

BULLETIN of the MENNINGER CLINIC

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PROFESSOR JEAN PIAGET AT THE MENNINGER FOUNDATION

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PROFESSOR PIAGET'S VISIT

GARDNER MURPHY, Ph.D.

The decision to invite Professor Jean Piaget,* of the University of Geneva, to visit The Menninger Foundation for three weeks as a Sloan Professor, was prompted partly by his wide reputation as a psychologist and partly by the feeling that the psychiatric community as a whole would find something stimulating and valuable in his lectures and seminars, and above all in personal contact with him. We knew that we ran a risk because Professor Piaget does not speak English. His psychological system is, moreover, complex, and expressed in symbols quite different from the symbols which those with a clinical interest are likely to use. Several of us, especially Riley Gardner and I and our collaborators, were sure that he would be of deep significance to our current experimental studies in the field of perception; and the clinical psychologists working with children were another group eager for the contact. As it worked out, he was able to make wide and good contacts and to become a close friend to those who had the opportunity to meet him in easy and unstructured situations. Roaming with him, for example, by Lake Shawnee, as he kept his eyes fixed on the soil while he looked for tiny flowers, and watching his face light up as some of the differences between the tradition of the French-speaking world and that of the English-speaking world became poignantly clear through the whimsy of his conversational

* Visiting Sloan Professor March 2 through March 31, 1961, in the Menninger

delicacies, enabled us to see him in a dimension other than that of science.

As far as science was concerned, it was a rich feast. There were three public lectures represented here in the *Bulletin of the Menninger Clinic*; a series of discussions of attention and perception conducted by Riley Gardner and his collaborators; and conversations with John Santos and me, as well as special meetings called to meet the psychoanalysts and psychoanalytic candidates.

I should like to complete my comment on his visit with two stories, both about pipes. The first has to do with the subject of his third lecture on "Will and Action." I said that since his first two lectures were to deal with the general background of his system of studies in human intellectual development and the second one with affectivity, I wondered if he would give us a talk on the "will." He looked a little grave, and then he said, "Well, this is one topic on which I have never done any research; my ideas are derived entirely from my conversations with my pipe." We watched his face awhile, and saw things taking shape there. "Yes," he said, "I will talk about the will." The reader of the third lecture will see how shrewdly he took up the theme in William James' conception of the will and developed it to his own superb conclusion. The other story is more personal. He was obviously enjoying his pipe and greatly hating to be limited to the three pipes a day which his physician regarded as his outside limit. I said "Why not fill up your pipe only halfway and smoke six half-pipes a day?" He looked astonished, then confused, then his face became clear; "Why yes," he said, "that really makes sense." All the rest of his time in Topeka—and I hope forever—he has been a six half-pipe-a-day smoker.

I will bring this little note to an end by thanking all those who made the arrangements for a plan which was so rich in satisfaction to me personally, noting especially the help of Mrs. Denton in preparing French editions of the lectures delivered here in French, and to Mrs. Pitsa Hartocollis for the active work of translating into English each lecture as it was delivered, and for sharing with me in the preparation of these notes dealing with this memorable episode of the professor and patron from Geneva.

PIAGET, THE MAN AND TEACHER

PITSA HARTOCOLLIS

The gentleman with the rosy cheeks and the white hair riding on his bike is a familiar figure to the students of the Institute Jean Jacques Rousseau, which includes the School of Psychology at the University of Geneva. He is the maître, Professor Piaget—the "patron," as I, along with the rest of his students and co-workers, sooner or later, learned to call him.

As he passed, all conversation would drop immediately, everybody's eyes turning and staring at the big man, his imposing figure dressed in the same shapeless dark suit, his hair flying magnificently on both sides of a French beret, the face preoccupied, with hardly any indication that he had noticed us at all.

An awesome distance existed between him and us, ordinary students of his, at the beginning. We attended his lectures and we were part of the group that ran the experiments of the "patron" in the laboratories of the Institute, yet we knew little of the man who was our teacher and patron. Actually, it was Bärbel Inhelder who directed our work, as far as we could tell. Piaget would be there, at our weekly discussion seminars, sitting comfortably in his chair; and as our excitement mounted, he would take his pipe away from his lips and say jovially: "Let's all have a smoke and discuss some of the points we touched in our lectures."

But Piaget would never come any closer to us, unless we took the initiative and went to him. One had to overcome his sense of smallness and become for a moment presumptuous, if he wished to face the patron alone. And then to his surprise, one would discover that the man was neither distant nor difficult to be with—when alone with you, Piaget was always warm and gentle and alert, ready to take and give, a wise and friendly man.

The moment you enroll at his school in Geneva you are taken aback by the long list of the master's books, all of which you are expected to read and be examined on before you graduate. And it takes no time to realize that the reading is not easy. But as you start attending his lectures, you feel immediately relieved. For he impresses you with the clarity of his thought and the forcefulness of his arguments, the way he questions every issue and resolves every question—at least you have the feeling that all questions are resolved, so powerful is Piaget's logic or, perhaps,

his conviction in the logic of his work. And his enthusiasm becomes often excitement that electrifies his students, causing them to identify themselves with his ideas and to further them in research.

All began by accident—or so Piaget would have us believe—when more than forty years ago, Doctor Simon of the Binet Laboratory asked him to standardize a series of reasoning tests for the children of Paris. As he whimsically recalls, he started the work “without much enthusiasm, just to try anything.” But soon he was deeply involved in the study of children and their mental development—work that he was soon to continue in Geneva under the appreciative sponsorship of Professor Claparède.

Although an early student of Freud and for a time member of Bleuler's Psychiatric Clinic in Zurich, Piaget was never a clinician, having avoided carefully any implication of pathology in his work. His interest in children remained impersonal, the interest of a scientist toward the subjects of his observation or experimentation, whether these happened to be a rare albino sparrow (as in his first paper, written and published when Piaget was only ten years old), a certain species of mollusks (the subject matter of his doctoral thesis at the age of twenty-two), or the children of Paris and Geneva (the subject of his lifelong research in psychology). That is not to imply, however, that Piaget is indifferent to children as such. For he is charmed by children as they are charmed by him—and I had the rare pleasure to witness all this come alive during his recent visit to Topeka, when he assumed the role of grandfather for my three little ones, so gracefully and effectively that the latter still refer to him as the *papou* (modern Greek for grandfather).

It may shock some of my former colleagues in Geneva, who like myself used to look upon him as an Olympian father, if they hear me now say that Piaget is really a child—simple and spontaneous like a child, with the unspoiled heart and the open mind of a child, infinitely sure of his ideas and importance, and at the same time insecure about himself, egocentric and helpless like a child. Add to all this the genius of an observer, and you may understand Piaget, the man who took upon himself to explain the order of the world in terms of a child's mental structure.

FOUR DISCUSSIONS WITH PROFESSOR PIAGET*

RILEY W. GARDNER, Ph.D.

It is generally known that Jean Piaget's work on the development of intelligence, moral judgment, and conceptions of causality is both distinguished and vast in scope. It is not so well known that Professor Piaget has directed laboratory studies extending over more than twenty years that may significantly alter and expand our understanding of perception and its relationship to intelligence.

His approach to perception is characteristically unique and profoundly stimulating. In his view, perception, unlike intelligence, involves apparatus that function in “statistical” ways. Perception, therefore, never attains the complete reversibility characteristic of adult thought. Perception is not only inferior to, but subordinate to higher mental processes. Perception is biased, for example, by certain inherent illusions that are compensated for in part by the emergence of ever more refined patterns of attention deployment in the course of development. Thus, in his view, attention and its regulation are major links between higher mental operations and perception.

Here we see a direct link between Piaget's view and Freud's conception that consciousness of stimulation (*i.e.*, perception) occurs when attentional energy is recruited to an ongoing process in the perceptual apparatus. Piaget's view of perception involves still other basic assumptions, however, that are unique: *e.g.*, that all perception of multiple stimuli involves a special form of *relativity*.

The relativity of perception has been experimentally verified and can be simply exemplified as follows: if one attends equally to two otherwise identical objects of different sizes, the smaller will be perceived as smaller than it is, the larger as larger than it is. The degree of this contrast effect is a function of the relative magnitudes of the stimuli. Some of Piaget's most brilliant work is contained in the experimental studies of illusions showing the curves that describe these functions. These are described in the *Archives de Psychologie* (Geneva) from 1942 to the present. They are summarized in *Les mecanismes perceptifs*, published in 1961. He has successfully predicted, for example, the size relationships

* These discussions, held in the William James Building, included about fifteen members of the Research Department. Mrs. Pitsa Hartocollis, who earlier studied with Professor Piaget, was both interpreter and participant in these discussions.

between parts of classical illusions that will produce maximal and minimal illusion effects. He has also shown that there is a temporal maximum in such effects, *e.g.*, that the relational effects vary systematically with viewing time. From these simple examples, one can envision the wide-ranging implications of the "law of relative centrations," which summarizes some of these major assumptions, for our understanding of perceptual development.

Piaget's brilliant theoretical and experimental work on attention and perception had already proved uniquely useful to the understanding of individual differences in these functions. Some of our own results could, in fact, be explained only by invoking his law of relative centrations. Thus, it was against a background of earlier research and correspondence with Professor Piaget about it that the first discussions took place. The first three meetings were detailed discussions of the applicability of his theories to results of individual difference studies. In these discussions, he seemed particularly interested in investigations showing individual consistencies in extensiveness of attention deployment, which may produce predictable differences in the basic attentional-perceptual phenomena he was among the first to describe.

In 1959, Professor Piaget, with Bärbel Inhelder, published *La genèse des structures logiques élémentaires*, a monograph dealing with the development of concept formation in the form of classification and seriation. In the monograph, Piaget and Inhelder pointed to two basic factors in the development of effective concept formation: comprehension and extension. His suggestions and comments concerning individual differences in concept formation were, therefore, particularly enlightening.

In the final session, Professor Piaget described important unpublished studies of the development of imagery. Since he specifically requested that the preliminary experimental results not yet be made public, no reference will be made to them here. It can be said, however, that his general point of view concerning imagery raises some major questions concerning thought functioning during early childhood. He expressed the opinion, for example, that prior to verbalization, infants' dreams employ action schemata in the form of kinesthetic motor patterns, rather than visual imagery. This, of course, is in keeping with his view that higher mental operations are built on a foundation of early *sensori-motor* schemata. His intriguing hypothesis concerning infants' dreams seemed in direct opposition to the psychoanalytic view, which emphasizes visual

imagery in early childhood thinking. The ingenuity of method that has characterized Professor Piaget's approach to the development of mental operations is also apparent in the studies of imagery. And, as one might anticipate, the experiments are closely linked to the general theme of all his work: the development of mental functioning through a series of stages to the effective operational level characteristic of adult thought. The thematic unity of Professor Piaget's work in superficially different areas of cognition—*e.g.*, intelligence, attention, perception, affect organization—is, in fact, one of its most remarkable qualities. The discussions with him reinforced our impression that he sees through the superficial variegation of behavior to some core principles of mental development.

The basic insights into mental development provided by Professor Piaget's work have long been appreciated. They are now being put to large-scale practical use in a rapidly expanding group of researches in several countries. For example, intelligence tests based on his findings are currently being developed by Canadian researchers. The discussion of this work was illuminated by the intriguing examples Professor Piaget presented to show the unique value of tests of stages of mental development for assessment of a child's intellectual potential.

This brief description of a series of delightful and stimulating discussions would be grossly incomplete without reference to the remarkable clarity, incisiveness, and abstractness of Professor Piaget's thinking and his great personal charm. One is impressed with his keen but gentle wit, kindly thoughtfulness, and absolute enjoyment of bits of information that may further clarify our understanding of cognition. The rare combination of creative originality and disciplined abstraction he applies to the problems of mental development may account in part for one of his most remarkable qualities: the sure, clear, almost uncanny capacity to know in advance where investigations will lead and what they will show about mental development. But perhaps one should simply appreciate, rather than attempt to explain, the particular qualities of genius.

THE STAGES OF THE INTELLECTUAL DEVELOPMENT OF THE CHILD*

JEAN PIAGET, D.Sc.

A consideration of the stages of the development of intelligence should be preceded by asking the question, What is intelligence? Unfortunately, we find ourselves confronted by a great number of definitions. For Claparède, intelligence is an adaptation to new situations. When a situation is new, when there are no reflexes, when there are no habits to rely on, then the subject is obliged to search for something new. That is to say, Claparède defines intelligence as groping, as feeling one's way, trial-and-error behavior. We find this trial-and-error behavior in all levels of intelligence, even at the superior level, in the form of hypothesis testing. As far as I am concerned, this definition is too vague, because trial and error occurs in the formation of habits, and also in the earliest established reflexes: when a newborn baby learns to suck.

Karl Bühler defines intelligence as an act of immediate comprehension; that is to say, an insight. Bühler's definition is also very precise, but it seems to me too narrow. I know that when a mathematician solves a problem, he ends by having an insight, but up to that moment he feels, or gropes for, his way; and to say that the trial-and-error behavior is not intelligent and that intelligence starts only when he finds the solution to the problem, seems a very narrow definition. I would, therefore, propose to define intelligence not by a static criterion, as in previous definitions, but by the direction that intelligence follows in its evolution, and then I would define intelligence as a form of equilibration, or forms of equilibration, toward which all cognitive functions lead.

But I must first define equilibration. Equilibration in my vocabulary is not an exact and automatic balance, as it would be in Gestalt theory; I define equilibration principally as a compensation for an external disturbance.

When there is an external disturbance, the subject succeeds in compensating for this by an activity. The maximum equilibration is thus the maximum of the activity, and not a state of rest. It is a mobile equilibration, and not an immobile one. So equilibration is defined as compensation; compensation is the annulling of a transformation by an inverse

* The three lectures by Doctor Piaget contained in this issue of the *Bulletin* were presented as a series to the Menninger School of Psychiatry March 6, 13 and 22, 1961.

transformation. The compensation which intervenes in equilibration implies the fundamental idea of reversibility, and this reversibility is precisely what characterizes the operations of the intelligence. An operation is an internalized action, but it is also a reversible action. But an operation is never isolated; it is always subordinated to other operations; it is part of a more inclusive structure. Consequently, we define intelligence in terms of operations, coordination of operations.

Take, for example, an operation like addition: Addition is a material action, the action of reuniting. On the other hand, it is a reversible action, because addition may be compensated by subtraction. Yet addition leads to a structure of a whole. In the case of numbers, it will be the structure that the mathematicians call a "group." In the case of addition of classes which intervene in the logical structure it will be a more simple structure that we will call a grouping, and so on.

Consequently, the study of the stages of intelligence is first a study of the formation of operational structures. I shall define every stage by a structure of a whole, with the possibility of its integration into succeeding stages, just as it was prepared by preceding stages. Thus, I shall distinguish four great stages, or four great periods, in the development of intelligence: first, the sensori-motor period before the appearance of language; second, the period from about two to seven years of age, the preoperational period which precedes real operations; third, the period from seven to 12 years of age, a period of concrete operations (which refers to concrete objects); and finally after 12 years of age, the period of formal operations, or positional operations.

Sensori-Motor Stage

Before language develops, there is behavior that we can call intelligent. For example, when a baby of 12 months or more wants an object which is too far from him, but which rests on a carpet or blanket, and he pulls it to get to the object, this behavior is an act of intelligence. The child uses an intermediary, a means to get to his goal. Also, getting to an object by means of pulling a string when the object is tied to the string, or when the child uses a stick to get the object, are acts of intelligence. They demonstrate in the sensori-motor period a certain number of stages, which go from simple reflexes, from the formation of the first habits, up to the coordination of means and goals.

Remarkable in this sensori-motor stage of intelligence is that there are already structures. Sensori-motor intelligence rests mainly on actions, on

movements and perceptions without language, but these actions are coordinated in a relatively stable way. They are coordinated under what we may call schemata of action. These schemata can be generalized in actions and are applicable to new situations. For example, pulling a carpet to bring an object within reach constitutes a schema which can be generalized to other situations when another object rests on a support. In other words, a schema supposes an incorporation of new situations into the previous schemata, a sort of continuous assimilation of new objects or new situations to the actions already schematized. For example, I presented to one of my children an object completely new to him—a box of cigarettes, which is not a usual toy for a baby. The child took the object, looked at it, put it in his mouth, shook it, then took it with one hand and hit it with the other hand, then rubbed it on the edge of the crib, then shook it again, and gave the impression of trying to see if there were noise. This behavior is a way of exploring the object, of trying to understand it by assimilating it to schemata already known. The child behaves in this situation as he will later in Binet's famous vocabulary test, when he defines by usage, saying, for instance, that a spoon is for eating, and so on.

But in the presence of a new object, even without knowing how to talk, the child knows how to assimilate, to incorporate this new object into each of his already developed schemata which function as practical concepts. Here is a structuring of intelligence. Most important in this structuring is the base, the point of departure of all subsequent operational constructions. At the sensori-motor level, the child constructs the schema of the permanent object.

The knowledge of the permanent object starts at this point. The child is not convinced at the beginning that when an object disappears from view, he can find it again. One can verify by tests that object permanence is not yet developed at this stage. But there is there the beginning of a subsequent fundamental idea which starts being constructed at the sensori-motor level. This is also true of the construction of the ideas of space, of time, of causality. What is being done at the sensori-motor level concerning all the foregoing ideas will constitute the substructure of the subsequent, fully achieved ideas of permanent objects, of space, of time, of causality.

In the formation of these substructures at the sensori-motor level, it is very interesting to note the beginning of a *reversibility*, not in thought, since there is not yet representation in thought, but in action itself. For

example, the formation of the conception of space at the sensori-motor stage leads to an amazing decentration if one compares the conception of space at the first weeks of the development with that at one and one-half to two years of age. In the beginning there is not one space which contains all the objects, including the child's body itself; there is a multitude of spaces which are not coordinated: there are the buccal space, the tactilokinesthetic space, the visual and auditory spaces; each is separate and each is centered essentially on the body of the subject and on actions. After a few months, however, after a kind of Copernican evolution, there is a total reversal, a decentration such that space becomes homogenous, a one-and-only space that envelops the others. Then space becomes a container that envelops all objects, including the body itself; and after that, space is mainly coordinated in a structure, a coordination of positions and displacements, and these constitute what the geometers call a "group"; that is to say, precisely a reversible system. One may move from A to B, and may come back from B to A; there is the possibility of returning, of reversibility. There is also the possibility of making detours and combinations which give a clue to what the subsequent operations will be when thought will supersede the action itself.

Pre-Operational Stage

From one and one-half to two years of age, a fundamental transformation in the evolution of intelligence takes place in the appearance of symbolic functions. Every action of intelligence consists in manipulating significations (or meanings) and whenever (or wherever) there is significations, there are on the one hand the "significants" and on the other the "significates." This is true in the sensori-motor level, but the only significants that intervene there are perceptual signs or signals (as in conditioning) which are undifferentiated in regard to the significate; for example, a perceptual cue, like distance, which will be a cue for the size of the distant object, or the apparent size of an object, which will be the cue for the distance of the object. There, perhaps, both indices are different aspects of the same reality, but they are not yet differentiated significants. At the age of one and one-half to two years a new class of significants arises, and these significants are differentiated in regard to their significates. These differentiations can be called symbolic function. The appearance of symbols in a children's game is an example of the appearance of new significants. At the sensori-motor level the games are nothing but exercises; now they become symbolic play, a play of fiction; these games

consist in representing something by means of something else. Another example is the beginning of delayed imitation, an imitation that takes place not in the presence of the original object but in its absence, and which consequently constitutes a kind of symbolization or mental image.

At the same time that symbols appear, the child acquires language; that is to say, there is the acquisition of another phase of differentiated significants, verbal signals, or collective signals. This symbolic function then brings great flexibility into the field of intelligence. Intelligence up to this point refers to the immediate space which surrounds the child and to the present perceptual situation; thanks to language, and to the symbolic functions, it becomes possible to invoke objects which are not present perceptually, to reconstruct the past, or to make projects, plans for the future, to think of objects not present but very distant in space—in short, to span spatio-temporal distances much greater than before.

But this new stage, the stage of representation of thought which is superimposed on the sensori-motor stage, is not a simple extension of what was referred to at the previous level. Before being able to prolong, one must in fact reconstruct, because behavior in words is a different thing from representing something in thought. When a child knows how to move around in his house or garden by following the different successive cues around him, it does not mean that he is capable of representing or reproducing the total configuration of his house or his garden. To be able to represent, to reproduce something, one must be capable of reconstructing this group of displacements, but at a new level, that of the representation of the thought.

I recently made an amusing test with Nel Szeminska. We took children of four to five years of age who went to school by themselves and came back home by themselves, and asked them if they could trace the way to school and back for us, not in design, which would be too difficult, but like a construction game, with concrete objects. We found that they were not capable of representation; there was a kind of motor-memory, but it was not yet a representation of a whole—the group of displacements had not yet been reconstructed on the plan of the representation of thought. In other words, the operations were not yet formed. There are representations which are internalized actions, but actions still centered on the body itself, on the activity itself. These representations do not allow the objective combinations, the decentrated combinations that the operations would. The

actions are centered on the body. I used to call this egocentrism; but it is better thought of as lack of reversibility of action.

At this level, the most certain sign of the absence of operations which appear at the next stage is the absence of the knowledge of conservation. In fact, an operation refers to the transformation of reality. The transformation is not of the whole, however; something constant is always untransformed. If you pour a liquid from one glass to another there is transformation; the liquid changes form, but its liquid property stays constant. So at the pre-operational level, it is significant from the point of view of the operations of intelligence that the child has not yet a knowledge of conservation. For example, in the case of liquid, when the child pours it from one bottle to the other, he thinks that the quantity of the liquid has changed. When the level of the liquid changes, the child thinks the quantity has changed—there is more or less in the second glass than in the first. And if you ask the child where the larger quantity came from, he does not answer this question. What is important for the child is that perceptually it is not the same thing any more. We find this absence of conservation in all object properties, in the length, surface, quantity, and weight of things.

This absence of conservation indicates essentially that at this stage the child reasons from the configuration. Confronted with a transformation, he does not reason from the transformation itself; he starts from the initial configuration, then sees the final configuration, compares the two but forgets the transformation, because he does not know how to reason about it. At this stage the child is still reasoning on the basis of what he sees because there is no conservation. He is able to master this problem only when the operations are formed and these operations, which we have already sensed at the sensori-motor level, are not formed until around seven to eight years of age. At that age the elementary problems of conservation are solved, because the child reasons on the basis of the transformation per se, and this requires a manipulation of the operation. The ability to pass from one stage to the other and be able to come back to the point of departure, to manipulate the reversible operations, which appears around seven to eight years of age, is limited when compared with the operations of the superior level only in the sense that they are concrete. That is to say, the child can manipulate the operations only when he manipulates the object concretely.

Stage of Concrete Operations

The first operations of the manipulation of objects, the concrete operations, deal with logical classes and with logical relations, or the number. But these operations do not deal yet with propositions, or hypotheses, which do not appear until the last stage.

Let me exemplify these concrete operations: the simplest operation is concerned with classifying objects according to their similarity and their difference. This is accomplished by including the subclasses within larger and more general classes, a process that implies inclusion. This classification, which seems very simple at first, is not acquired until around seven to eight years of age. Before that, at the pre-operational level, we do not find logical inclusion. For example, if you show a child at the pre-operational level a bouquet of flowers of which one half is daisies and the other half other flowers and you ask him if in this bouquet there are more flowers or more daisies, you are confronted with this answer, which seems extraordinary until it is analyzed: The child cannot tell you whether there are more flowers than daisies; either he reasons on the basis of the whole or of the part. He cannot understand that the part is complementary to the rest, and he says there are more daisies than flowers, or as many daisies as flowers, without understanding this inclusion of the subclass, the daisies, in the class of flowers. It is only around seven to eight years of age that a child is capable of solving a problem of inclusion.

Another system of operation that appears around seven to eight years of age is the operation of serializing; that is, to arrange objects according to their size, or their progressive weight. It is also a structure of the whole, like the classification which rests on concrete operations, since it consists of manipulating concrete objects. At this level there is also the construction of numbers, which is, too, a synthesis of classification and seriation. In numbers, as in classes, we have inclusion, and also a serial order, as in serializing. These elementary operations constitute structures of wholes. There is no class without classification; there is no symmetric relation without serialization; there is not a number independent of the series of numbers. But the structures of these wholes are simple structures, groupings in the case of classes and relations, which are already groups in the case of numbers, but very elementary structures compared to subsequent structures.

Stage of Formal Operations

The last stage of development of intelligence is the stage of formal operations or propositional operations. At about eleven to twelve years of age we see great progress; the child becomes capable of reasoning not only on the basis of objects, but also on the basis of hypotheses, or of propositions.

An example which neatly shows the difference between reasoning on the basis of propositions and reasoning on the basis of concrete objects comes from Burt's tests. Burt asked children of different ages to compare the colors of the hair of three girls: Edith is fairer than Susan, Edith is darker than Lilly; who is the darkest of the three? In this question there is seriation, not of concrete objects, but of verbal statements which supposes a more complicated mental manipulation. This problem is rarely solved before the age of 12.

Here a new class of operations appears which is superimposed on the operations of logical class and number, and these operations are the propositional operations. Here, compared to the previous stage, are fundamental changes. It is not simply that these operations refer to language, and then to operations with concrete objects, but that these operations have much richer structures.

The first novelty is a combinative structure; like mathematical structures, it is a structure of a system which is superimposed on the structure of simple classifications or seriations which are not themselves systems, because they do not involve a combinative system. A combinative system permits the grouping in flexible combinations of each element of the system with any other element of that system. The logic of propositions supposes such a combinative system. If children of different ages are shown a number of colored disks and asked to combine each color with each other two by two, or three by three, we find these combinative operations are not accessible to the child at the stage of concrete operations. The child is capable of some combination, but not of all the possible combinations. After the age of 12, the child can find a method to make all the possible combinations. At the same time he acquires both the logic of mathematics and the logic of propositions, which also supposes a method of combining.

A second novelty in the operations of propositions is the appearance of a structure which constitutes a group of four transformations. Hitherto there were two reversibilities: reversibility by inversion, which consists of

annulling, or canceling; and reversibility which we call reciprocity, leading not to cancellation, but to another combination. Reciprocity is what we find in the field of a relation. If A equals B, by reciprocity B equals A. If A is smaller than B, by reciprocity B is larger than A. At the level of propositional operations a new system envelops these two forms of reversibility. Here the structure combines inversion and reversibility in one single but larger and more complicated structure. It allows the acquisition of a series of fundamental operational schemata for the development of intelligence, which schemata are not possible before the constitution of this structure.

It is around the age of 12 that the child, for example, starts to understand in mathematics the knowledge of proportions, and becomes capable of reasoning by using two systems of reference at the same time. For example, if you advance the position of a board and a car moving in opposite directions, in order to understand the movement of the board in relation to the movement of the car and to other movement, you need a system of four transformations. The same is true in regard to proportions, to problems in mathematics or physics, or to other logical problems.

The four principal stages of the development of intelligence of the child progress from one stage to the other by the construction of new operational structures, and these structures constitute the fundamental instrument of the intelligence of the adult.

THE RELATION OF AFFECTIVITY TO INTELLIGENCE IN THE MENTAL DEVELOPMENT OF THE CHILD

JEAN PIAGET, D.Sc.

It is incontestable that affect plays an essential role in the functioning of intelligence. Without affect there would be no interest, no need, no motivation; and consequently, questions or problems would never be posed, and there would be no intelligence. Affectivity is a necessary condition in the constitution of intelligence but, in my opinion, not a sufficient one.

We can consider in two very different ways the relations between affectivity and intelligence. The very essence of intelligence is the progressive formation of operational or pre-operational structures. As for the relation between intelligence and affect, we can postulate that affect does, or may cause the formation of cognitive structures. Many authors have presented such a thesis, for example, Charles Odier in his study of the relations between psychoanalysis and my studies in child psychology. Odier maintained that the schema of the permanent object, the discoveries that the baby makes concerning the permanence of the object when it disappears from his visual field, is caused by feelings, by object relations. That is to say, it is due to the affective relations of the child with the object or the person involved. In other words, the affective relations of the child with the mother-object, or other persons, are responsible for the formation of a cognitive structure.

The French psychologist Wallon thinks that emotion is a source of knowledge. A student of Wallon, Malrieux, went as far as to say that the estimation of distance, or the perception of distance, is due to the desire to reach distant objects, and not to the distance of the objects.

A second interpretation is that affect explains the acceleration or retardation of the formation of structures—acceleration in the case of interest, and need; retardation when affective states are obstacles to intellectual development, as in the excellent studies by Spitz on hospitalism. In this interpretation, affectivity explains the acceleration or the retardation, but not the cause of structure formation. Although a necessary condition, affectivity is not a sufficient condition in structure formation which, in cognition, is autonomous. For example, in an arithmetical structure like $7 + 5 = 12$, the understanding of the equality may be retarded by certain affective situations, or it may be accelerated where interest is

involved. In either case, the subject will end by accepting that 7 plus 5 equal 12. This shows a structure independent of affect, even though its construction may be motivated, and by consequence accelerated or retarded, by feelings, interest, and affect.

Affect can lead to errors, and because of certain affective troubles, a child may accept for a moment that 7 plus 5 equal 11, or 13 and not 12. But this is not an equilibrated structure. Even if affect leads to momentary deviations, purely cognitive factors will eventually correct such a structure, independently of affect.

Of the two interpretations, I choose the second and I will try to demonstrate genetically that affectivity may lead to acceleration or retardation, but it is not the cause of the formation of cognitive structures. Considering first whether affectivity precedes the functions of the cognitive structures, I shall show that the stages of affectivity correspond exactly to the stages of the development of the structures; that is to say, there is correspondence, and not succession.

First we must agree that at no level, at no stage, even in the adult, can we find a behavior or a state which is purely cognitive without affect nor a purely affective state without a cognitive element involved. There is no such thing as a purely cognitive state.

For example, take the most refined form of thought: a mathematician who demonstrates a new theorem. As much as such behavior is intellectual from one aspect, it is necessarily affective from another. If the mathematician spends his time with it, it is because it interests him; he gets pleasure out of it, he feels enthusiasm for it, even passion, and this is affective. In working, he has to direct his effort; he can accelerate his demonstration by greater effort, or, on the contrary, feel fatigued, or slow down. This regulation of his work is affective and when he finishes, he will feel joy in case of success, sorrow or depression in case of failure.

There are no acts of intelligence, even of practical intelligence, without interest at the point of departure and affective regulation during the entire course of an action, without joy at success, or sorrow at failure. Likewise, at the perceptual level we have affective motivations. What we perceive is a function of attention regulation, which is pretty much motivated by needs and interests.

Just as there is no purely cognitive state, there is no purely affective state, no matter how elementary it may be. A state of emotion, for example—and emotion is one of the most elementary forms of affect—supposes a

discrimination and, therefore, a cognitive element. In sympathy, friendship or love, there are elements of discrimination and mutual comprehension. The instincts necessarily include cognitive elements. Tinbergen and Lorenz have found evidence, through studies of instinctive behavior, of perceptual signals, or innate releasing mechanisms, which are cognitive.

Thus, affectivity does not precede knowledge, and knowledge never precedes affectivity. They are parallel to each other. What is, then, the relation between the two? Claparède said that in behavior, it is affect that fixes the goals, while intelligence supplies the means. This is certainly true in general, but there is also a comprehension of the goal; and in the means there is also the value of the means, which is not only cognitive, but affective.

Janet proposed another theory. In every behavior we must distinguish the primary action and the secondary action. The primary action is the regulation, which Janet calls secondary action; that is to say, the regulation of the primary action, which is actually the regulation of forces present at the moment, reinforces them or puts a brake to them according to success or failure. Janet calls this regulation the economy of the action. On the one hand there is the subject-object relation, the structure of the action; on the other hand there is affectivity, which would be the economy, or the regulating of the forces.

Lewin makes an analogous interpretation, but in different words. His theory of the total field, which includes affectivity as well as cognitive functions, is analogous to that of Gestalt theory: The perceptual field includes on the one hand a structure, the perceptual or cognitive elements, and on the other hand a force, which is the affective element.

All the authors agree that in all behavior the structure is cognitive, and the force, or the economy, is affective. Therefore, affect cannot be the cause of a cognitive structure, any more than intelligence can be the cause of affect, because a structure is not the cause of this energy, this force, and vice versa. Between the two is a relation of correspondence, and not of causality. This relationship I will examine in four stages starting with the sensori-motor stage.

I

From the cognitive point of view, the sensori-motor stage is characterized by a clear evolution in the sense of decentration, a complete inversion of what goes on at the beginning with what goes on toward the end of that period.

The *initial state* is characterized by the absence of permanent objects. The universe consists of a series of momentary and moving pictures. There is not one space, but a series of spaces centered on the body of the child, and there is no causality between objects, but a causality by action that is neither objectified nor localized in space. The *final state* is a universe of permanent objects, of one space, one causality between objects. There is a decentration.

A parallel decentration takes place from the affective point of view. Affectivity, if we take what the psychoanalysts say, is at the beginning centered on the body itself. During the oral stage and anal stage, there is a focusing of affectivity on certain regions of the body, then on activity in general; psychoanalysts call this focusing primary narcissism. Then there is decentration only in the sense of object-relations, in the choice of the object, in the fixation of affectivity on the mother. Therefore, also, from the affective point of view, a decentration, an inversion of direction occurs; this is an astonishing parallelism to cognitive development.

This crucial stage, which cognitively is the construction of the permanent object, and which affectively is the constitution of object-relations, has been studied experimentally by Madame Gouin Decari. Her study deals not with three children, as my own observations have, but with 90 babies from the first month to about two years of age. Madame Decari has constructed a scale of 10 items concerning object-relations, and also a scale concerning the construction of the permanent object based on the developmental stages as I have described them.

At the beginning of the first of the initial stages, from the cognitive point of view, there is no object for the child. A child of four and a half to five months starts grasping what he sees. You give him an object, and the child grasps it; then if you cover the object with a handkerchief at the moment when the child's hand is already moving in the direction of the object, he pulls his hand back as if the object did not exist any more, as if by disappearing from view it had vanished.

It is there that we have our point of departure. From there we find an intermediate level which allows us to confirm this interpretation about the absence of the object. We find that if you put a baby between two screens and hide the object under the left screen at the moment he is trying to get the object, the child looks there for it; then if you hide the object under the right screen, the child, instead of looking under the right screen, will look again under the left. That is because it is not yet a localized object; there is

a beginning of searching, a beginning of permanence, which is only the continuation of the action, without localization.

Finally, there is a third level where the object is looked for in connection with its displacements and its localization.

These three levels, which I described, Madame Decari found again in an astonishing way, and always in succession. That is, behavior of the second level is never reached without all the previous behavior from the first to the second level having been reached. There is, then, a constant succession, without fluctuation. It is, however, essential to note that this construction of the object is joined at the same time with that of space, of time, of causality. There is a solidarity of development in the construction of these four concepts as each one is constructed jointly with the others. The construction of the object is joined with that of space because the object is not really constituted except when it is localized, and to be localized it must be situated in relation to a group of displacements; joined with time because these displacements are made successively, which require an objective order of successions in order to find the object; and joined with causality because there is then a causality objectified and localized in space.

Madame Decari also studied the stages of object-relations according to Freudian theory. She found successive stages beginning with a confusion of the ego and the external world, in a dualistic universe, as Baldwin would say. Then she found more precise beginnings of object-relations, beginning with interest in a smiling face, or different smiling faces, as Spitz has shown, and finally object-relations, as such. Here, again, Madame Decari distinguishes a certain number of stages, but the striking thing is that she finds no consistent successions; there is a statistical regularity, but with fluctuations; this is understandable because the stages, as I have conceived them, are primarily defined in terms of a successive integration. In Freudian theory, a stage is characterized by a dominant feature. In the oral stage there is no reason why there should not be anal behavior, and vice versa. In cognitive behavior, a progressive integration occurs with a consequent succession and not simply a dominance.

So, what is the relation between the construction of the cognitive object on the one hand and the object-relation on the other? There is a parallelism, but intelligence cannot explain affect and vice versa. My hypothesis is that it is impossible to explain affect by intelligence, that is, we cannot say intelligence is the cause of affectivity; and on the other hand, it seems impossible to explain the construction of the permanent object by the feel-

ings as such. Feelings explain the interest for the object, but the structure of the object is related to space, time, and causality. Can we maintain that these four ideas—object, time, space, causality—are engendered by the interest or the feeling for the external object? This would be much too simple to maintain. The facts show two parallel structures, the affective aspect and the cognitive aspect which are complementary, but without the one being the cause of the other.

In both structures there is decentration, but a decentration which is at the same time cognitive and affective, and we cannot consider one of these two aspects the cause of the other. There are also retardations and accelerations in both. The research of Spitz on hospitalized infants has shown the necessity of a normal affective relation between mother and child. When such a relationship does not exist, intellectual development does not take place. This does not mean that one is the cause of the other. If there is no interest for the object, there will be a retardation of the intellectual structures, because there is no motivation. So, affectivity is a necessary condition for, but not a cause of, intellectual development. Development of cognitive and affective structures are complementary and parallel in this stage, but there is no evidence of causality between them.

II

From the point of view of intelligence, the second stage has three essential characteristics: First, the appearance of symbolic function and of representation. Second, thought is tied partially to language and rests on the interindividual communications; it is not strictly individual any more. Third, there are still no operations, and consequently, no conservation.

From the affective point of view, we find corresponding characteristics: First, the appearance of representative affects; that is to say, affects that are tied both to interindividual values, and values that subsist outside of the perceptual field, and by consequence are attached to representations. For example, sympathy and antipathy are feelings based on mutual value judgments between individuals, that subsist beyond the immediate perceptual contact; they subsist even in the absence of the individuals. It is the same with feelings based upon self-evaluation, for example, the feelings of superiority or inferiority, which are, of course, individual, but are always related to comparisons with other individuals, and are consequently inter-individual. The feelings of the parental complexes, the oedipus complex, the superego, influence the affective life during its entirety, as psychoanalysis has shown. The question is how these infantile feelings can influ-

ence the rest of the affective development of the individual. Classical psychoanalysis explained this by saying it was essentially feelings attached to unconscious representations conserved in the unconscious which made possible subsequent identifications. Would it not be simpler to suppose that the element that insures the subsequent permanence of these feelings is simply an element of reaction, that we have to do here with schemata of reaction, like the sensori-motor schemata, but more complex, since the child has already reached the level of representation, schemata about objects or persons?

In this stage, schemata of objects and of persons exist constantly in the cognitive reactions of the child: for example, the schemata of reactions we have acquired in connection with our parents—schemata of submission, obedience, or revolt, with all the intermediate feelings. These schemata are always both affective and cognitive at the same time. The schemata related to objects are connected to the ego with action and have both an affective and cognitive aspect; but the schemata related to persons also have both a cognitive and affective aspect, since persons are centers of causality and are sources of all kinds of cognitive ideas as well as of feelings. In that case, the permanence of infantile feelings would be due simply to the permanence of the schemata, and would not necessarily be unconscious representations of feelings that are being conserved as such. The permanence would be insured by the schemata, and every time a situation similar to the one that had been experienced appeared, there would be a reformation of similar feelings as a function of the schemata; for example, submission to or revolt against a teacher who resembled one's father—the permanence in this case being essentially a permanence of reaction more than a representative of content or feelings preserved in the unconscious as such.

The great problem is knowing if there exists in the field of feelings something that corresponds to conservation in the cognitive field, and mainly, if there is something that corresponds to reversible operations. An operation is a reversible action that transforms reality while conserving one of the aspects of this reality. In the affective field, we find the equivalent of operational structures and consequently conservation, but we find it in a particular section of affective life: moral sentiments. Moral feelings seem to pertain essentially to a conservation of values by a process analogous to what the logical structure is to the cognitive field. But transposed in terms of affectivity, this process is the obligation, the moral obligation, equivalent

to the logical structure, which imposes values instead of imposing relations of verification, as is true in the cognitive field. The moral values in this hypothesis would consist of a conservation of values. So in the second stage, which is pre-operational from the cognitive point of view—and where consequently there is still neither conservation nor operations—what is there from the point of view of moral feelings?

Moral feelings are well described by psychoanalysts as a function of the superego. Pierre Bodel spoke of them in different words, as the respect of the child for the adult, a unilateral respect which makes the child abide by the discipline imposed by the adult. These feelings exist in the second stage, but we find pure conservation of them only in the subsequent stage. For example, when you examine the moral feeling of a six- to seven-year-old child, you find that he is perfectly sensible to certain orders and rules imposed by the parents, and shows the beginning of moral feelings; but when the parents are gone, these rules or orders are not obeyed. There is no conservation of these orders when there is no material control. What we find mostly is that orders imposed and accepted at this level are not yet generalized.

Long ago I studied the moral judgment of the child, the ideas a child has about lying. The child very early accepts the order not to lie, that he must tell the truth, but he accepts it without any kind of generalization. When I asked children younger than seven to eight years if it were permissible to lie to playmates, and especially if it were worse to lie to peers than to adults, I found a great difference between a child of the pre-operational level and a child older than eight. Children above seven or eight will tell you that it is not permitted to lie to anybody, including their peers; and when you ask them if it is worse to lie to a peer or to an adult, they will say that it is worse to lie to a playmate because to them one is never forced to lie, while one may find himself in a difficult situation with an adult and there is nothing one can do but lie. Children of the pre-operational level will tell you that to tell the truth is an obligation toward adults, but that you can lie to a peer or fool him since this was never prohibited. The instruction not to lie is accepted at the precise moment, for the precise situation in which it was given, without any kind of generalization. Thus, even in the field of moral feeling we cannot speak of conservation at the pre-operational level.

III

At the third stage, from the cognitive point of view, a great novelty ap-

pears: the constitution of the operations of intelligence, and with these operations, the constitution of conservation imposed by the functioning of the operational structures.

Added to the preceding affective forms are new feelings in the field of moral feelings, which are equivalent to conservation in the field of intelligence. In fact, around seven to eight years of age, a morality of reciprocity appears. It is no longer the morality of obedience, an obedience that was guided by imitation, but a morality of reciprocity. Reciprocal morality is also an autonomous morality, in that it is related to transactions between partners, without subordination to superior orders. At this level the best example of a moral feeling based on reciprocity is the feeling of justice between children of the same age, between playmates; this feeling of justice is independent of the instructions and orders of adults.

Do we find, at this level of concrete operations, the equivalent of an operation in the affective field also? This might be answered by saying the equivalent is will. We can draw a narrow parallel between will and the problem of operations: The will constitutes the equivalent of the cognitive operation; but it is an operation dealing with the energetic aspect of behavior, therefore, an affective operation.

IV

The fourth stage is the stage of the formal or propositional operations; that is to say, the stage during which the child becomes capable of reasoning on different hypotheses, on the possible, on the probable, and not just on the real, the concrete.

From the affective point of view, new feelings are added to preceding feelings and correspond to these new operational structures. They are feelings I will call ideological. These feelings are not attached to particular persons or only to material realities but attached to social realities and to essentially ideal realities, such as feelings about one's country, about humanitarianism or social ideals, and religious feelings.

It is at this last stage that we can place what we call the formation of personality. This term, personality, is often abused, and we must not confuse it with the ego. Personality is the superior synthesis of the affective life; it is the synthesis achieved at the moment when the individual becomes capable of becoming a member of the society of adults, in a society already formed, and where he plays a role that he, himself, has chosen and which allows the individual to group and regulate the whole of his values.

WILL AND ACTION

JEAN PIAGET, D.Sc.

I once heard in a bus, two bus conductors saying about a third person, "He is a nice man; he is loyal; he is logical." What did they mean by saying "he is logical"? Certainly not that in his reasoning he was conforming to Aristotelian logic, but simply that he was coherent in his attitudes, in his affective reactions, and consequently one could depend on him. It is this kind of coherence that I call the logic of feelings.

A sociologist, Georges Vaucher, in his interesting book on judgment of values, discusses a logic of feelings. He maintains that we cannot talk of a logic of feelings in the same sense that we talk about cognitive logic, because feelings are not conserved, they are transformed and are submitted to indefinite fluctuations. In the logic of cognition, Vaucher says, the terms in which we reason must be conserved, otherwise reasoning would not be possible. For example, when one says that $A = B$, $B = C$, therefore $A = C$, A and C are the equal at the beginning and at the end of the reasoning. However, once you start comparing and manipulating feelings, according to Vaucher, you transform them just by the plain fact of examining them. Therefore, he says, a logic of feelings does not exist.

Vaucher, in his argument, refers only to those spontaneous feelings that are characteristic of the second stage in the evolution of affective life; of spontaneous sympathy and antipathy which in fact may appear, disappear, and fluctuate in different ways. There is, however, a conservation of feelings and of affective values; it is that imposed by the moral feelings.

Take, for example, the feeling of gratitude. Insofar as this feeling is spontaneous, it fluctuates. We all know how gratitude is easily forgotten. But when I am asked a favor by someone who was of service to me once, and I have forgotten the gratitude that I then felt toward him, I will remember this gratitude. Besides being spontaneous, the gratitude will then become a moral persuasion, and the plain fact that it becomes a moral feeling, shows that there is here a compelled conservation, something analogous to logical conservation. It is the same way with feelings of justice. Treating everybody the same way, equally, compels a certain conservation of values; it is the same with moral feelings based on reciprocity.

In other words, morality as a whole is an apparatus of conservation of affective values, by means of obligations, and there we have something analogous to cognitive conservations.

But can we go a little further and ask ourselves if there exists in the affective field, something that could be equivalent to the operations of thought as such? Thought operations are internalized actions, actions which have become reversible and which are coordinated with other operations in structures which themselves are reversible. I think that there exists such an operation in the affective field, an affective operation. This affective operation is what we call will, and it is the problem of will that I propose to discuss.

I shall start by examining the different definitions of will that have been given. There were a great number of old definitions which, for my part, were all insufficient and even profoundly insufficient, until William James discussed the problem of will in more precise terms. The old definitions confuse will with different affective tendencies. For example, Condillac defined will as desire. If this were the case, one does not need the term will. Why have two words to describe the same thing? Wundt and Ribot considered as will, the element of tendency in the affective life. According to Wundt, the will is all that tends to prolong a feeling. There is something true there, and that is the tendency to conserve. But that is not enough; not all tendencies constitute an act of will. Other authors, like Bergson, Müller-Freienfels, Warren, and others, have defined the will by the personality; it is what engages the personality as a whole. This is completely false.

James has shown that when there is an act of will, when the will intervenes in our action, the personality is divided. There is a conflict there; without this conflict, there would be no need for will. So I cannot see how you can define the will by the whole personality. Rignano went a step further by suspecting what James finally showed, that is to say, that when will intervenes, you must consider two tendencies. Rignano defines will as an intention, but an intention that refers to the future, rather than an intention that bears on the present, such as a simple tendency or a simple desire. This definition is better than the others given, but it does not seem sufficient because the tendency that refers to the future may simply be a question of premeditated interest. For example, during a dinner, knowing the menu, I do not take soup because I want to save my appetite for the main dish that follows. In this case, a present tendency is subordinated to a tendency that bears on the future, but according to Rignano's definition, this is not an act of will, it is simply a question of interest.

Finally, the problem was discussed in an enlightening way by James.

For James there is will only when there is a conflict of tendencies; without this conflict, will would be confused with desire, with simple tendencies, and it would be useless as a separate function. So, in case of conflict, says James, we are confronted with an initial situation in which we find two tendencies: On one hand is a tendency which initially is strong and which corresponds to the actual desire of the individual, and on the other hand is a tendency that initially is weak, which does not correspond to the actual desire of the individual but to some tendencies of a higher level, for example, to a duty or to a value judged by him superior to his actual desire. An act of will, then, consists in reversing the situation, that is to say, in reinforcing the weak tendency and in thwarting the initially strong desire. In this way, after the act of the will, the weak tendency has become strong and the strong desire of the beginning has been defeated by the initially weaker tendency. For example:

I am at my desk and I am in the process of preparing a lecture; outside it is beautiful weather and I feel like walking. The strong tendency is my actual desire to leave my work and go out in the sun for a walk; the weak tendency is to continue my work, a tendency that corresponds to something like a duty, like a moral obligation. In fact, it is something that I simply have to do, while the other is a desire to do so. If I yield to my actual desire, that is to say, if I leave my work and go for a walk, we cannot say that there is there an act of will; we can say that there is simply a realization of my desire. On the contrary, if I succeed in resisting this tendency, if I continue to work, even though I have a great desire to go out in the sun, in other words, if the initially weak tendency ends by removing the strong tendency, then we can talk of will; the will has triumphed over the desire.

James gives an excellent description, but there is no general explanation. This description brings up a problem. From the moment this initially weak tendency becomes stronger, an additional force has been added. Where does this force come from? James leaves the problem open and states precisely that he does not give an explanation, but only a description of the problem. To describe this additional force, this reversal of force, he speaks of a "fiat," of a creative act, to show precisely that it is not an explanation and that there is a certain mystery about it.

Binet criticized James' theory in the *Année Psychologique*, in which he asked: "Where does this additional force come from?" It is there the problem of will lies.

Charles Blondel has offered a solution, in a chapter on will, in his dis-

sertation on the psychology of Dumas. Blondel says that it is impossible to solve the problem of the will if you look at it only through the psychology of the individual; it seems like a mystery. There is a reversal of the strength of the tendencies, which cannot be explained without assuming an additional force and no one understands where this additional force comes from, if one considers the individual only. On the contrary, if we examined will from the collective or social point of view, then, according to Blondel, there is a possible solution. Social life, in fact, imposes on us collective imperatives, orders, duties that would be discussed psycho-analytically in terms of superego. Blondel, a sociologist, talks about collective imperatives.

The additional force of James, says Blondel, is precisely the collective imperatives. The individual has no will of his own; the will is the collective imperatives, it is the moral values that the society has imposed on the individual, that canalize his behavior, that allow him to bypass his desire of the moment. This is the kind of solution that Blondel proposes and which is similar to other sociological solutions.

But, so far as I am concerned, Blondel's is not a solution of the psychological problem of will. In fact, if the collective imperative, or the superego, if you prefer, is strong enough, there is no need for will; there are going to be no conflicts, the individual is always going to submit to the rules that dominate him. If, on the contrary, there is conflict, it is because at the beginning the collective imperative is weaker than the desire, the desire is momentarily stronger than the collective imperative, and the act of the will is in reversing the situation, that is to say, in rendering to the collective imperative its strength which was momentarily lost. In Blondel's explanation, as in James' description, we need an additional force; and again we cannot understand where this force comes from. The solution that Blondel offers is not a solution, as far as I am concerned.

I shall now try to deal with the problem of will by showing two things: first, that the problem of will is analogous to that of the operations of intelligence; with the only difference that it is an affective operation and deals with values, actions, or decisions. Second, I should like to show that there is no need here of an additional force, that the problem of the additional force comes simply from the fact of reasoning in terms of absolute forces, of absolute values; but if we look at will from the point of view of relative values, as we have to do in the perceptual field, for example, the problem disappears.

First, look at the analogy between the will and the operation of intelligence. We find the exact equivalent of the conflict of tendencies that James has described, whenever a logical operation is in conflict with a tendency that is momentarily stronger, a tendency, for example, related to a perceptual configuration. Take the experiment with children concerning the conservation of number at the beginning of the stage of concrete operations, in which the first two rows of coins are equivalent by virtue of visual correspondence.



If we enlarge one row, the child finds himself in conflict. At the beginning there is an inferior tendency which is strong: It is the tendency of judging according to the configuration; there is a longer row, and consequently there will be more elements in that than in the shorter row; there is no conservation. There is also a tendency of superior order, but weaker, which consists in conserving the equality not by virtue of a perceptual verification, which is strong, but simply by virtue of reasoning, which is weak.

How does a superior tendency, initially weaker, end by triumphing, by removing the inferior perceptual tendency which at the beginning is the stronger? What happens is that the superior tendency carries away the inferior one by an act of decentration, it carries it away from the moment the child is subordinating the actual perceptive tendency to a system of transformations. The superior tendency removes the inferior one from the moment that there is decentration and reversibility, that is to say, from the moment the child is capable of remembering what precedes, from the moment he is capable of coming back, of remembering that there was an optical equality of the rows of coins and that all that one did was to change their spacing. In the other direction, from the moment the child is capable of anticipating what can follow, of foreseeing that one can also space the other row and achieve again an optical equality. So there is decentration when the actual configuration is subordinated to previous as well as to future configurations and especially to transformations that relate these configurations to one another. So here the problem is exactly parallel and the inferior tendency becomes strong simply by decentration and reversibility.

Well, I maintain that exactly the same thing takes place in the act of will. Why is it that the tendency, the actual inferior desire is stronger at

the beginning? It is simply because one forgets to think of the past or of the future; it is simply because one lives in the present, because he is situated in the actual perceptual configuration: I am in front of my desk; I have no particular desire to work; I see the sun outside; I feel like walking. It is the actual perceptual configuration that carries me away over everything else; if I give in to my desire, it is simply that I stayed in the present and did not think either of the past or of the future.

Why did the initially weak tendency to continue my work end by being the stronger? Because, in this case, there is decentration: I can free myself of the actual desire in two ways, but it is always by calling upon the conservation of values. I can free myself then by a double act of reversibility: either I recall the past, or I anticipate the future. I recall the past, that is to say that I am engaged, that the work has to be finished and I have to do my work. Or, on the contrary, I anticipate the future, I anticipate the satisfaction that this work will give me when accomplished, what I am going to feel when I will no longer be engaged in this task which is not particularly pleasant to me. Therefore, the act of will consists here simply in relying upon a decentration, upon something which is exactly analogous to the reversibility of the intellectual operation and which consists in subordinating the actual value, the desire, to a larger scale of values, the value of the engagement that I have undertaken, the value of the work. From the moment that I react according to my ordinary scale of values, from the moment that I include my actual desire in the permanent scale of values, the conflict is resolved and the initially strong tendency becomes the weaker one.

The will is, therefore, it seems to me, exactly parallel to an intellectual operation except that it is an affective operation that bears only on the conservation and coordination of values, and on reversibility in the domain of values, while the intellectual operation bears on the coordination and the conservation of verifications, or of relations.

What about the problem of the additional force? There is no need for an additional force because the force of the initial tendency, which was momentarily the stronger, is but a relative force: This tendency was stronger simply because we plunged into the actual configuration, forgetting the past and the future, and therefore forgetting the permanent scale of values. So we have to do here with a restricted configuration and it is within this restricted configuration that the force, the desire, carries away the other tendency. On the contrary, once the act of decentration and

reversibility intervenes, this force diminishes, but not absolutely; it diminishes only in a relative sense, relative to the values that we had forgotten, which regain their force and then modify the force of the actual configuration. In other words, the problem of the additional force in the domain of the will must be put in terms analogous to those of perceptual values and not in terms of absolute forces.

Perceptually, when we compare sizes, if B compared to A is smaller, or B is bigger in comparison with C, B will be then overestimated in relation to A, and underestimated in relation to C; B will change value according to the context. There is no constant absolute value, there are only relative values. With the decentration, on the contrary (perceptive or intellectual), we arrive at a certain conservation of these sizes, of these values. It is exactly the same in the affective field. As long as we are in the actual configuration, the momentarily strong desire is strong as related to what we forget. On the contrary, from the moment that it is replaced in the permanent scale of values, its relative value diminishes. Therefore, the problem of the additional force does not exist; it is a pseudo problem, because it is put in terms of absolute values.

I conclude this exposition: having will is to possess a permanent scale of values. If we possess a permanent scale of values, the conflicts can be resolved, the solution of the conflicts consisting in a subordination of the actual situation to permanent values. And conversely, not having will, means knowing only unstable and momentary values, not being able to rely upon a permanent scale of values. Will is then comparable in this respect to affective operations of coordination and conservation of values. But I would like to specify that this is not an intellectualistic interpretation of will, but an affective operation, by which I mean that it is not enough to remember, to know, to understand. If I am at my desk and recall my obligations, which I invoke simply through intelligence, and the satisfaction that I will have when I finish this work, my desire will not change as long as my understanding is only through intelligence. To decentrate in the domain of will is not to invoke memories through the intelligence, but to revive permanent values, that is to say, to reanimate permanent values, to feel them, which means that it is an affective operation and not an intellectual one.

A final point, which might answer the objection that in order to decentrate, one must call upon an additional force, that one must have will in order to decentrate. But what is this decentration? Like all affective regu-

lations, it is a regulation of effort when one is interested in his work, or a regulation of fatigue in case of disinterest or depression. The force of the regulation is something common to all affective regulations. So in this particular case, the force necessary for this regulation is not a new force, it is a force which results directly from the permanent scale of values. If these values are strong, then the regulation will result directly without the problem of adding a new force. And if these values are weak or incoherent, there will be no will.

ACTIVITIES OF THE MENNINGER FOUNDATION

Construction on the Charles W. Rosenberry Activities Therapy Building will begin soon. The one-story building will have about 16,000 square feet of space and will be divided into three areas: one for creative activities, including painting, ceramics, sculpture, weaving, and other crafts; the second for offices, interview rooms, darkroom, multi-purpose room, and kitchen for the patients' cooking class; and the third for a lounge for Day Hospital patients and several classrooms. The exterior will be of gold and blue aluminum panels with a section of native stone. It will be located east of the present Arts and Crafts Shop, across Frazier Street.

* * * *

Doctor Will met with President Kennedy at the White House on February 9 to discuss the problems of mental illness. During their 40-minute conversation, Doctor Will asked for the President's leadership in the fight against mental illness and spoke of the need to increase federal aid for psychiatric training and research.

Doctor Will is one of seven persons appointed by Governor John Anderson of Kansas to a Citizens' Advisory Committee on Penal and Correctional Institutions. The committee will study the need for more penal facilities and make recommendations to the next session of the state legislature.

* * * *

Dr. Edward D. Greenwood took office as president of the American Orthopsychiatric Association at the organization's annual meeting in March in Los Angeles. He has served on the association's board of directors and on several committees. Besides his duties as coordinator of the Foundation's training program in child psychiatry, Doctor Greenwood is a consultant to several children's treatment centers, the Topeka public schools, the Kansas Division of Special Education, and the county juvenile court. He is a member of the juvenile delinquency sub-committee of the U. S. Justice Department. Doctor Greenwood has begun a three-year term as an adviser to the educational policies commission of the National Education Association and the American Association of School Administrators.

* * * *

The library of the Children's Hospital has been named for Dr. Donald J. Cowling of Minneapolis, president emeritus of Carleton College, in a

special ceremony held by the children. Doctor Cowling became a member of the Foundation's Board of Governors and of the Child Psychiatry Committee in 1954. He has encouraged many persons to help with the financial support of the new hospital.

* * * *

Offices of the Department of Education have been moved from various locations at the Foundation and the Topeka Veterans Administration Hospital to a building on the West Campus—a 380-acre tract of land and nine buildings two miles west of the present grounds. The Foundation's programs in social psychiatry occupy one building; the education offices, historical museum, and art gallery are in one wing of another.

* * * *

The Foundation has entered the area of community research with the undertaking of a research study of some aspects of urban renewal. The study will explore the economic, social, and psychological effects of relocation on about 3,000 residents being displaced by an urban renewal project and by construction of a new highway on the edge of Topeka. The principal investigator is Dr. William H. Key of Washburn University of Topeka; working with him are Dr. Gardner Murphy, Dr. Edward D. Greenwood, and Mr. Richard Benson of the Foundation. The investigators hope the study also will indicate how assistance in finding a new home or some form of support, counseling, or treatment will help the relocated families adjust themselves to a new environment. The study is supported by a grant from the Social Security Administration of about \$35,000 a year for the next three years.

A grant of \$30,609 a year for three years to continue the Cognition Research Project has been received from the National Institutes of Health. The grant provides for continuation of work by Dr. Riley Gardner and other staff members on individual differences in thought organization. The new studies will focus on genetic and environmental factors in the development of these differences from childhood to adolescence.

* * * *

Dr. Paul Pruyser, associate director of the Department of Education, was named Man of the Month by *The Journal of Pastoral Psychology* in the February issue. He is the subject of an article by Dr. Seward Hiltner of Princeton Theological Seminary, a consultant to the Foundation's

Religion and Psychiatry program. An article by Doctor Pruyser entitled "Nathan and David: A Psychological Footnote" appeared in the same issue.

* * * *

Dr. Nelly Tibout, a training analyst and a consultant to the Children's Service, has left the staff of the Foundation to retire to Zeist, Holland. Doctor Tibout, who was born in Holland, had been at the Foundation since 1952. She was president of the Topeka Psychoanalytic Society for 1957-58.

* * * *

Staff News:

Dr. John F. Santos, co-director of the Foundation's research program in reality testing, has been appointed the representative for the United States and Canada to the Inter-American Society of Psychology. He also has been appointed to the board of governors.

Dr. Joseph Satten was a member of a panel on *The Problems of Responsibility: Legal Concepts and Psychiatric Theory* at an institute for prosecuting and district attorneys held at the University of California Law School in Berkeley.

Dr. Robert Switzer conducted a seminar on *Guidance Role for Teachers* in the graduate school of the department of education of the University of Minnesota. He gave the keynote speech, *The Role of Counseling and Guidance in the Prevention of Mental Illness*, at a two-day conference of the Minnesota Counselors' Association in Minneapolis, and took part in a televised discussion of counseling and guidance.

Dr. Robert Menninger led a discussion of problems of the over-40 age group as part of the second annual Women's Worry Clinic in Wichita. About 1,200 women attended the various sessions of the clinic, which was sponsored by the Wichita-Sedgwick County Mental Health Association.

Chaplain Thomas W. Klink spoke on *Crucial Issues in Pastoral Education* at a regional meeting in Kansas City, Mo., of the Conference on Clinical Pastoral Education.

Dr. Paul W. Pruyser was one of two leaders of a five-day seminar offered in Minneapolis by the Board of Christian Education of the United Presbyterian Church, U.S.A. The seminar, on Christian education, was for about 50 ministers and others in the field of Christian education from four states.

READING NOTES

Angelos Terzakis is said to be the outstanding playwright in Greece. In April the College of Emporia presented the world premier, in English, of his drama *Theophano*. Mr. Terzakis spent two weeks in Emporia during the run of his play and upon his return to Athens recorded some of his impressions of Emporia and Kansas for "The New York Times of Greece," actually known as *Vima*. His article was printed on the first page of the paper and is such a wonderful boost of Kansas that I would like to print all of it but I will have to make a few selections:

"Where do men go to find life? In the great centers. There, where flesh and bone are crushed together, where the air becomes rare, full of stagnation, expensive and unhealthy, where avarice dominates, where commonality abounds, where man loses his measurements and becomes a monster.

"I understand very well my friends, who returning from America, told me that they couldn't live there. The way of life there does not please them. They had visited the big cities. They had experienced the fever of New York or Chicago. Oh, how I bless my fate that presented me a less ambitious opportunity! I had the privilege and joy to spend fifteen days living without the glamorous tones of an American big city.

"... here in this blessed corner of the earth the air smells fresh with the fragrance of new mown hay. Here the atmosphere elevates the soul and leads your soul to distant memories far behind the individual, personal life and reminds you of Paradise. This peaceful city, which carries the name Emporia, represents a different picture from what a European observer is accustomed to seeing in the European Mosaic... here an endless park; adorned with lovely dwellings which are charming and joyful; no fences separate neighbors; all things co-exist in harmonious company.

"I am thinking of the ambiguous picture we have from our distance about life in America. In this blessed city where people sleep without locking their doors, where children leave their bicycles overnight on the grass, I recollect the idea we have of a country dominated by gangsters. This is the distortion of the windows, but it is also the bitter fruit of the many senseless pictures offered by Hollywood.

"America is represented by the people of Kansas who look at you innocently and with faith. People smile at you on the street even though you are a total stranger to them and whole heartedly offer you their hand and

believe whatever you say for the sole reason that you said it. Deep, remote from the noisy megametropolises, the genuine heart of America functions.

"Your soul relaxes seeing so many open sincere faces. One accustomed to the heartless indifferences of foreign countries, to the cold, and neutral glances that pass you, one is surprised upon entering a store to realize that people look at you with warm interest, almost tenderly, and ask about your country proving that they care for you.

". . . Not once during my stay in Kansas, and it is hard to say how many I met, did I meet anyone displaying indifference, cynicism, and an affected politeness. The adornment of the American is the simplicity of his heart. And in this sense he is a genuine humanitarian."

* * * *

"Early newspapers printed a sign at the top of the first page of every issue indicating the four points of the compass. This implied that the information printed came from the north, east, west and south. Later this sign was simplified until it appeared as 'N.E.W.S.' And so we now have the word 'news,' meaning the latest information from the four corners of the globe." (*The Kalends of the Waverly Press*)

"Absurd" says *The Century Dictionary and Cyclopaedia*. Though plural in form, *news* is singular in use . . . and anyway it comes from the late middle English when it was *newys*, plural of *newe* and a translation of the French word *nouvelle*.

* * * *

If you think the atomic bomb threat and the Chinese rumblings and the hysteria on the right and the financial problems of the United Nations and the silliness of preparing to go underground are somewhat monotonous as things to worry about, turn your eyes to the January issue of *Reader's Digest* and read the article on The Polar Bear. Here is a magnificent creature, extremely important to large groups of people and highly interesting, like whales and giraffes, to the rest of us. But like the whales, he is being exploited and exterminated. Canada and the Soviet Union prohibit shooting polar bears, whereas Norway and the United States almost encourage it. Recently it is all the rage for certain brave he-men to rush to the Arctic and blow lead into a polar bear just as the heroes of the last century went to Africa and blew dynamite through elephants.

As of this writing, says the author, there is a strong and concerted action to pass a Marine Mammals Act to protect the fabulous white bear.

If there is a little of the bear totem in any reader, let him drop a line to the Department of the Interior and give it his blessing. I did.

* * * *

Everybody knows that more words in the English language begin with the letter "S" than with any other. But what letter do you think comes next—as a matter of fact not far behind "S"?

After you have guessed that one, guess which come third and fourth. The only hint I will give you is that the letter "M" is seventh.*

* * * *

Philip Coombs Knapp was one of my teachers in neurology, a professor at Harvard. On January 17, 1907, he read a paper at a meeting of the Boston Society of Psychiatry and Neurology entitled: "General Paralysis as a Menace to Public Safety in Transportation." I was struck by these figures:

"The Interstate Commerce Commission tells us that 4,225 persons were killed and 66,709 persons were injured in railway accidents during the year ending June 30, 1906 (exclusive of those killed at grade crossings)." The following year the total number killed was *more than double* this. "It is perhaps safe to say that 10,000 persons were killed and 100,000 injured by accidents on steam railroads and trolley lines during the year ending June 30, 1906, in the United States."

According to the Interstate Commerce Commission Bureau of Transport Economics and Statistics there were in 1960 (exclusive of accidents at public crossings) 66 killed and 1,590 injured. But the I.C.C. says that "since 1906 rules governing the reporting of accidents to the Commission have been revised on several occasions, therefore, statistics are not compiled on a comparable basis. That fact should be stated in any use of accident statistics currently compiled by the Commission."

* * * *

Sermonette by Simeon Stylites in *Christian Century*, Feb. 11, 1953: "It is frequently said that his bark is worse than his bite." What a wonderful thing it would be to meet someone sometime whose bite is worse than his bark! "The main trouble with barking . . . is that if one barks ferociously enough, it brings on the delusion that one has actually done something about the matter; the formula is something like this:

"Whereas, the denial of civil rights to any citizen of the United States

* My unabridged Webster gives to "S" words 372 pages.

The second is "C" which has 300 pages, the third is "P" which has 280, then "A"—196, "T"—190, "B"—172, "M"—150, "D"—146, "R"—144, "F"—117.

on account of race or color, is a betrayal of the fundamental principles of democracy; and

"Whereas, such denials of democracy are the worst handicap to our nation in its international relations, particularly with Asia and Africa; "Therefore, be it resolved . . . that we appoint a committee to study the subject and report next year.

(End of Bark.)

"Let us adjourn."

* * * *

Long after it happened, the *Saturday Review* (July 23, 1960) published a little article by John Steinbeck from which I have excerpted parts of three paragraphs.

"I am constantly amazed at the qualities we expect in Negroes. No race has ever offered another such high regard. We expect Negroes to be wiser than we are, more tolerant than we are, braver, more dignified than we, more self-controlled and self-disciplined. . . . We expect Negroes to have more endurance than we in athletics, more courage in defeat, more rhythm and versatility in music and dancing, more controlled emotion in the theatre. We expect them to obey rules of conduct we flout, to be more courteous, more gallant, more proud, more steadfast. In a word, while maintaining that Negroes are inferior to us, by our unquestioning faith in them we prove our conviction that they are superior in many fields, even fields we are presumed to be trained and conditioned in and they are not."

"Finally, let me bring it down to cases.

"I have children, as many of you whites who read this have. Do you think your children would have the guts, the dignity, and the responsibility to go to school in Little Rock knowing they would be insulted, shoved, hated, sneered at, even spat upon day after day, and do it quietly without showing anger, petulance, or complaint? And even if they could take it, would they also get good grades?"

"Now I am a grown, fairly well-educated—I hope intelligent—white man. I know that violence can produce no good effect of any kind. And yet if my child were spat on and insulted, I couldn't trust myself not to get a ball bat and knock out a few brains. But I trust Negroes not to, and they haven't."

* * * *

N. A. Crawford has called my attention to a new literary journal, *The Midwest Quarterly*, A Journal of Contemporary Thought, published by

Kansas State College at Pittsburg. This particular issue was Volume III, No. 1, Autumn 1961, and it contains an excellent account of the work of Harold Rugg, a courageous educator of the 1940s who bravely withstood the political paranoia of the times. There is also a review of the Welfare State as conceived of by the Soviets; and perhaps most of all, Topekans would be interested in the biographical sketch of the Capper family—Arthur Capper and Florence Crawford Capper—containing many citations from her diary.

* * * *

Defenders of Wildlife, Inc. to which I have long belonged is calling attention of all people, all humane officers, and all who care about animals to the fact that various state agencies continue to carry on what they call predatory and rodent control which is seriously upsetting the balance of nature, causing economic loss plus much unnecessary, extreme suffering. We have been over all of this hundreds of times . . . all intelligent ranchers know that the coyotes kill gophers and unless they kill the gophers the gophers ruin fields and break the horses' legs. But this is only a small part of the whole serious business based on a policy of destruction.

* * * *

The Journal of Social Issues devotes their last 1961 number to an examination of the social phenomena connected with fluoridation of city water. Here is an unquestioned health benefit which has been endorsed by all the official professional organizations; yet more than two-thirds of the communities in which there have been referenda have voted it down. This is not because it is expensive—which it isn't; not because there is any doubt about its value to human beings—because there isn't; not because there isn't a huge dental problem which many people suffer needlessly. It is because "it violates individual rights," *i.e.* the right to develop dental caries if one wants to, and to permit one's innocent and ignorant children to do the same. The asininity of the attacks is only equalled by their feverish intensity. What these articles seem to show so far as I can see is that the sociologists don't know how to explain this mass hysteria, triggered off by a proposal to benefit the community in an intelligent way.

K.A.M.

BRIEF BOOK REVIEWS

Handbook of Abnormal Psychology. H. J. EYSENCK, ed. \$18. Pp. 832. New York, Basic Books, 1961.

Eysenck is one of the extremists of clinical psychology who applaud Roger Bacon's snide observation that system-builders of every age have "with infinite agitation of wit spun out of a small quantity of matter those laborious webs of learning that are extant in their books." Eysenck holds that psychology can at best support on a factual basis only certain low order generalizations; to go beyond these is to court disaster. If psychology is ever to transcend these narrow limits it will be by applying to it "the power of mathematics." Within these narrow epistemological limits, this book reports a wealth of experimental data not only interesting but of importance to clinicians whether or not they hold with Eysenck's radical positivism. (Martin Mayman, Ph.D.)

Rorschach's Test, Vol. I: Basic Processes. By SAMUEL J. BECK and others. \$6. Pp. 237. New York, Grune & Stratton, 1961.

This is the second revision of Samuel J. Beck's 1944 volume. The purpose is still the same; *i.e.*, to provide students with a "moderately steady frame of reference" for scoring Rorschach Test responses and to provide a normative basis for the test as a "quantitative, statistically based instrument," avoiding an intuitive approach. The main method of exposition is still the same: to cite many actual responses and to give the scoring for each. The list of good and poor form level responses has been augmented by results from 200 American psychologists. (Francis M. Moriarty, Ph.D.)

The Greatest Role in the World. By PRUDENCE HAMILTON. \$2.95. Pp. 107. New York, Vantage, 1962.

With the plenitude of books on the physical care of children, the lack of nontechnical works on their emotional rearing is not only surprising but somewhat disheartening. Mrs. Hamilton's slim but fact-filled volume is an effective contribution toward filling the gap. The author presents a number of vivid case histories of men and women and traces the childhood influences that determined their future. Her shrewd analyses will prove acceptable and useful to parents with sufficient knowledge of modern psychology to understand the significance of unconscious factors in emotional development. Less informed readers may be led toward understanding, for the presentation is highly persuasive. (Nelson Antrim Crawford, M.A.)

The Ego and the Id. By SIGMUND FREUD; James Strachey, Translator. \$3.75. Pp. 88. New York, Norton, 1960.

In these days when most reviewers have convinced us that the well-motivated translators of the *New English Bible* failed of their purpose to improve the clarity of the text, one has become familiar with the value of parallel versions printed in adjacent columns. It is difficult to do that in this psychoanalytic classic. Since Strachey assisted, as Riviere graciously acknowledges, in the original translation, one is not surprised to find only minor changes. The most valuable part of the new translation is the historical introduction by the editors and translators. There is a puzzling mix-up in the appendix. It refers twice (erroneously) to page 15 and once to page 30 which is blank

(and hence cannot be the page intended) and again to page 46 on which the topics referred to are not discussed. (K.A.M.)

Hypnosis in Treatment. By WILLIAM MOODIE. \$4. Pp. 168. New York, Emerson, 1960.

"These chapters," says the British physician author, "do not pretend to be a textbook but only an outline of how hypnosis can be used and the results achieved. To apply it does not require a very deep knowledge of analytic psychology, the general practitioner who is interested in people and so understands them can do much to help his unstable and disturbed patients." From his position Doctor Moodie proceeds to touch superficially on many aspects of hypnosis and what he describes and the hypno-analyses of several specific disease entities. These descriptions are so briefly and superficially described that any assistance they offer the novice will probably be toward confusion rather than growth of knowledge. (John A. Turner, M.D.)

Psychologist at Large: An Autobiography and Selected Essays. By EDWIN G. BORING. \$6.50. Pp. 317. New York, Basic Books, 1961.

With erudition, wit, and absence of pride, Boring presents not only the objective facts of his scholarly life but his realistic approach: "Easy success and clear failure had to be avoided: the target lies between." His huge achievement in writing the first adequate *History of Experimental Psychology*; his rigorous standards in his Harvard teaching; his preparation of *Psychology for the Fighting Man*; his founding of *Contemporary Psychology* and his struggle for fair book reviews—these he mentions overmodestly. The story of his psychoanalysis appears with analyst Hanns Sachs's comment on it—involving a little pathos but also warm, human goodness. A sampling of professional letters and learned papers completes the picture of one of the most significant figures in American psychology. (GARDNER MURPHY, Ph.D.)

The Adolescent Society. By JAMES S. COLEMAN. \$6.95. Pp. 368. New York, Free Press, 1961.

A detailed analysis of the behavior, thinking, and values of the students in ten high schools covering well-to-do suburbs, farm communities, industrial towns. The conclusion is that although adolescent society is a subculture of its own, not directly tied to the parental culture, it displays much the same status system as American society in general. Notable is lack of regard for intellectual achievement, which is viewed as essentially selfish as compared with athletics, social success, and the complex of activities representing the "well-rounded" man or woman. Which, though dismal, is perhaps to be expected. (NELSON ANTRIM CRAWFORD, M.A.)

Proceedings of Two Conferences on Parapsychology and Pharmacology. Pp. 86. New York, Parapsychology Foundation, 1961.

Two conferences are summarized in 37 short papers (a total of but 86 pages!). Presenters range from psychiatrists to parapsychologists and mediums. Cedric W. M. Wilson pretty well summarizes the conference with the statements that "(1) ESP is a physiological function of man; and (2) like other physiological functions of the brain, it is capable of being changed by pharmacological agents." It is my feeling that we are missing something very important by not becoming

more involved in this field—or there are a tremendous lot of undiagnosed schizophrenics among us. (PAUL E. FELDMAN, M.D.)

The Life and Work of Sigmund Freud. By ERNEST JONES. Edited and abridged by LIONEL TRILLING AND STEVEN MARCUS. \$7.50. Pp. 541. New York, Basic Books, 1961.

This single-volume abridgement of Jones's monumental, definitive biography retains the essential facts and distinctive flavor in one-third the space of the original. Omitting much of the technical material, it presents for the general reader a vivid portrait of the founder of psychoanalysis. A more skillful or colorful abridgment can hardly be imagined. (NELSON ANTRIM CRAWFORD, M.A.)

Psychosomatic Aspects of Paediatrics. RONALD MACKEITH AND JOSEPH SANDLER, eds. \$8.50. Pp. 155. New York, Pergamon, 1961.

This little book contains the papers, the ensuing discussion, and two symposia which came out of a recent British Study Group Meeting of the Society for Psychosomatic Research. Designed primarily for pediatricians, the earlier papers and discussions deal at some length with the somewhat old-fashioned topics of constipation and bowel training. A stimulating question and answer session with Anna Freud is followed by discussion of recurrent pains in children, theories of psychological development, theories of psychosomatic disorder, and problems of psychosomatic research. The style is clear, readable, and energetic, despite multiple authorship. (RUSSELL M. WILDER, M.D.)

Das Schreckverhalten des Menschen (Fright and Startle Behavior in Man). By ST. WIESER. Pp. 101. Bern, Hans Huber, 1961.

An experimental study of startle reactions to the auditory stimulus of a gunshot, filmed by fast cameras allowing micro-analysis of motor patterns and expressive movements. Findings: The immediate startle pattern with its facial and neck reflexes is followed by abversive or adversive movements, which merge eventually with the semivoluntary movements of puzzlement and confusion. Many experimental subjects assert that this behavior is without psychic content; some experience brief alterations of consciousness. The author demonstrates that fear, horror and anxiety involve facial expressions nearly opposite to those of startle. The molar aspects of this behavior are analyzed in terms of Lewin's field theory. (PAUL W. PRUYSER, PH.D.)

Release from Sexual Tensions. By MARY STEICHEN CALDERONE. \$4.95. Pp. 238. New York, Random House, 1960.

A more sensible yet scientific discussion would be hard to find. It gives lucid, adequate answers to the questions commonly asked about marriage problems, ranging from contraception to hostility, from education to religion. Doubtless no book can produce a happy relationship, but this work can be of vast help with its iteration of the theme, "Sex is good." The collaboration of professional science writers Phyllis and Robert Goldman introduces a strong note of reader appeal. (NELSON ANTRIM CRAWFORD, M.A.)

Child Development and Child Psychiatry. Psychiatric Research Report No. 13. CHARLES SHAGASS AND BENJAMIN PASAMANICK, eds. \$2. Pp. 225. Washington, D.C., American Psychiatric Assn., 1960.

This is a compilation of papers presented at a regional research conference on child development at the State University of Iowa, paying tribute to

Arnold Gesell on his eightieth birthday. The first paper, a historical review by Dr. Leo Kanner, establishes Doctor Gesell in his proper and important place in the development of child psychiatry. Altogether there are nine papers, each followed by discussion. The papers and the discussions are of high caliber. Most of the authors are well known in the investigation of child development or in child psychiatry. (Antonio Fueyo, M.D.)

The Psychotherapy Relationship. By WILLIAM U. SNYDER. \$7.50. Pp. 418. New York, Macmillan, 1960.

By intercorrelating scores from several self-administered scales, the author explores the psychotherapeutic relationship between himself and 20 clients, including forms of transference and countertransference. The author's conception of various psychotherapies is an exaggeration of what some therapists of different theoretical persuasions "do" with their patients, and may, in part, account for a principal finding that the author prefers to work with a client who is "friendly, moderately active, and communicative," since with such he can feel comfortable in his role as a "good parent." Psychoanalysts will find his treatment of transference naïve. Researchers in psychotherapy may find in Snyder's data helpful leads that could generate testable hypotheses about psychotherapeutic processes. (PHILIP S. HOLZMAN, PH.D.)

Tests in Print. OSCAR KRISSEN BUROS, ed. \$7. Pp. 479. Highland Park, N.J., Gryphon, 1961.

This unique comprehensive bibliography lists 2,104 tests now in print, used in education, psychology and industry, ranging from Style of Mind Inventory: Trait, Pattern and Belief Patterns in Greek, Roman and Judaeo-Christian Perspectives to Truck Driver Test 60-A. Some 800 out-of-print tests are also listed. A reference volume highly useful to the professional—and amazing to anyone not fully conscious of the magnitude and variety of testing. (Nelson Antrim Crawford, M.A.)

A Study of the Psychiatric Nurse. By AUDREY L. JOHN. \$5. Pp. 239. Edinburgh, Livingstone, 1961.

A clear and sincere study of the mental nurse is observed in four British hospitals. "Type of Work Carried Out by the Mental Nurse and Problems Arising," "Type of Patient," "Communications," "Morale," "Recruitment, Selection and Training" are a few of the stimulating and meaningful areas discussed. Such essential qualities of personnel as sensitivity, understanding, emotional stability, genuine desire to contribute toward the recovery of the patient are important qualities presented as necessary in providing a therapeutic environment. Thoughtful attention to the content of this book should offer the nurse greater understanding and satisfaction in her work, which in turn will provide greater benefits in skilled care for her patients. (Adria L. Brown, R.N.)

The Phenomena of Depressions. By ROY R. GRINKER, SR. and others. \$6.50. Pp. 249. New York, Hoeber, 1961.

This is an exciting book. Weary of clichés, stereotyped dynamic formulations and glib theorizing, Grinker and associates have carried out a model research on the phenomenology of depression. Psychiatrists will be chagrined to note how inadequately they make and record their observations; they will find re-

freshing the insights that can be gained through careful clinical scrutiny and accurate, detailed description. The authors have teased out a number of constellations, combinations of various factors and variables, which cry out for further validation and correlation with genic, developmental, biological, biochemical and other clinical data, leading to deeper more complete understanding of the causes, natural history and treatment of various types of depressions. (Jerome B. Katz, M.D.)

The Vermont Story. By RUPERT A. CHITTICK and others. Pp. 105. Burlington, Vt., Queen City Printers, 1961.

A report of vocational rehabilitation of chronic schizophrenic patients with generally favorable and in some cases dramatic results. It shows how a comprehensive social psychiatric program can be fitted into the organic development of a modern state hospital. Especially interesting and illuminating are the quoted comments of patients. (Nelson Antrim Crawford, M.A.)

Behaviour. By D. E. BROADBENT. \$4.50. Pp. 215. New York, Basic Books, 1961.

I wish I could have read this book fifteen years ago, when behaviorism (*Psychologie ohne Seele*) was disposed of with a flick of the finger by the lofty Continental professors who taught me the principles of psychology. But perhaps this sophisticated, balanced and very thoughtful book could not have been written then. Broadbent, a Cambridge psychologist, presents behaviorism, its spirit, methods, technology and the major problem areas it has seen and attacked in an interesting way. He presents its subtleties lovingly, from the Law of Effect and its many modifications in animal learning to the question of motivation in purposive human behavior. It is the sort of book which should be read in that phase of despair when potential psychologists become needlessly lost to other professions as the result of certain types of undergraduate courses in learning theory which present so many dead or stunted trees that one fails to catch a glimpse of the living forest. (Paul W. Pruyser, Ph.D.)

Fundamental English for Effective Speaking and Writing. By EUGENE H. SLOANE. \$1.95. Pp. 118. Annapolis, Md., Owl Press, 1961.

Scientific writers needing a review of the basic techniques of the English language can hardly find anything better than this little self-help book, already adopted in a number of colleges. It really makes grammar, spelling, and punctuation simple. Doctor Sloane, psychologist and semanticist, is author of the fascinating but scholarly *Words and Their Ways* and *Psychology for Living*. (Nelson Antrim Crawford, M.A.)

The Historical Development of British Psychiatry, Vol. 1. By DENIS LEIGH. \$10. Pp. 277. New York, Pergamon, 1961.

A valuable pioneer work by the editor of the *Journal of Psychosomatic Research*. Viewing the eighteenth century as the beginning of "moral treatment," Doctor Leigh starts his book with this period and goes on through the nineteenth century. The achievements of Haslam, Prichard, and Conolly are described at length. Reference to Maudsley is confined to quotations from his historical works; perhaps the author intends to cover him in the next volume though he

did his major work in the nineteenth century. Old and rare prints illustrate the book. (Nelson Antrim Crawford, M.A.)

Capital Punishment. By JAMES AVERY JOYCE. \$5. Pp. 288. New York, Nelson, 1961.

The author is an international lawyer and economist well-known to the readers of the *Nation* and *Saturday Review* because he has long championed civil liberties, penal reform, and adult education. This book begins with a stirring review of the Chessman case, attacks capital punishment from all angles in all ages, and shows the progressive, steady progress of its abolition. Such chapter headings as "The Cult of Terror" and "The Myth of Deterrence" indicate the trend of thought. (K.A.M.)

Creativity and the Individual. By MORRIS I. STEIN AND SHIRLEY J. HEINZE. \$10. Pp. 428. New York, Free Press, 1960.

This annotated bibliography of 300 titles provides a useful source book for someone interested in surveying an important segment of the literature on creativity and the creative process. The annotations are prepared with care. Summaries of books and papers frequently run to several pages in length. Some of the psychoanalytic literature is covered. The book lends itself to quick and useful browsing. (Martin Mayman, Ph.D.)

Teaching of Psychiatry and Mental Health. Public Health Papers No. 9. By MANFRED BLEULER and others. \$2. Pp. 186. Geneva, World Health Organization, 1961.

Papers by teachers of psychiatry from various parts of the world concern the attempted integration of psychiatry and mental health teaching into the medical curriculum. Time allocation, methods, and subject matter vary in each country in accordance largely with the beliefs of the medical faculties, partly with the needs of the people. It is encouraging to learn of increasing progress in introducing psychiatry and mental health teaching to broaden the "scientific attitude" into a more comprehensive view of man and to attract more specialists into the field of psychiatry to help with the problems of the mentally ill. (Herbert Klemmer, M.D.)

Sensory Communication. WALTER A. ROSENBLITH, ed. \$16. Pp. 844. New York, Wiley, 1961.

Thirty-eight papers presented at a symposium on principles of sensory communication at the Massachusetts Institute of Technology in 1959 represent the thoughts of some of the most eminent research scientists in engineering, neurophysiology, and psychology. This material is not for the amateur or casual reader. A formidable knowledge of mathematics and physics, together with a critical background in physiology, is essential to enable one to grasp the detailed as well as the ramifying aspects of the symposium. Coding, screening, relay, and integration systems, with some material from many levels of the nervous system, as well as some external systems, are included. Vision, hearing, smell, taste, and touch are investigated. For the interested qualified reader, an imposing work. (Joseph M. Stein, M.D.)

Freud's Concept of Repression and Defense, Its Theoretical and Observational Language. By PETER MADISON. \$4.75. Pp. 205. Minneapolis, University of Minnesota Press, 1961.

This book owes its existence to a remarkable experience of an academic psychologist to whom psychoanalysis was just another outdated psychological theory, already solidly replaced by neo- and post-Freudian ideas. Spending a summer with the psychiatric staff of the Pennsylvania Hospital, the author discovered much to his embarrassment and surprise "how psychoanalytic psychiatry had become." Ensuing study of Freud's writings convinced him that there is no theory of personality in psychiatry genuinely independent of Freud's work. Most of the book is an attempt to arrive at a systematic statement of Freud's theory of defense based on the often vague and apparently contradictory statements scattered throughout the whole of Freud's works. This survey, with extensive quotations from Freud's writings, is an outstanding example of constructive criticism. A smaller part is devoted to the observational language of defense and the validation of the theory, also worth reading. (H. G. van der Waals, M.D.)

An MMPI Handbook: A Guide to Use in Clinical Practice and Research. By W. G. DAHLSTROM AND G. S. WELSH. \$8.75. Pp. 559. Minneapolis, University of Minnesota, 1960.

This compendium convinces the impartial psychological examiner of MMPI's diagnostic value in skilled hands. A central viewpoint is that the MMPI is no substitute for the clinical judgment of the psychologist—his inferences must still be based upon a firm grounding in psychodynamics and behavior theory. Considering such requirements, however, the authors argue that the scales of the MMPI can offer valuable additional data in understanding the personality dynamics of the patient—both by validating and complementing the data from the unstructured projectives and the more structured intelligence-type tests and through making use of the individual symptom-complexes revealed on the MMPI in the total psychoeconomy of the patient. (Elizabeth H. Faulk, Ph.D.)

Progress in Neurology and Psychiatry, Vol. 16. E. A. SPIEGEL, ed. \$12.25. Pp. 617. New York, Grune & Stratton, 1961.

The editors and publishers call it progress, and we all hope and believe it is. Over 4,000 papers are reviewed herein and this issue also contains certain topics only biennially included such as "general neurophysiology, biochemical aspects." It is a useful and valuable compilation—even if, now and then, some of the abstractors tend to editorialize (as on page 499). (K.A.M.)

Man's Picture of his World. By R. E. MONEY-KYRLE. \$4.50. Pp. 190. New York, International Universities, 1961.

A penetrating psychoanalytic study of man's development, with applications to esthetics, ethics, politics, and international affairs. The author's view is cautiously optimistic. "Most of man's troubles," he says, "result from his irrationality, and would disappear if, through analytic knowledge, the unconscious paranoid-schizoid and hypermanic elements in his world-model could be brought to light." In addition to Doctor Money-Kyrle's breadth of observation and practical application, noteworthy is his simple, reasoned explanation and defense of psychoanalysis. (Nelson Antrim Crawford, M.A.)