not with any idea of a connected story. He remembers them in the order in which he sees them. Another of his recent hobbies is with old issues of *Time* magazine. He found a copy of the first issue of March 3, 1923, and has attempted to make a list of the dates of publication of each issue since that time. So far he has gotten to April, 1934. He has figured the number of issues in a volume and similar nonsense.

Case 2. Frederick W. was referred on May 27, 1942, at the age of 6 years, with the physician's complaint that his "adaptive behavior in a social setting is characterized by attacking as well as withdrawing behavior." His mother stated:

The child has always been self-sufficient. I could leave him alone and he'd entertain himself very happily, walking around, singing. I have never known him to cry in demanding attention. He was never interested in hide-and-peek, but he'd roll a ball back and forth, watch his father shave, hold the razor box and put the razor back in, put the lid on the soap box. He never was very good with cooperative play. He doesn't care to play with the ordinary things that other children play with, anything with wheels on. He is afraid of mechanical things; he runs from them. He used to be afraid of my egg beater, is perfectly petrified

of my vacuum cleaner. Elevators are simply a terrifying experience to him. He is afraid of spinning tops.

Until the last year, he mostly ignored other people. When we had guests, he just wouldn't pay any attention. He looked curiously at small children and then would go off all alone. He acted as if people weren't there at all, even with his grandparents. About a year ago, he began showing more interest in observing them, would even go up to them. But usually people are an interference. He'll push people away from him. If people come too close to him, he'll push them away. He doesn't want me to touch him or put my arm around him, but he'll come and touch *me*.

To a certain extent, he likes to stick to the same thing. On one of the bookshelves we had three pieces in a certain arrangement. Whenever this was changed, he always rearranged it in the old pattern. He won't try new things, apparently. After watching for a long time, he does it all of a sudden. He wants to be sure he does it right.

He had said at least two words ["Daddy" and "Dora," the mother's first name] before he was 2 years old. From then on, between 2 and 3 years, he would say words that seemed to come as a surprise to himself. He'd say them once and never repeat them. One of the first words he said was "overalls." [The parents never expected him to answer any of their questions, were *once* surprised when he did give an answer—"Yes"]. At about 2½ years, he began to sing. He sang about twenty or thirty songs, including a little French lullaby. In his fourth year, I tried to make him ask for things before he'd get them. He was stronger-willed than I was and held out longer, and he would not get it but he never gave in about it. Now he can count up to into the hundreds and can read numbers, but he is not interested in numbers as they apply to objects. He has great difficulty in learning the proper use of personal pronouns. When receiving a gift, he would say of himself: "You say 'Thank you.'"

He bows, and when he sees the pins go down, he'll jump up and down in great glee.

Frederick was born May 23, 1936, in breech presentation. The mother had "some kidney trouble" and an elective cesarean section was performed about two weeks before term. He was well after birth; feeding presented no problem. The mother recalled that he was never observed to assume an anticipatory posture when she prepared to pick him up. He sat up at 7 months, walked at about 18 months. He had occasional colds but no other illness. Attempts to have him attend nursery school were unsuccessful: "he would either be retiring and hide in a corner or would push himself into the middle of a group and be very aggressive."

The boy is an only child. The father, aged 44, a university graduate and a plant pathologist, has traveled a great deal in connection with his work. He is a patient, even-tempered man, mildly obsessive; as a child he did not talk "until late" and was delicate, supposedly "from lack of vitamin in diet allowed in Africa." The mother, aged 40, a college graduate, successively a secretary to physicians, a purchasing agent, director of secretarial studies in a girls' school, and at one time a teacher of history, is described as healthy and even-tempered.

The paternal grandfather organized medical missions in Africa, studied tropical medicine in England, became an authority on manganese mining in Brazil, was at the same time dean of a medical school and director of an art museum in an American city, and is listed in *Who's Who* under two different names. He disappeared in 1911, his whereabouts remaining obscure for twenty-five years. It was then learned that he had gone to Europe and married a novelist, without obtaining a divorce from his first wife. The family considers him "a very strong character of the genius type, who wanted to do as much good as he could."

The paternal grandmother is described as "a dyed-in-the-wool missionary if ever there was one, quite dominating and hard to get along with, at present pioneering in the South at a college for mountaineers."

The father is the second of five children. The oldest is a well known newspaper man and author of a best-seller. A married sister, "high-strung and quite precocious," is a singer. Next comes a brother who writes for adventure magazines. The youngest, a painter, writer, and radio commentator, "did not talk until he was about 6 years old," and the first words he is reported to have spoken were, "When a lion can't talk he can whistle."

The mother said of her own relatives, "Mine are very ordinary people." Her family is settled in a Wisconsin town, where her father is a banker; her mother is "mildly interested" in church work, and her three sisters, all younger than herself, are average middle-class matrons.

Frederick was admitted to the Harriet Lane Home on May 27, 1942. He appeared to be well nourished. The circumference of his head was 21 inches, of his chest 22 inches, of his abdomen 21 inches. His occiput and frontal region were markedly prominent. There was a supernumerary nipple in the left axilla. Reflexes were sluggish but present. All other findings, including laboratory examinations and X ray of his skull, were normal, except for large and ragged tonsils.

He was led into the psychiatrist's office by a nurse, who left the room immediately afterward. His facial expression was tense, somewhat apprehensive, and gave the impression of intelligence. He wandered aimlessly about for a few moments, showing no sign of awareness of the three adults present. He then sat down on the couch, ejaculating unintelligible sounds, and then abruptly lay down, wearing throughout a dreamy-like smile. When he responded to questions or commands at all, he did so by repeating them echolalia fashion. The most striking feature in his behavior was the difference in his reactions to objects and to people. Objects absorbed him easily and he showed good attention and perseverance in playing with them. He seemed to regard people as unwelcome intruders to whom he paid as little attention as they would permit. When forced to respond, he did so briefly and returned to his absorption in things. When a hand was held out before him so that he could not possibly ignore it, he played with it briefly as if it were a detached object. He blew out a match with an expression of satisfaction with the achievement, but did not look up to the person who had lit the match. When a fourth person entered the room, he retreated for a minute or two behind the bookcase, saying, "I don't want you," and waving him away, then resumed his play, paying no further attention to him or anyone else.

Test results (Grace Arthur performance scale) were difficult to evaluate because of his lack of cooperation. He did best with the Seguin form board (shortest time, 58 seconds). In the mare and foal completion test he seemed to be guided by form entirely, to the extent that it made no difference whether the pieces were right side up or not. He completed the triangle but not the rectangle. With all the form boards he showed good perseverance and concentration, working at them spontaneously and interestedly. Between tests, he wandered about the room examining various objects or fishing in the wastebasket without regard for

the persons present. He made frequent sucking noises and occasionally kissed the dorsal surface of his hand. He became fascinated with the circle from the form board, rolling it on the desk and attempting, with occasional success, to catch it just before it rolled off.

Frederick was enrolled at the Devereux Schools on September 26, 1942.

Case 3. Richard M. was referred to the Johns Hopkins Hospital on February 5, 1941, at 3 years, 3 months of age, with the complaint of deafness because he did not talk and did not respond to questions. Following his admission, the interne made this observation:

The child seems quite intelligent, playing with the toys in his bed and being adequately curious about instruments used in the examination. He seems quite self-sufficient in his play. It is difficult to tell definitely whether he hears, but it seems that he does. He will obey commands, such as "Sit up" or "Lie down," even when he does not see the speaker. He does not pay attention to conversation going on around him, and although he does make noises, he says no recognizable words.

His mother brought with her copious notes that indicated obsessive preoccupation with details and a tendency to read all sorts of peculiar interpretations into the child's performances. She watched (and recorded) every gesture and every "look," trying to find their specific significance and finally deciding on a particular, sometimes very farfetched explanation. She thus accumulated an account that, though very elaborate and richly illustrated, on the whole revealed more of her own version of what had happened in each instance than it told of what had actually occurred.

Richard's father is a professor of forestry in a southern university. He is very much immersed in his work, almost entirely to the exclusion of social contacts. The mother is a college graduate. The maternal grandfather is a physician, and the rest of the family, in both branches, consists of intelligent professional people. Richard's brother, thirty-one months his junior, is described as a normal, well developed child.

Richard was born on November 17, 1937. Pregnancy and birth were normal. He sat up at 8 months and walked at 1 year. His mother began to "train" him at the age of 3 weeks, giving him a suppository every morning "so his bowels would move by the clock." The mother, in comparing her two children, recalled that while her younger child showed an active anticipatory reaction to being picked up, Richard had not shown any physiognomic or postural sign of preparedness and had failed to adjust his body to being held by her or the nurse. Nutrition and physical growth proceeded satisfactorily. Following smallpox vaccination at 12 months, he had an attack of diarrhea and fever, from which he recovered in somewhat less than a week.

In September, 1940, the mother, in commenting on Richard's failure to talk, remarked in her notes:

I can't be sure just when he stopped the imitation of word sounds. It seems that he has gone backward mentally gradually for the last two years. We have thought it was because he did not disclose what was in his head, that it was there all right. Now that he is making

so many sounds, it is disconcerting because it is now evident that he can't talk. Before, I thought he could if he only would. *He gave the impression of silent wisdom to me. . . . One puzzling and discouraging thing is the great difficulty one has in getting his attention.*

On physical examination, Richard was found to be healthy except for large tonsils and adenoids, which were removed on February 8, 1941. His head circumference was $54\frac{1}{2}$ cm. His electroencephalogram was normal.

He had himself led willingly to the psychiatrist's office and engaged at once in active play with the toys, paying no attention to the persons in the room. Occasionally, he looked up at the walls, smiled and uttered short staccato forceful sounds—"Ee! Ee! Ee!" He complied with a spoken and gestural command of his mother to take off his slippers. When the command was changed to another, this time without gestures, he repeated the original request and again took off his slippers (which had been put on again). He performed well with the unrotated form board but not with the rotated form board.

Richard was again seen at the age of 4 years, 4 months. He had grown considerably and gained weight. When started for the examination room, he screamed and made a great fuss, but once he yielded he went along willingly. He immediately proceeded to turn the lights on and off. He showed no interest in the examiner or any other person but was attracted to a small box that he threw as if it were a ball.

At 4 years, 11 months, his first move in entering the office (or any other room) was to turn the lights on and off. He climbed on a chair, and from the chair to the desk in order to reach the switch of the wall lamp. He did not communicate his wishes but went into a rage until his mother guessed and procured what he wanted. He had no contact with people, whom he definitely regarded as an interference when they talked to him or otherwise tried to gain his attention.

The mother felt that she was no longer capable of handling him, and he was placed in a foster home near Annapolis with a woman who had shown a remarkable talent for dealing with difficult children. Recently, this woman heard him say clearly his first intelligible words. They were, "Good night."

Case 4. Paul G. was referred in March, 1941, at the age of 5 years, for psychometric assessment of what was thought to be a severe intellectual defect. He had attended a private nursery school, where his incoherent speech, inability to conform, and reaction with temper outbursts to any interference created the impression of feeble-mindedness.

Paul, an only child, had come to this country from England with his mother at nearly 2 years of age. The father, a mining engineer, believed to be in Australia now, had left his wife shortly before that time after several years of an unhappy marriage. The mother, supposedly a college graduate, a restless, unstable, excitable woman, gave a vague and blatantly conflicting history of the family background and the child's development. She spent much time emphasizing and illustrating her efforts to make Paul clever by teaching him to memorize poems and songs. At 3 years, he knew the words of not less than thirty-seven songs and various and sundry nursery rhymes.

He was born normally. He vomited a great deal during his first year, and feed-

ing formulas were changed frequently with little success. He ceased vomiting when he was started on solid food. He cut his teeth, held up his head, sat up, walked, and established bowel and bladder control at the usual age. He had measles, chickenpox, and pertussis without complications. His tonsils were removed when he was 3 years old. On physical examination, phimosis was found to be the only deviation from otherwise good health.

The following features emerged from observation on his visits to the clinic, during five weeks' residence in a boarding home, and during a few days' stay in the hospital.

Paul was a slender, well built, attractive child, whose face looked intelligent and animated. He had good manual dexterity. He rarely responded to any form of address, even to the calling of his name. At one time he picked up a block from the floor on request. Once he copied a circle immediately after it had been drawn before him. Sometimes an energetic "Don't!" caused him to interrupt his activity of the moment. But usually, when spoken to, he went on with whatever he was doing as if nothing had been said. Yet one never had the feeling that he was willingly disobedient or contrary. He was obviously so remote that the remarks did not reach him. He was always vivaciously occupied with something and seemed to be highly satisfied, unless someone made a persistent attempt to interfere with his self-chosen actions. Then he first tried impatiently to get out of the way and, when this met with no success, screamed and kicked in a full-fledged tantrum.

There was a marked contrast between his relations to people and to objects. Upon entering the room, he instantly went after objects and used them correctly. He was not destructive and treated the objects with care and even affection. He picked up a pencil and scribbled on paper that he found on the table. He opened a box, took out a toy telephone, singing again and again: "He wants the telephone," and went around the room with the mouthpiece and receiver in proper position. He got hold of a pair of scissors and patiently and skilfully cut a sheet of paper into small bits, singing the phrase "Cutting paper," many times. He helped himself to a toy engine, ran around the room holding it up high and singing over and over again, "The engine is flying." While these utterances, made always with the same inflection, were clearly connected with his actions, he ejaculated others that could not be linked up with immediate situations. These are a few examples: "The people in the hotel"; "Did you hurt your leg?" "Candy is all gone, candy is empty"; "You'll fall off the bicycle and bump your head." However, some of those exclamations could be definitely traced to previous experiences. He was in the habit of saying almost every day, "Don't throw the dog off the balcony." His mother recalled that she had said those words to him about a toy dog while they were still in England. At the sight of a saucepan he would invariably exclaim, "Peten-eater." The mother remembered that this particular association had begun when he was 2 years old and she happened to drop a saucepan while reciting to him the nursery rhyme about "Peter, Peter, pumpkin eater." Reproductions of warnings of bodily injury constituted a major portion of his utterances.

None of these remarks was meant to have communicative value. There was,

on his side, no affective tie to people. He behaved as if people as such did not matter or even exist. It made no difference whether one spoke to him in a friendly or a harsh way. He never looked up at people's faces. When he had any dealings with persons at all, he treated them, or rather parts of them, as if they were objects. He would use a hand to lead him. He would, in playing, butt his head against his mother as at other times he did against a pillow. He allowed his boarding mother's hands to dress him, paying not the slightest attention to *her*. When with other children, he ignored them and went after their toys.

His enunciation was clear and he had a good vocabulary. His sentence construction was satisfactory, with one significant exception. He never used the pronoun of the first person, nor did he refer to himself as Paul. All statements pertaining to himself were made in the second person, as literal repetitions of things that had been said to him before. He would express his desire for candy by saying, "*You* want candy." He would pull his hand away from a hot radiator and say "*You* get hurt." Occasionally there were parrot-like repetitions of things said to him.

Formal testing could not be carried out, but he certainly could not be regarded as feeble-minded in the ordinary sense. After hearing his boarding mother say grace three times, he repeated it without a flaw and has retained it since then. He could count and name colors. He learned quickly to identify his favorite victrola records from a large stack and knew how to mount and play them.

His boarding mother reported a number of observations that indicated compulsive behavior. He often masturbated with complete abandon. He ran around in circles emitting phrases in an ecstatic-like fashion. He took a small blanket and kept shaking it, delightedly shouting, "Ee! Ee!" He could continue in this manner for a long time and showed great irritation when he was interfered with. All these and many other things were not only repetitions but recurred day after day with almost photographic sameness.

Case 5. Barbara K. was referred in February, 1942, at 8 years, 3 months of age. Her father's written note stated:

First child, born normally October 30, 1933. She nursed very poorly and was put on bottle after about a week. She quit taking any kind of nourishment at 3 months. She was tube-fed five times daily up to 1 year of age. She began to eat then, though there was much difficulty until she was about 18 months old. Since then she has been a good eater, likes to experiment with food, tasting, and now fond of cooking.

Ordinary vocabulary at 2 years, but always slow at putting words into sentences. Phenomenal ability to spell, read, and a good writer, but still has difficulty with verbal expression. Written language has helped the verbal. Can't get arithmetic except as a memory feat.

Repetitious as a baby, and obsessive now: holds things in hands, takes things to bed with her, repeats phrases, gets stuck on an idea, game, etc., and rides it hard, then goes to something else. She used to talk using "you" for herself and "I" for her mother or me, as if she were saying things as we would in talking to her.

Very timid, fearful of various and changing things, wind, large animals, etc. Mostly passive, but passively stubborn at times. Inattentive to the point where one wonders if she hears. (She does!) No competitive spirit, no desire to please her teacher. If she knew more

than any member in the class about something, she would give no hint of it, just keep quiet, maybe not even listen.

In camp last summer she was well liked, learned to swim, is graceful in water (had always appeared awkward in her motility before), overcame fear of ponies, played best with children of 5 years of age. At camp she slid into avitaminosis and malnutrition but offered almost no verbal complaints.

Barbara's father is a prominent psychiatrist. Her mother is a well educated, kindly woman. A younger brother, born in 1937, is healthy, alert, and well developed.

Barbara "shook hands" upon request (offering the left upon coming, the right upon leaving) by merely raising a limp hand in the approximate direction of the examiner's proffered hand; the motion definitely lacked the implication of greeting. During the entire interview there was no indication of any kind of affective contact. A pin prick resulted in withdrawal of her arm, a fearful glance at the pin (not the examiner), and utterance of the word "Hurt!" not addressed to anyone in particular.

She showed no interest in test performances. The concept of test, of sharing an experience or situation, seemed foreign to her. She protruded her tongue and played with her hand as one would with a toy. Attracted by a pen on the desk stand, she said: "Pen like yours at home." Then, seeing a pencil, she inquired: "May I take this home?"

When told that she might, she made no move to take it. The pencil was given to her, but she shoved it away, saying, "It's not my pencil."

She did the same thing repeatedly in regard to other objects. Several times she said, "Let's see Mother" (who was in the waiting room).

She read excellently, finishing the 10-year Binet fire story in thirty-three seconds and with no errors, but was unable to reproduce from memory anything she had read. In the Binet pictures, she saw (or at least reported) no action or relatedness between the single items, which she had no difficulty enumerating. Her handwriting was legible. Her drawing (man, house, cat sitting on six legs, pumpkin, engine) was unimaginative and stereotyped. She used her right hand for writing, her left for everything else; she was left-footed and right-eyed.

She knew the days of the week. She began to name them: "Saturday, Sunday, Monday," then said, "You go to school" (meaning, "on Monday"), then stopped as if the performance were completed.

Throughout all these procedures, in which—often after several repetitions of the question or command—she complied almost automatically, she scribbled words spontaneously: "oranges"; "lemons"; "bananas"; "grapes"; "cherries"; "apples"; "apricots"; "tangerine"; "grapefruits"; "watermelon juice"; the words sometimes ran into each other and were obviously not meant for others to read.

She frequently interrupted whatever "conversation" there was with references to "motor transports" and "piggy-back," both of which—according to her father—had preoccupied her for quite some time. She said, for instance, "I saw motor transports"; "I saw piggy-back when I went to school."

Her mother remarked, "Appendages fascinate her, like a smoke stack or a pendulum." Her father had previously stated: "Recent interest in sexual matters, hanging about when we take a bath, and obsessive interest in toilets."

Barbara was placed at the Devereux Schools, where she is making some progress in learning to relate herself to people.

Case 6. Virginia S., born September 13, 1931, has resided at a state training school for the feebleminded since 1936, with the exception of one month in 1938, when she was paroled to a school for the deaf "for educational opportunity." Dr. Esther L. Richards, who saw her several times, clearly recognized that she was neither deaf nor feebleminded and wrote in May, 1941:

Virginia stands out from other children [at the training school] because she is absolutely different from any of the others. She is neat and tidy, does not play with other children, and does not seem to be deaf from gross tests, but does not talk. The child will amuse herself by the hour putting picture puzzles together, sticking to them until they are done. I have seen her with a box filled with the parts of two puzzles gradually work out the pieces for each. All findings seem to be in the nature of a congenital abnormality which looks as if it were more of a personality abnormality than an organic defect.

Virginia, the younger of two siblings, was the daughter of a psychiatrist, who said of himself (in December, 1941): "I have never liked children, probably a reaction on my part to the restraint from movement (travel), the minor interruptions and commotions."

Of Virginia's mother, her husband said: "She is not by any means the mother type. Her attitude [toward a child] is more like toward a doll or pet than anything else."

Virginia's brother, Philip, five years her senior, when referred to us because of severe stuttering at 15 years of age, burst out in tears when asked how things were at home and he sobbed: "The only time my father has ever had anything to do with me was when he scolded me for doing something wrong."

His mother did not contribute even that much. He felt that all his life he had lived in "a frosty atmosphere" with two inapproachable strangers.

In August, 1938, the psychologist at the training school observed that Virginia could respond to sounds, the calling of her name, and the command, "Look!"

She pays no attention to what is said to her but quickly comprehends whatever is expected. Her performance reflects discrimination, care, and precision.

With the nonlanguage items of the Binet and Merrill-Palmer tests, she achieved an I.Q. of 94. "Without a doubt," commented the psychologist,

Her intelligence is superior to this. . . . She is quiet, solemn, composed. Not once have I seen her smile. She retires within herself, segregating herself from others. She seems to be in a world of her own, oblivious to all but the center of interest in the presiding situation. She is mostly self-sufficient and independent. When others encroach upon her integrity, she tolerates them with indifference. There was no manifestation of friendliness or interest in persons. On the other hand, she finds pleasure in dealing with things, about which she shows imagination and initiative. Typically, there is no display of affection. . . .

Psychologist's note, October, 1939. Today Virginia was much more at home in the office. She remembered (after more than a year) where the toys were kept and helped herself. She could not be persuaded to participate in test procedures, would not wait for demonstrations when they were required. Quick, skilled moves. Trial and error plus insight. Very few futile moves. Immediate retesting reduced the time and error by more than half. There are times, more often than not, in which she is completely oblivious to all but her immediate focus of attention. . . .

January, 1940. Mostly she is quiet, as she has always worked and played alone. She has not resisted authority or caused any special trouble. During group activities, she soon becomes restless, squirms, and wants to leave to satisfy her curiosity about something elsewhere. She does make some vocal sounds, crying out if repressed or opposed too much by another child. She hums to herself, and in December I heard her hum the perfect tune of a Christmas hymn while she was pasting paper chains.

June, 1940. The school girls have said that Virginia says some words when at the cottage. They remember that she loves candy so much and says "Chocolate," "Marshmallow," also "Mama" and "Baby."

When seen on October 11, 1942, Virginia was a tall, slender, very neatly dressed 11-year-old girl. She responded when called by getting up and coming nearer, without ever looking up to the person who called her. She just stood listlessly, looking into space. Occasionally, in answer to questions, she muttered, "Mamma, baby." When a group was formed around the piano, one child playing and the others singing, Virginia sat among the children, seemingly not even noticing what went on, and gave the impression of being self-absorbed. She did not seem to notice when the children stopped singing. When the group dispersed she did not change her position and appeared not to be aware of the change of scene. She had an intelligent physiognomy, though her eyes had a blank expression.

Case 7. Herbert B. was referred on February 5, 1941, at 3 years, 2 months of age. He was thought to be seriously retarded in intellectual development. There were no physical abnormalities except for undescended testicles. His electroencephalogram was normal.

Herbert was born November 16, 1937, two weeks before term by elective cesarean section; his birth weight was $6\frac{1}{4}$ pounds. He vomited all food from birth through the third month. Then vomiting ceased almost abruptly and, except for occasional regurgitation, feeding proceeded satisfactorily. According to his mother, he was "always slow and quiet." For a time he was believed to be deaf because "he did not register any change of expression when spoken to or when in the presence of other people; also, he made no attempt to speak or to form words." He held up his head at 4 months and sat at 8 months, but did not try to walk until 2 years old, when suddenly "he began to walk without any preliminary crawling or assistance by chairs." He persistently refused to take fluid in any but an all-glass container. Once, while at a hospital, he went three days without fluid because it was offered in tin cups. He was "tremendously frightened by running water, gas burners, and many other things." He became upset by any change of an accustomed pattern: "if he notices change, he is very fussy and

cries." But he himself liked to pull blinds up and down, to tear cardboard boxes into small pieces and play with them for hours, and to close and open the wings of doors.

Herbert's parents separated shortly after his birth. The father, a psychiatrist, is described as "a man of unusual intelligence, sensitive, restless, introspective, taking himself very seriously, not interested in people, mostly living within himself, at times alcoholic." The mother, a physician, speaks of herself as "energetic and outgoing, fond of people and children but having little insight into their problems, finding it a great deal easier to accept people rather than try to understand them." Herbert is the youngest of three children. The second is a normal, healthy boy. The oldest, Dorothy, born in June, 1934, after thirty-six hours of hard labor, seemed alert and responsive as an infant and said many words at 18 months, but toward the end of the second year she "did not show much progression in her play relationships or in contacts with other people." She wanted to be left alone, danced about in circles, made queer noises with her mouth, and *ignored persons completely* except for her mother, to whom she clung "in panic and general agitation." (Her father hated her ostensibly.) "Her speech was very meager and expression of ideas completely lacking. She had *difficulties with her pronouns* and would repeat 'you' and 'I' instead of using them for the proper persons." She was first declared to be feebleminded, then schizophrenic, but after the parents separated (the children remaining with their mother), she "blossomed out." She now attends school, where she makes good progress; she talks well, has an I.Q. of 108, and—though sensitive and moderately apprehensive—is interested in people and gets along reasonably well with them.

Herbert, when examined on his first visit, showed a remarkably intelligent physiognomy and good motor coordination. Within certain limits, he displayed astounding purposefulness in the pursuit of self-selected goals. Among a group of blocks, he instantly recognized those that were glued to a board and those that were detachable. He could build a tower of blocks as skilfully and as high as any child of his age or even older. He could not be diverted from his self-chosen occupations. He was annoyed by any interference, shoving intruders away (without ever looking at them), or screaming when the shoving had no effect.

He was again seen at 4 years, 7 months, and again at 5 years, 2 months of age. He still did not speak. Both times he entered the office without paying the slightest attention to the people present. He went after the Seguin form board and instantly busied himself putting the figures into their proper spaces and taking them out again adroitly and quickly. When interfered with he whined impatiently. When one figure was stealthily removed, he immediately noticed its absence, became disturbed, but promptly forgot all about it when it was put back. At times, after he had finally quieted down following the upset caused by the removal of the form board, he jumped up and down on the couch with an ecstatic expression on his face. He did not respond to being called or to any other words addressed to him. He was completely absorbed in whatever he did. He never smiled. He sometimes uttered inarticulate sounds in a monotonous singsong manner. At

one time he gently stroked his mother's leg and touched it with his lips. He very frequently brought blocks and other objects to his lips. There was an almost photographic likeness of his behavior during the two visits, with the main exception that at 4 years he showed apprehension and shrank back when a match was lighted, while at 5 years he reacted by jumping up and down ecstatically.

Case 8. Alfred L. was brought by his mother in November, 1935, at 3½ years of age with this complaint:

He has gradually shown a marked tendency toward developing one special interest which will completely dominate his day's activities. He talks of little else while the interest exists, he frets when he is not able to indulge in it (by seeing it, coming in contact with it, drawing pictures of it), and it is difficult to get his attention because of his preoccupation. . . . There has also been the problem of an overattachment to the world of objects and failure to develop the usual amount of social awareness.

Alfred was born in May, 1932, three weeks before term. For the first two months, "the feeding formula caused considerable concern but then he gained rapidly and became an unusually large and vigorous baby." He sat up at 5 months and walked at 14.

Language developed slowly; he seemed to have no interest in it. He seldom tells experience. He still confuses pronouns. He never asks questions in the form of questions (with the appropriate inflection). Since he talked, there has been a tendency to repeat over and over one word or statement. He almost never says a sentence without repeating it. Yesterday, when looking at a picture, he said many times, "Some cows standing in the water." We counted fifty repetitions, then he stopped after several more and then began over and over.

He had a good deal of "worrying":

He frets when the bread is put in the oven to be made into toast, and is afraid it will get burned and be hurt. He is upset when the sun sets. He is upset because the moon does not always appear in the sky at night. He prefers to play alone; he will get down from a piece of apparatus as soon as another child approaches. He likes to work out some project with large boxes (make a trolley, for instance) and does not want anyone to get on it or interfere.

When infantile thumb sucking was prevented by mechanical devices, he gave it up and instead put various objects into his mouth. On several occasions pebbles were found in his stools. Shortly before his second birthday, he swallowed cotton from an Easter rabbit, aspirating some of the cotton, so that tracheotomy became necessary. A few months later, he swallowed some kerosene "with no ill effects."

Alfred was an only child. His father, 30 years old at the time of his birth, "does not get along well with people, is suspicious, easily hurt, easily roused to anger, has to be dragged out to visit friends, spends his spare time reading, gardening, and fishing." He is a chemist and a law school graduate. The mother, of the same age, is a "clinical psychologist," very obsessive and excitable. The paternal grandparents died early; the father was adopted by a minister. The maternal grandfather, a psychologist, was severely obsessive, had numerous tics, was given to "repeated hand washing, protracted thinking along one line, fear of

being alone, cardiac fears." The grandmother, "an excitable, explosive person, has done public speaking, published several books, is an incessant solitaire player, greatly worried over money matters." A maternal uncle frequently ran away from home and school, joined the marines, and later "made a splendid adjustment in commercial life."

The mother left her husband two months after Alfred's birth. The child has lived with his mother and maternal grandparents. "In the home is a nursery school and kindergarten (run by the mother), which creates some confusion for the child." Alfred did not see his father until he was 3 years, 4 months old, when the mother decided that "he should know his father" and "took steps to have the father come to the home to see the child."

Alfred, upon entering the office, paid no attention to the examiner. He immediately spotted a train in the toy cabinet, took it out, and connected and disconnected the cars in a slow, monotonous manner. He kept saying many times, "More train—more train—more train." He repeatedly "counted" the car windows: "One, two windows—one, two windows—one, two windows—four window, eight window, eight windows." He could not in any way be distracted from the trains. A Binet test was attempted in a room in which there were no trains. It was possible with much difficulty to pierce from time to time through his preoccupations. He finally complied in most instances in a manner that clearly indicated that he wanted to get through with the particular intrusion; this was repeated with each individual item of the task. In the end he achieved an *I.Q.* of 140.

The mother did not bring him back after this first visit because of "his continued distress when confronted with a member of the medical profession." In August, 1938, she sent upon request a written report of his development. From this report, the following passages are quoted:

He is called a lone wolf. He prefers to play alone and avoids groups of children at play. He does not pay much attention to adults except when demanding stories. He avoids competition. He reads simple stories to himself. He is very fearful of being hurt, talks a great deal about the use of the electric chair. He is thrown into a panic when anyone accidentally covers his face.

Alfred was again referred in June, 1941. His parents had decided to live together. Prior to that the boy had been in eleven different schools. He had been kept in bed often because of colds, bronchitis, chickenpox, streptococcus infection, impetigo, and a vaguely described condition which the mother—the assurances of various pediatricians to the contrary notwithstanding—insisted was "rheumatic fever." While in the hospital, he is said to have behaved "like a manic patient." (The mother liked to call herself a psychiatrist and to make "psychiatric" diagnoses of the child. From the mother's report, which combined obsessive enumeration of detailed instances with "explanations" trying to prove Alfred's "normalcy," the following information was gathered.

He had begun to play with children younger than himself, "using them as puppets—that's all." He had been stuffed with music, dramatics, and recitals,

and had an excellent rote memory. He still was "terribly engrossed" in his play, didn't want people around, just couldn't relax:

He had many fears, almost always connected with mechanical noise (metal grinders, vacuum cleaners, street cars, trains, etc.). Usually he winds up with an obsessed interest in the things he was afraid of. Now he is afraid of the shrillness of a dog's barking.

Alfred was extremely tense during the entire interview, and very serious-minded, to such an extent that had it not been for his juvenile voice, he might have given the impression of a worried and preoccupied little old man. At the same time, he was very restless and showed considerable pressure of talk, which had nothing personal in it but consisted of obsessive questions about windows, shades, dark rooms, especially the X-ray room. He never smiled. No change of topic could get him away from the topic of light and darkness. But in between he answered the examiner's questions, which often had to be repeated several times, and to which he sometimes responded as the result of a bargain—"You answer my question, and I'll answer yours." He was painstakingly specific in his definitions. A balloon "is made out of lined rubber and has air in it and some have gas and sometimes they go up in the air and sometimes they can hold up and when they got a hole in it they'll bust up; if people squeeze they'll bust. Isn't it right?" A tiger "is a thing, animal, striped, like a cat, can scratch, eats people up, wild, lives in the jungle sometimes and in the forests, mostly in the jungle. Isn't it right?" This question "Isn't it right?" was definitely meant to be answered; there was a serious desire to be assured that the definition was sufficiently complete.

He was often confused about the meaning of words. When shown a picture and asked, "What is this picture about?" he replied, "People are moving *about*."

He once stopped and asked, very much perplexed, why there was "The Johns Hopkins Hospital" printed on the history sheets: "Why do they have to say it?" This, to him, was a real problem of major importance, calling for a great deal of thought and discussion. Since the histories were taken at the hospital, why should it be necessary to have the name on every sheet, though the person writing on it knew where he was writing? The examiner, whom he remembered very well from his visit six years previously, was to him nothing more nor less than a person who was expected to answer his obsessive questions about darkness and light.

Case 9. Charles N. was brought by his mother on February 2, 1943, at 4½ years of age, with the chief complaint, "The thing that upsets me most is that I can't reach my baby." She introduced her report by saying: "I am trying hard not to govern my remarks by professional knowledge which has intruded in my own way of thinking by now."

As a baby, the boy was inactive, "slow and phlegmatic." He would lie in the crib, just staring. He would act almost as if hypnotized. He seemed to concentrate on doing one thing at a time. Hypothyroidism was suspected, and he was given thyroid extract, without any change of the general condition.

His enjoyment and appreciation of music encouraged me to play records. When he was 1½ years old, he could discriminate between eighteen symphonies. He recognized the composer as soon as the first movement started. He would say "Beethoven." At about the same age, he began to spin toys and lids of bottles and jars by the hour. He had a lot of manual dexterity in ability to spin cylinders. He would watch it and get severely excited and jump up and down in ecstasy. Now he is interested in reflecting light from mirrors and catching reflections. When he is interested in a thing, you cannot change it. He would pay no attention to me and show no recognition of me if I enter the room. . . .

The most impressive thing is his detachment and his inaccessibility. He walks as if he is in a shadow, lives in a world of his own where he cannot be reached. No sense of relationship to persons. He went through a period of quoting another person; never offers anything himself. His entire conversation is a replica of whatever has been said to him. He used to speak of himself in the second person, now he uses the third person at times; he would say, "He wants"—never "I want." . . .

He is destructive; the furniture in his room looks like it has hunked out of it. He will break a purple crayon into two parts and say, "You had a beautiful purple crayon and now it's two pieces. Look what *you* did."

He developed an obsession about feces, would hide it anywhere (for instance, in drawers), would tease me if I walked into the room: "You soiled your pants, now you can't have your crayons!"

As a result, he is still not toilet trained. He never soils himself in the nursery school, always does it when he comes home. The same is true of wetting. He is proud of wetting, jumps up and down with ecstasy, says, "Look at the big puddle *he* made."

When he is with other people, he doesn't look up at them. Last July, we had a group of people. When Charles came in, it was just like a foal who'd been let out of an enclosure. He did not pay attention to them but their presence was felt. He will mimic a voice and he sings and some people would not notice any abnormality in the child. At school, he never envelops himself in a group, he is detached from the rest of the children, except when he is in the assembly; if there is music, he will go to the front row and sing.

He has a wonderful memory for words. Vocabulary is good, except for pronouns. He never initiates conversation, and conversation is limited, extensive only as far as objects go.

Charles was born normally, a planned and wanted child. He sat up at 6 months and walked at less than 15 months—"just stood up and walked one day—no preliminary creeping." He has had none of the usual children's diseases.

Charles is the oldest of three children. The father, a high-school graduate and a clothing merchant, is described as a "self-made, gentle, calm, and placid person." The mother has "a successful business record, theatrical booking office in New York, of remarkable equanimity." The other two children were 28 and 14 months old at the time of Charles' visit to the Clinic. The maternal grandmother, "very dynamic, forceful, hyperactive, almost hypomanic," has done some writing and composing. A maternal aunt, "psychoneurotic, very brilliant, given to hysterics," has written poems and songs. Another aunt was referred to as "the amazon of the family." A maternal uncle, a psychiatrist, has considerable musical talent. The paternal relatives are described as "ordinary simple people."

Charles was a well developed, intelligent-looking boy, who was in good physical health. He wore glasses. When he entered the office, he paid not the slightest attention to the people present (three physicians, his mother, and his uncle). Without looking at anyone, he said, "Give me a pencil!" and took a piece of paper from the desk and wrote something resembling a figure 2 (a large desk calendar prominently displayed a figure 2; the day was February 2). He had brought

with him a copy of *Readers Digest* and was fascinated by a picture of a baby. He said, "Look at the funny baby," innumerable times, occasionally adding, "Is he not funny? Is he not sweet?"

When the book was taken away from him, he struggled with the hand that held it, without looking at the *person* who had taken the book. When he was pricked with a pin, he said, "What's this?" and answered his own question: "It is a needle."

He looked timidly at the pin, shrank from further pricks, but at no time did he seem to connect the pricking with the *person* who held the pin. When the *Readers Digest* was taken from him and thrown on the floor and a foot placed over it, he tried to remove the foot as if it were another detached and interfering object, again with no concern for the *person* to whom the foot belonged. He once turned to his mother and excitedly said, "Give it to you!"

When confronted with the Seguin form board, he was mainly interested in the names of the forms, before putting them into their appropriate holes. He often spun the forms around, jumping up and down excitedly while they were in motion. The whole performance was very repetitious. He never used language as a means of communicating with people. He remembered names, such as "octagon," "diamond," "oblong block," but nevertheless kept asking, "What is this?"

He did not respond to being called and did not look at his mother when she spoke to him. When the blocks were removed, he screamed, stamped his feet, and cried, "I'll give it to you!" (meaning "You give it to me"). He was very skilful in his movements.

Charles was placed at the Devereux Schools.

Case 10. John F. was first seen on February 13, 1940, at 2 years, 4 months of age.

The father said: "The main thing that worries me is the difficulty in feeding. That is the essential thing, and secondly his slowness in development. During the first days of life he did not take the breast satisfactorily. After fifteen days he was changed from breast to bottle but did not take the bottle satisfactorily. There is a long story of trying to get food down. We have tried everything under the sun. He has been immature all along. At 20 months he first started to walk. He sucks his thumb and grinds his teeth quite frequently and rolls from side to side before sleeping. If we don't do what he wants, he will scream and yell."

John was born September 19, 1937; his birth weight was 7½ pounds. There were frequent hospitalizations because of the feeding problem. No physical disorder was ever found, except that the anterior fontanelle did not close until he was 2½ years of age. He suffered from repeated colds and otitis media, which necessitated bilateral myringotomy.

John was an only child until February, 1943. The father, a psychiatrist, is "a very calm, placid, emotionally stable person, who is the soothing element in the family." The mother, a high-school graduate, worked as secretary in a pathology laboratory before marriage—"a hypomanic type of person; sees everything as a pathological specimen rather than well; throughout the pregnancy

she was very apprehensive, afraid she would not live through the labor." The paternal grandmother is "obsessive about religion and washes her hands every few minutes." The maternal grandfather was an accountant.

John was brought to the office by both parents. He wandered about the room constantly and aimlessly. Except for spontaneous scribbling, he never brought two objects into relation to each other. He did not respond to the simplest commands, except that his parents with much difficulty elicited bye-bye, pat-a-cake, and peek-a-boo gestures, performed clumsily. His typical attitude toward objects was to throw them on the floor.

Three months later, his vocabulary showed remarkable improvement, though his articulation was defective. Mild obsessive trends were reported, such as pushing aside the first spoonful of every dish. His excursions about the office were slightly more purposeful.

At the end of his fourth year, he was able to form a very limited kind of affective contact, and even that only with a very limited number of people. Once such a relationship had been established, it had to continue in exactly the same channels. He was capable of forming elaborate and grammatically correct sentences, but he used the pronoun of the second person when referring to himself. He used language not as a means of communication but mainly as a repetition of things he had heard, without alteration of the personal pronoun. There was very marked obsessiveness. Daily routine must be adhered to rigidly; any slightest change of the pattern called forth outbursts of panic. There was endless repetition of sentences. He had an excellent rote memory and could recite many prayers, nursery rhymes, and songs "in different languages"; the mother did a great deal of stuffing in this respect and was very proud of these "achievements": "He can tell victrola records by their color and if one side of the record is identified, he remembers what is on the other side."

At 4½ years, he began gradually to use pronouns adequately. Even though his direct interest was in objects only, he took great pains in attracting the attention of the examiner (Dr. Hilde Bruch) and in gaining her praise. However, he never addressed her directly and spontaneously. He wanted to make sure of the sameness of the environment literally by keeping doors and windows closed. When his mother opened the door "to pierce through his obsession," he became violent in closing it again and finally, when again interfered with, burst helplessly into tears, utterly frustrated.

He was extremely upset upon seeing anything broken or incomplete. He noticed two dolls to which he had paid no attention before. He saw that one of them had no hat and became very much agitated, wandering about the room to look for the hat. When the hat was retrieved from another room, he instantly lost all interest in the dolls.

At 5½ years, he had good mastery of the use of pronouns. He had begun to feed himself satisfactorily. He saw a group photograph in the office and asked his father, "When are they coming out of the picture and coming in here?"

He was very serious about this. His father said something about the pictures they have at home on the wall. This disturbed John somewhat. He corrected his

father: "We have them *near* the wall" ("on" apparently meaning to him "above" or "on top").

When he saw a penny, he said, "Penny. That's where you play tenpins." He had been given pennies when he knocked over tenpins while playing with his father at home.

He saw a dictionary and said to his father, "That's where you left the money?"

Once his father had left some money in a dictionary and asked John to tell his mother about it.

His father whistled a tune and John instantly and correctly identified it as "Mendelssohn's violin concerto." Though he could speak of things as big or pretty, he was utterly incapable of making comparisons ("Which is the bigger line? Prettier face?" etc.).

In December, 1942, and January, 1943, he had two series of predominantly right-sided *convulsions*, with conjugate deviation of the eyes to the right and transient paresis of the right arm. Neurologic examination showed no abnormalities. His eyegrounds were normal. An electroencephalogram indicated "focal disturbance in the left occipital region," but "a good part of the record could not be read because of the continuous marked artefacts due to the child's lack of cooperation."

Case 11. Elaine C. was brought by her parents on April 12, 1939, at the age of 7 years, 2 months, because of "unusual development": "She doesn't adjust. She stops at all abstractions. She doesn't understand other children's games, doesn't retain interest in stories read to her, wanders off and walks by herself, is especially fond of animals of all kinds, occasionally mimics them by walking on all fours and making strange noises."

Elaine was born on February 3, 1932, at term. She appeared healthy, took feedings well, stood up at 7 months and walked at less than a year. She could say four words at the end of her first year but made no progress in linguistic development for the following four years. Deafness was suspected but ruled out. Because of a febrile illness at 13 months, her increasing difficulties were interpreted as possible postencephalitic behavior disorder. Others blamed the mother, who was accused of inadequate handling of the child. Feeble-mindedness was another diagnosis. For eighteen months, she was given anterior pituitary and thyroid preparations. "Some doctors," struck by Elaine's intelligent physiognomy, "thought she was a normal child and said that she would outgrow this."

At 2 years, she was sent to a nursery school, where "she independently went her way, not doing what the others did. She, for instance, drank the water and ate the plant when they were being taught to handle flowers." She developed an early interest in pictures of animals. Though generally restless, she could for hours concentrate on looking at such pictures, "especially engravings."

When she began to speak at about 5 years, she started out with complete though simple sentences that were "mechanical phrases" not related to the situation of the moment or related to it in a peculiar metaphorical way. She had an excellent vocabulary, knew especially the names and "classifications" of animals.

She did not use pronouns correctly, but used plurals and tenses well. She "could not use negatives but recognized their meaning when others used them."

There were many peculiarities in her relation to situations:

She can count by rote. She can set the table for numbers of people if the names are given her or enumerated in any way, but she cannot set the table "for three." If sent for a specific object in a certain place, she cannot bring it if it is somewhere else but still visible.

She was "frightened" by noises and anything moving toward her. She was so afraid of the vacuum cleaner that she would not even go near the closet where it was kept, and when it was used, ran out into the garage, covering her ears with her hands.

Elaine was the older of two children. Her father, aged 36, studied law and the liberal arts in three universities (including the Sorbonne), was an advertising copy writer, "one of those chronically thin persons, nervous energy readily expended." He was at one time editor of a magazine. The mother, aged 32, a "self-controlled, placid, logical person," had done editorial work for a magazine before marriage. The maternal grandfather was a newspaper editor, the grandmother was "emotionally unstable."

Elaine had been examined by a Boston psychologist at nearly 7 years of age. The report stated among other things:

Her attitude toward the examiner remained vague and detached. Even when annoyed by restraint, she might vigorously push aside a table or restraining hand with a scream, but she made no personal appeal for help or sympathy. At favorable moments she was competent in handling her crayons or assembling pieces to form pictures of animals. She could name a wide variety of pictures, including elephants, alligators, and dinosaurs. She used language in simple sentence structure, but rarely answered a direct question. As she plays, she repeats over and over phrases which are irrelevant to the immediate situation.

Physically the child was in good health. Her electroencephalogram was normal.

When examined in April, 1939, she shook hands with the physician upon request, without looking at him, then ran to the window and looked out. She automatically heeded the invitation to sit down. Her reaction to questions—after several repetitions—was an echolalia type reproduction of the whole question or, if it was too lengthy, of the end portion. She had no real contact with the persons in the office. Her expression was blank, though not unintelligent, and there were no communicative gestures. At one time, without changing her physiognomy, she said suddenly: "Fishes don't cry." After a time, she got up and left the room without asking or showing fear.

She was placed at the Child Study Home of Maryland, where she remained for three weeks and was studied by Drs. Eugenia S. Cameron and George Frankl. While there, she soon learned the names of all the children, knew the color of their eyes, the bed in which each slept, and many other details about them, but never entered into any relationship with them. When taken to the playgrounds, she was extremely upset and ran back to her room. She was very restless but when allowed to look at pictures, play alone with blocks, draw, or string beads, she could entertain herself contentedly for hours. Any noise, any interruption dis-

turbed her. Once, when on the toilet seat, she heard a knocking in the pipes; for several days thereafter, even when put on a chamber pot in her own room, she did not move her bowels, anxiously listening for the noise. She frequently ejaculated stereotyped phrases, such as, "Dinosaurs don't cry"; "Crayfish, sharks, fish, and rocks"; "Crayfish and forks live in children's tummies"; "Butterflies live in children's stomachs, and in their panties, too"; "Fish have sharp teeth and bite little children"; "There is war in the sky"; "Rocks and crags, I will kill" (grabbing her blanket and kicking it about the bed); "Gargoyles bite children and drink oil"; "I will crush old angle worm, he bites children" (gritting her teeth and spinning around in a circle, very excited); "Gargoyles have milk bags"; "Needle head. Pink wee-wee. Has a yellow leg. Cutting the dead deer. Poison deer. Poor Elaine. No tadpoles in the house. Men broke deer's leg" (while cutting the picture of a deer from a book); "Tigers and cats"; "Seals and salamanders"; "Bears and foxes."

A few excerpts from the observations follow:

Her language always has the same quality. Her speech is never accompanied by facial expression or gestures. She does not look into one's face. Her voice is peculiarly unmodulated, somewhat hoarse; she utters her words in an abrupt manner.

Her utterances are impersonal. She never uses the personal pronouns of the first and second persons correctly. She does not seem able to conceive the real meaning of these words.

Her grammar is inflexible. She uses sentences just as she has heard them, without adapting them grammatically to the situation of the moment. When she says, "Want me to draw a spider," she means, "I want you to draw a spider."

She affirms by repeating a question literally, and she negates by not complying.

Her speech is rarely communicative. She has no relation to children, has never talked to them, to be friendly with them, or to play with them. She moves among them like a strange being, as one moves between the pieces of furniture of a room.

She insists on the repetition of the same routine always. Interruption of the routine is one of the most frequent occasions for her outbursts. Her own activities are simple and repetitious. She is able to spend hours in some form of daydreaming and seems to be very happy with it. She is inclined to rhythmical movements which always are masturbatory. She masturbates more in periods of excitement than during calm happiness. . . . Her movements are quick and skilful.

Elaine was placed in a private school in Pennsylvania. In a recent letter, the father reported "rather amazing changes":

She is a tall, husky girl with clear eyes that have long since lost any trace of that animal wildness they periodically showed in the time you knew her. She speaks well on almost any subject, though with something of an odd intonation. Her conversation is still rambling talk, frequently with an amusing point, and it is only occasional, deliberate, and announced. She reads very well, but she reads fast, jumbling words, not pronouncing clearly, and not making proper emphases. Her range of information is really quite wide, and her memory almost infallible. It is obvious that Elaine is not "normal." Failure in anything leads to a feeling of defeat, of despair, and to a momentary fit of depression.

DISCUSSION

The eleven children (eight boys and three girls) whose histories have been briefly presented offer, as is to be expected, individual differences in the degree

of their disturbance, the manifestation of specific features, the family constellation, and the step-by-step development in the course of years. But even a quick review of the material makes the emergence of a number of essential common characteristics appear inevitable. These characteristics form a unique "syndrome," not heretofore reported, which seems to be rare enough, yet is probably more frequent than is indicated by the paucity of observed cases. It is quite possible that some such children have been viewed as feebleminded or schizophrenic. In fact, several children of our group were introduced to us as idiots or imbeciles, one still resides in a state school for the feebleminded, and two had been previously considered as schizophrenic.

The outstanding, "pathognomonic," fundamental disorder is the children's *inability to relate themselves* in the ordinary way to people and situations from the beginning of life. Their parents referred to them as having always been "self-sufficient"; "like in a shell"; "happiest when left alone"; "acting as if people weren't there"; "perfectly oblivious to everything about him"; "giving the impression of silent wisdom"; "failing to develop the usual amount of social awareness"; "acting almost as if hypnotized." This is not, as in schizophrenic children or adults, a departure from an initially present relationship; it is not a "withdrawal" from formerly existing participation. There is from the start an *extreme autistic aloneness* that, whenever possible, disregards, ignores, shuts out anything that comes to the child from the outside. Direct physical contact or such motion or noise as threatens to disrupt the aloneness is either treated "as if it weren't there" or, if this is no longer sufficient, resented painfully as distressing interference.

According to Gesell, the average child at 4 months of age makes an anticipatory motor adjustment by facial tension and shrugging attitude of the shoulders when lifted from a table or placed on a table; Gesell commented:

It is possible that a less definite evidence of such adjustment may be found as low down as the neonatal period. Although a habit must be conditioned by experience, the opportunity for experience is almost universal and the response is sufficiently objective to merit further observation and record.

This universal experience is supplied by the frequency with which an infant is picked up by his mother and other persons. It is therefore highly significant that almost all mothers of our patients recalled their astonishment at the children's *failure to assume at any time an anticipatory posture* preparatory to being picked up. One father recalled that his daughter (Barbara) did not for years change her physiognomy or position in the least when the parents, upon coming home after a few hours' absence, approached her crib talking to her and making ready to pick her up.

The average infant learns during the first few months to adjust his body to the posture of the person who holds him. Our children were not able to do so for two or three years. We had an opportunity to observe 38-month-old Herbert in such a situation. His mother informed him in appropriate terms that she was going to lift him up, extending her arms in his direction. There was no response.

She proceeded to take him up, and he allowed her to do so, remaining completely passive as if he were a sack of flour. It was the mother who had to do all the adjusting. Herbert was at that time of capable of sitting, standing, and walking.

Eight of the eleven children acquired the *ability to speak* either at the usual age or after some delay. Three (Richard, Herbert, Virginia) have so far remained "mute." In none of the eight "speaking" children has language over a period of years served to convey meaning to others. They were, with the exception of John F., capable of clear articulation and phonation. Naming of objects presented no difficulty; even long and unusual words were learned and retained with remarkable facility. Almost all the parents reported, usually with much pride, that the children had learned at an early age to repeat an inordinate number of nursery rhymes, prayers, lists of animals, the roster of presidents, the alphabet forward and backward, even foreign-language (French) lullabies. Aside from the recital of sentences contained in the ready-made poems or other remembered pieces, it took a long time before they began to put words together. Other than that, "language" consisted mainly of "naming," of nouns identifying objects, adjectives indicating colors, and numbers indicating nothing specific.

Their *excellent rote memory*, coupled with the inability to use language in any other way, often led the parents to stuff them with more and more verses, zoologic and botanic names, titles and composers of victrola record pieces, and the like. Thus, from the start, language—which the children did not use for the purpose of communication—was deflected in a considerable measure to a self-sufficient, semantically and conversationally valueless or grossly distorted memory exercise. To a child 2 or 3 years old, all these words, numbers, and poems ("questions and answers of the Presbyterian Catechism"; "Mendelssohn's violin concerto"; the Twenty-third Psalm"; a French lullaby; an encyclopedia index page) could hardly have more meaning than sets of nonsense syllables to adults. It is difficult to know for certain whether the stuffing as such has contributed essentially to the course of the psychopathologic condition. But it is also difficult to imagine that it did not cut deeply into the development of language as a tool for receiving and imparting meaningful messages.

As far as the communicative functions of speech are concerned, there is no fundamental difference between the eight speaking and the three mute children. Richard was once overheard by his boarding mother to say distinctly, "Good night." Justified skepticism about this observation was later dispelled when this "mute" child was seen in the office shaping his mouth in silent repetition of words when asked to say certain things. "Mute" Virginia—so her cottage mates insisted—was heard repeatedly to say, "Chocolate"; "Marshmallow"; "Mama"; "Baby."

When sentences are finally formed, they are for a long time mostly parrot-like repetitions of heard word combinations. They are sometimes echoed immediately, but they are just as often "stored" by the child and uttered at a later date. One may, if one wishes, speak of *delayed echolalia*. Affirmation is indicated by literal repetition of a question. "Yes" is a concept that it takes the children many years to acquire. They are incapable of using it as a general symbol of assent.

Donald learned to say "Yes" when his father told him that he would put him on his shoulders if he said "Yes." This word then came to "mean" only the desire to be put on his father's shoulders. It took many months before he could detach the word "yes" from this specific situation, and it took much longer before he was able to use it as a general term of affirmation.

The same type of *literalness* exists also with regard to prepositions. Alfred, when asked, "What is this picture about?" replied: "People are moving *about*."

John F. corrected his father's statement about pictures on the wall; the pictures were "*near* the wall." Donald T., requested to put something *down*, promptly put in on the floor. Apparently the meaning of a word becomes inflexible and cannot be used with any but the originally acquired connotation.

There is no difficulty with plurals and tenses. But the absence of spontaneous sentence formation and the echolalia type reproduction has, in every one of the eight speaking children, given rise to a peculiar grammatical phenomenon. *Personal pronouns are repeated just as heard*, with no change to suit the altered situation. The child, once told by his mother, "Now I will give you your milk," expresses the desire for milk in exactly the same words. Consequently, he comes to speak of himself always as "you," and of the person addressed as "I." Not only the words, but even the intonation is retained. If the mother's original remark has been made in form of a question, it is reproduced with the grammatical form and the inflection of a question. The repetition "Are you ready for your dessert?" means that the child is ready for his dessert. There is a set, not-to-be-changed phrase for every specific occasion. The pronominal fixation remains until about the sixth year of life, when the child gradually learns to speak of himself in the first person, and of the individual addressed in the second person. In the transitional period, he sometimes still reverts to the earlier form or at times refers to himself in the third person.

The fact that the children echo things heard does not signify that they "attend" when spoken to. It often takes numerous reiterations of a question or command before there is even so much as an echoed response. Not less than seven of the children were therefore considered as deaf or hard of hearing. There is an all-powerful need for being left undisturbed. Everything that is brought to the child from the outside, everything that changes his external or even internal environment, represents a dreaded intrusion.

Food is the earliest intrusion that is brought to the child from the outside. David Levy observed that affect-hungry children, when placed in foster homes where they are well treated, at first demand excessive quantities of food. Hilde Bruch, in her studies of obese children, found that overeating often resulted when affectionate offerings from the parents were lacking or considered unsatisfactory. Our patients, reversely, anxious to keep the outside world away, indicated this by the refusal of food. Donald, Paul ("vomited a great deal during the first year"), Barbara ("had to be tube-fed until 1 year of age"), Herbert, Alfred, and John presented severe feeding difficulty from the beginning of life. Most of them, after an unsuccessful struggle, constantly interfered with, finally gave up the struggle and of a sudden began eating satisfactorily.

Another intrusion comes from *loud noises and moving objects*, which are therefore reacted to with horror. Tricycles, swings, elevators, vacuum cleaners, running water, gas burners, mechanical toys, egg beaters, even the wind could on occasions bring about a major panic. One of the children was even afraid to go near the closet in which the vacuum cleaner was kept. Injections and examinations with stethoscope or otoscope created a grave emotional crisis. Yet it is not the noise or motion itself that is dreaded. The disturbance comes from the noise or motion that intrudes itself, or threatens to intrude itself, upon the child's aloneness. The child himself can happily make as great a noise as any that he dreads and move objects about to his heart's desire.

But the child's noises and motions and all of his performances are as *monotonously repetitious* as are his verbal utterances. There is a marked limitation in the variety of his spontaneous activities. The child's behavior is governed by an *anxiously obsessive desire for the maintenance of sameness* that nobody but the child himself may disrupt on rare occasions. Changes of routine, of furniture arrangement, of a pattern, of the order in which everyday acts are carried out, can drive him to despair. When John's parents got ready to move to a new home, the child was frantic when he saw the moving men roll up the rug in his room. He was acutely upset until the moment when, in the new home, he saw his furniture arranged in the same manner as before. He looked pleased, all anxiety was suddenly gone, and he went around affectionately patting each piece. Once blocks, beads, sticks have been put together in a certain way, they are always regrouped in exactly the same way, even though there was no definite design. The children's memory was phenomenal in this respect. After the lapse of several days, a multitude of blocks could be rearranged in precisely the same unorganized pattern, with the same color of each block turned up, with each picture or letter on the upper surface of each block facing in the same direction as before. The absence of a block or the presence of a supernumerary block was noticed immediately, and there was an imperative demand for the restoration of the missing piece. If someone removed a block, the child struggled to get it back, going into a panic tantrum until he regained it, and then promptly and with sudden calm after the storm returned to the design and replaced the block.

This insistence on sameness led several of the children to become greatly disturbed upon the sight of anything broken or incomplete. A great part of the day was spent in demanding not only the sameness of the wording of a request but also the sameness of the sequence of events. Donald would not leave his bed after his nap until after he had said, "Boo, say 'Don, do you want to get down?'" and the mother had complied. But this was not all. The act was still not considered completed. Donald would continue, "Now say 'All right.'" Again the mother had to comply, or there was screaming until the performance was completed. All of this ritual was an indispensable part of the act of getting up after a nap. Every other activity had to be completed from beginning to end in the manner in which it had been started originally. It was impossible to return from a walk without having covered the same ground as had been covered before. The sight of a broken crossbar on a garage door on his regular daily tour so upset Charles that he kept

talking and asking about it for weeks on end, even while spending a few days in a distant city. One of the children noticed a crack in the office ceiling and kept asking anxiously and repeatedly who had cracked the ceiling, not calmed by any answer given her. Another child, seeing one doll with a hat and another without a hat, could not be placated until the other hat was found and put on the doll's head. He then immediately lost interest in the two dolls; sameness and completeness had been restored, and all was well again.

The dread of change and incompleteness seems to be a major factor in the explanation of the monotonous repetitiveness and the resulting *limitation in the variety of spontaneous activity*. A situation, a performance, a sentence is not regarded as complete if it is not made up of exactly the same elements that were present at the time the child was first confronted with it. If the slightest ingredient is altered or removed, the total situation is no longer the same and therefore is not accepted as such, or it is resented with impatience or even with a reaction of profound frustration. The inability to experience wholes without full attention to the constituent parts is somewhat reminiscent of the plight of children with specific reading disability who do not respond to the modern system of configurational reading instruction but must be taught to build up words from their alphabetic elements. This is perhaps one of the reasons why those children of our group who were old enough to be instructed in reading immediately became excessively preoccupied with the "spelling" of words, or why Donald, for example, was so disturbed over the fact that "light" and bite," having the same phonetic quality, should be spelled differently.

Objects that do not change their appearance and position, that retain their sameness and never threaten to interfere with the child's aloneness, are readily accepted by the autistic child. He has a good *relation to objects*; he is interested in them, can play with them happily for hours. He can be very fond of them, or get angry at them if, for instance, he cannot fit them into a certain space. When with them, he has a gratifying sense of undisputed power and control. Donald and Charles began in the second year of life to exercise this power by spinning everything that could be possibly spun and jumping up and down in ecstasy when they watched the objects whirl about. Frederick "jumped up and down in great glee" when he bowled and saw the pins go down. The children sensed and exercised the same power over their own bodies by rolling and other rhythmic movements. These actions and the accompanying ecstatic fervor strongly indicate the presence of *masturbatory orgasmic gratification*.

The children's *relation to people* is altogether different. Every one of the children, upon entering the office, immediately went after blocks, toys, or other objects, without paying the least attention to the persons present. It would be wrong to say that they were not aware of the presence of persons. But the people, so long as they left the child alone, figured in about the same manner as did the desk, the bookshelf, or the filing cabinet. When the child was addressed, he was not bothered. He had the choice between not responding at all or, if a question was repeated too insistently, "getting it over with" and continuing with whatever he had been doing. Comings and goings, even of the mother, did not seem

to register. Conversation going on in the room elicited no interest. If the adults did not try to enter the child's domain, he would at times, while moving between them, gently touch a hand or a knee as on other occasions he patted the desk or the couch. But he never looked into anyone's face. If an adult forcibly intruded himself by taking a block away or stepping on an object that the child needed, the child struggled and became angry with the hand or the foot, which was dealt with per se and not as a part of a person. He never addressed a word or a look to the owner of the hand or foot. When the object was retrieved, the child's mood changed abruptly to one of placidity. When pricked, he showed fear of the *pin* but not of the person who pricked him.

The relation to the members of the household or to other children did not differ from that to the people at the office. Profound aloneness dominates all behavior. The father or mother or both may have been away for an hour or a month; at their homecoming, there is no indication that the child has been even aware of their absence. After many outbursts of frustration, he gradually and reluctantly learns to compromise when he finds no way out, obeys certain orders, complies in matters of daily routine, but always strictly insists on the observance of his rituals. When there is company, he moves among the people "like a stranger" or, as one mother put it, "like a foal who had been let out of an enclosure." When with other children, he does not play with them. He plays alone while they are around, maintaining no bodily, physiognomic, or verbal contact with them. He does not take part in competitive games. He just is there, and if sometimes he happens to stroll as far as the periphery of a group, he soon removes himself and remains alone. At the same time, he quickly becomes familiar with the names of all the children of the group, may know the color of each child's hair, and other details about each child.

There is a far better relationship with pictures of people than with people themselves. Pictures, after all, cannot interfere. Charles was affectionately interested in the picture of a child in a magazine advertisement. He remarked repeatedly about the child's sweetness and beauty. Elaine was fascinated by pictures of animals but would not go near a live animal. John made no distinction between real and depicted people. When he saw a group photograph, he asked seriously when the people would step out of the picture and come into the room.

Even though most of these children were at one time or another looked upon as feeble-minded, they are all unquestionably endowed with good *cognitive potentialities*. They all have strikingly intelligent physiognomies. Their faces at the same time give the impression of *serious-mindedness* and, in the presence of others, an anxious *tenseness*, probably because of the uneasy anticipation of possible interference. When alone with objects, there is often a placid smile and an expression of beatitude, sometimes accompanied by happy though monotonous humming and singing. The astounding vocabulary of the speaking children, the excellent memory for events of several years before, the phenomenal rote memory for poems and names, and the precise recollection of complex patterns and sequences, bespeak good intelligence in the sense in which this word

is commonly used. Binet or similar testing could not be carried out because of limited accessibility. But all the children did well with the Seguin form board.

✓ *Physically*, the children were essentially normal. Five had relatively large heads. Several of the children were somewhat clumsy in gait and gross motor performances, but all were very skilful in terms of finer muscle coordination. Electroencephalograms were normal in the case of all but John, whose anterior fontanelle did not close until he was 2½ years old, and who at 5¼ years had two series of predominantly right-sided convulsions. Frederick had a supernumerary nipple in the left axilla; there were no other instances of congenital anomalies.

There is one other very interesting common denominator in the backgrounds ✓ of these children. *They all come of highly intelligent families.* Four fathers are psychiatrists, one is a brilliant lawyer, one a chemist and law school graduate employed in the government Patent Office, one a plant pathologist, one a professor of forestry, one an advertising copy writer who has a degree in law and has studied in three universities, one is a mining engineer, and one a successful business man. Nine of the eleven mothers are college graduates. Of the two who have only high-school education, one was secretary in a pathology laboratory, and the other ran a theatrical booking office in New York City before marriage. Among the others, there was a free-lance writer, a physician, a psychologist, a graduate nurse, and Frederick's mother was successively a purchasing agent, the director of secretarial studies in a girls' school, and a teacher of history. Among the grandparents and collaterals there are many physicians, scientists, writers, journalists, and students of art. All but three of the families are represented either in *Who's Who in America* or in *American Men of Science*, or in both.

Two of the children are Jewish, the others are all of Anglo-Saxon descent. ✓ Three are "only" children, five are the first-born of two children in their respective families, one is the oldest of three children, one is the younger of two, and one the youngest of three.

COMMENT

The combination of extreme autism, obsessiveness, stereotypy, and echolalia brings the total picture into relationship with some of the basic schizophrenic phenomena. Some of the children have indeed been diagnosed as of this type at one time or another. But in spite of the remarkable similarities, the condition differs in many respects from all other known instances of childhood schizophrenia.

First of all, even in cases with the earliest recorded onset of schizophrenia, including those of De Sanctis' dementia praecocissima and of Heller's dementia infantilis, the first observable manifestations were preceded by at least two years of essentially average development; the histories specifically emphasize a more or less gradual *change* in the patients' behavior. The children of our group have ✓ all shown their extreme aloneness from the very beginning of life, not responding to anything that comes to them from the outside world. This is most char-

acteristically expressed in the recurrent report of failure of the child to assume an anticipatory posture upon being picked up, and of failure to adjust the body to that of the person holding him.

Second, our children are able to establish and maintain an excellent, purposeful, and "intelligent" relation to objects that do not threaten to interfere with their aloneness, but are from the start anxiously and tensely impervious to people, with whom for a long time they do not have any kind of direct affective contact. If dealing with another person becomes inevitable, then a temporary relationship is formed with the person's hand or foot as a definitely detached object, but not with the person himself.

All of the children's activities and utterances are governed rigidly and consistently by the powerful desire for aloneness and sameness. Their world must seem to them to be made up of elements that, once they have been experienced in a certain setting or sequence, cannot be tolerated in any other setting or sequence; nor can the setting or sequence be tolerated without all the original ingredients in the identical spatial or chronologic order. Hence the obsessive repetitiousness. Hence the reproduction of sentences without altering the pronouns to suit the occasion. Hence, perhaps, also the development of a truly phenomenal memory that enables the child to recall and reproduce complex "nonsense" patterns, no matter how unorganized they are, in exactly the same form as originally construed.

Five of our children have by now reached ages between 9 and 11 years. Except for Vivian S., who has been dumped in a school for the feeble-minded, they show a very interesting course. The basic desire for aloneness and sameness has remained essentially unchanged, but there has been a varying degree of emergence from solitude, an acceptance of at least some people as being "within the child's sphere of consideration, and a sufficient increase in the number of experienced patterns to refute the earlier impression of extreme limitation of the child's ideational content. One might perhaps put it this way: While the schizophrenic tries to solve his problem by stepping out of a world of which he has been a part and with which he has been in touch, our children gradually *compromise* by extending cautious feelers into a world in which they have been total strangers from the beginning. Between the ages of 5 and 6 years, they gradually abandon the echolalia and learn spontaneously to use personal pronouns with adequate reference. Language becomes more communicative, at first in the sense of a question-and-answer exercise, and then in the sense of greater spontaneity of sentence formation. Food is accepted without difficulty. Noises and motions are tolerated more than previously. The panic tantrums subside. The repetitiousness assumes the form of obsessive preoccupations. Contact with a limited number of people is established in a twofold way: people are included in the child's world to the extent to which they satisfy his needs, answer his obsessive questions, teach him how to read and to do things. Second, though people are still regarded as nuisances, their questions are answered and their commands are obeyed reluctantly, with the implication that it would be best to get these interferences over with, the sooner to be able to return to the still much desired

aloneness. Between the ages of 6 and 8 years, the children begin to play in a group, still never *with* the other members of the play group, but at least on the periphery *alongside* the group. Reading skill is acquired quickly, but the children read monotonously, and a story or a moving picture is experienced in unrelated portions rather than in its coherent totality. All of this makes the family feel that, in spite of recognized "difference" from other children, there is progress and improvement.

It is not easy to evaluate the fact that all of our patients have come of highly intelligent parents. This much is certain, that there is a great deal of obsessiveness in the family background. The very detailed diaries and reports and the frequent remembrance, after several years, that the children had learned to recite twenty-five questions and answers of the Presbyterian Catechism, to sing thirty-seven nursery songs, or to discriminate between eighteen symphonies, furnish a telling illustration of parental obsessiveness.

One other fact stands out prominently. In the whole group, there are very few really warmhearted fathers and mothers. For the most part, the parents, grandparents, and collaterals are persons strongly preoccupied with abstractions of a scientific, literary, or artistic nature, and limited in genuine interest in people. Even some of the happiest marriages are rather cold and formal affairs. Three of the marriages were dismal failures. The question arises whether or to what extent this fact has contributed to the condition of the children. The children's aloneness from the beginning of life makes it difficult to attribute the whole picture exclusively to the type of the early parental relations with our patients.

We must, then, assume that these children have come into the world with innate inability to form the usual, biologically provided affective contact with people, just as other children come into the world with innate physical or intellectual handicaps. If this assumption is correct, a further study of our children may help to furnish concrete criteria regarding the still diffuse notions about the constitutional components of emotional reactivity. For here we seem to have pure-culture examples of *inborn autistic disturbances of affective contact*.*

* Since the completion of this paper, 2 more cases of inborn autistic disturbance of affective contact have come under our observation.