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INTRODUCTION
TO MEDICAL PSYCHOLOGY

INTRODUCTION TO MEDICAL PSYCHOLOGY

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DISTRICT OF COLUMBIA



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PREFACE

FROM 1935 until 1942 I taught ~~psychiatry~~ ^{psychiatry} to undergraduate students of Louisiana State University School of Medicine. As in other acknowledged medical schools, a course on medical psychology was included in the curriculum for sophomores. In view of the importance of this course, which is generally recognized today, I was puzzled by the fact that there was no textbook available which would enable the student to familiarize himself with a subject practically unknown to him. None of the numerous basic textbooks on psychology would do: they are written for future psychologists who, starting from their course on general psychology, will branch out into clinical psychology, social psychology, genetics, psychometrics, abnormal psychology, etc. What was needed was a short text written with the future physician's specific psychological requirements in mind, not just an "introduction" to psychiatry or mental hygiene; nor, on the other hand, an elaborate treatise on psychological technics, statistics, etc., so essential for the training of psychologists.

To satisfy this need for my students, I prepared scripts of my lectures and distributed them in the class. Although it is obvious that the study of scripts or textbooks will never be an adequate substitute for teaching in class, it is a necessary supplement of the latter, rounding up and integrating knowledge gained in lectures and seminars.

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From those lectures, which have been built up and improved by trial and error during eight years, this book has developed. It may prove useful to undergraduates of other medical schools; furthermore, I am hoping that it may also fill the postgraduate needs of all those practicing physicians who are realizing, on an ever increasing scale, the importance of psychological training in medicine.

I am indebted to Julius W. Friend, New Orleans, for his most valuable advice and help in writing this book.

L. ERWIN WEXBERG, M.D.

WASHINGTON, D. C.

MAY, 1947

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TO MEDICAL PSYCHOLOGY

INTRODUCTION

TO WRITE the history of medical psychology would be to write the history of medicine itself. Indeed, it is much older than scientific medicine. The magician or medicine man who took care of the sick in a primitive tribe based his curative technic upon ancient beliefs. Today we would call them superstitions, since modern medicine has not verified most of his methods. Those weird infusions and decoctions prepared under certain magical conditions cannot stand the criticism of science any more than the corresponding methods of diagnosis.

However, it stands to reason that those ancient methods did get results in some cases; otherwise people would not have believed in them. We do not even have to go far back in the history of medicine to find examples of therapeutic methods which seemed to work miracles in the hands of those who devised them and which were found to be quite ineffective a few years later. This happens even today and will happen again. To a large extent, it is due to errors of observation, of judgment, or of statistics, but not altogether. There is no doubt that cures have been achieved with physically ineffective methods, and not just in cases of imaginary disease. We are accustomed to attribute them to the power of suggestion, which is a psychological process. It is closely related to the power of faith, which accounts for the practical results of

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Christian Scientists today. The same mechanism holds for magic medicine of old times. The fervent belief in the spiritual power represented by the priest or magician was the force acting within the patient himself which was responsible for the cure. This certainly may be called a psychological factor, and the art of healing based upon faith or suggestion is to be considered psychological medicine.

Naturally, magicians and healers of all kinds have never been aware of those mechanisms to which their results were due. They firmly believed in the material efficacy of their methods, whether they were drugs, magic formulas, or religious dances and songs intended to drive out evil spirits. In fact, they probably would never have had any results but for the fervor of their own convictions. They did not know what they were doing, but only that they had to apply a certain technic and that it worked—sometimes. To answer the question *how* it worked is a subject matter of a rather young science—medical psychology.

Once medicine went into the field of psychology, it was not satisfied just with studying the mechanism of suggestion. It soon became evident that the area to be covered by medical psychology was much larger than that. There was the problem as to what extent, and how, psychological factors contributed not only to the cure but also to the development and course of disease; the importance of psychological factors, particularly of emotions, in the physiology of the normal; and, in reverse, the psychological implications of physical conditions, such as diseases of the endocrine glands or of the autonomous nervous system. Furthermore, intensified study of normal psychology became necessary in order to advance our knowledge of psychopathology. Just as the study of anatomy and physiology is needed preparatory to pathology, a thorough knowledge of mental processes in the normal individual is required for

understanding the mechanisms of psychoneuroses and psychoses.

Early in the nineteenth century, just about the time when scientific psychiatry emerged from a prescientific stage, experimental psychology was born as a branch of physiology. Throughout the nineteenth century it was carried on in physiological laboratories, reaching its climax in the work of Wilhelm Wundt, who taught physiological psychology at the University of Leipzig up until the end of the century. As an experimental science, it remained aloof from psychiatry and contributed little to the requirements of clinicians. The practicing psychiatrist, on the other hand, being in need of psychological concepts in order to describe and to systematize adequately his observations on the mentally sick, had to make up his own psychology. It was a rather crude construction, mainly derived from ideas of philosophers interested in epistemology (the theory of knowledge), but it was grossly adequate for the purpose of systematics and diagnostics in the differentiation of various forms of mental diseases. This was the development of classical psychiatry, and its main representative was Emil Kraepelin.

Up to that time—the early twentieth century—psychologists and psychiatrists had very little to tell each other. In fact they hardly realized that they were studying the same subject matter with different methods of approach. Psychologists criticized psychiatrists for using unscientific methods and for the utter neglect of the principle of measurement basic in every branch of science; whereas psychiatrists blamed psychologists for their aloofness in psychological problems outside the laboratory and for their inadequacy in predicting the behavior of a given person in a given situation in actual life. Both were right.

Then things began to happen on both sides of the fence.

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In the nineties, Sigmund Freud, a psychiatrist who had received valuable postgraduate education in France (Charcot, Bernheim), developed the psychology of the unconscious mind. Starting with clinical observations on cases of psychoneurosis, particularly hysteria, he soon encroached upon the field of normal psychology, dealing with the psychology of dreams, of errors and forgetting, and of humor. An entirely new approach to normal child psychology became the basis of Freudian psychopathology. As could be foreseen in pioneer work of that kind, he met with furious opposition from both psychologists and psychiatrists. Both accused him of using unscientific methods. However, after about twenty-five years of debate it turned out that Freud's method of psychoanalysis—though not necessarily his theory—was here to stay. Today, neither psychologists nor psychiatrists can ignore it.

By the same time, or somewhat later, psychologists began working with new experimental methods closer to real life than their laboratory experiments had been and, in addition, easier to understand in terms of medical research. In this country, Watson devised his method of behaviorism, based on previous studies of the Russian physiologists Pavlov and Bekhterev. The groundwork of Watson's approach was revolutionary: he did away with the traditional psychological concepts of sensations, perceptions, ideas, etc. As they were all based on subjective experience only, he questioned their validity. Behavior was interpreted in terms of congenital and acquired reflexes. Thus everything mental, whether cognitive, emotional, or volitional, could be approached in observation and experiment as "behavior." Again, as in the case of psychoanalysis, the school of behaviorism was attacked and criticized, and again it turned out that its viewpoint and method were here to stay, even though its theory remained in doubt.

Today, the deadlock between psychiatry and psychology

has been broken, mainly due to psychoanalysis and behaviorism. Psychoanalysis is just as much concerned about normal psychology as behaviorism is about psychopathology, each of them using its own methods of approach, observation, and interpretation. They have met on the common ground of Human Life and are beginning to talk a common language.

This integration of scientific endeavor is a natural consequence of the growing insight into what has been called “*unitas multiplex*,” or multiple unity, of the human mind. There are, it is true, various levels superimposed upon one another, every one of which calls for a different form of approach. When walking from my office to the hospital ward, I am making use (1) of the *optical* apparatus of my eyes; (2) of the *chemical* processes going on in my retina; (3) of *biological* mechanisms involved in muscular contractions, in transfer of nervous energy, and in motor impulses produced in the cerebral cortex; (4) of *mental* processes such as orientation in space and visualization of my goal, in focusing attention to staircases, corners, and turns in my way, and in my memory of previous trips. This is only a small fraction of those processes involved. In fact, a complete description of all of them might easily fill a book, leaving blanks in those phases which are not yet known to science. The sum total of those various levels of existence can be compared to a pyramid, the top of which is formed by the ego. The latter, in turn, is determined by an indefinite number of sociological factors which determine a person’s action. They would, in the example given above, comprise my motivation in going to the hospital ward, what I intend to do there, and why. Thus, we are dealing with a hierarchic scale of levels of integration, with the *whole* determining its parts, all the way from society and person down to physical processes.

This viewpoint, called the “holistic approach,” is gaining

momentum in today's science of Man. It has, on a limited scale, first been emphasized by the school of Gestalt Psychology. Its students proved experimentally that even processes apparently as elementary as perception of an object by sight, hearing, or touch, are not just pure sensations. Perception means perception of a whole, a "Gestalt," or configuration, an organized unit which is different from, and more than, the sum total of its sensational elements. The same holds for memories, for actions, for social processes, for everything going on in human life. There are Gestalten, or organized patterns, in emotional experiences, in a mother's attitude towards her child, in a soldier's bravery in combat and another one's cowardice, in the shaping up of a businessman's or a politician's career, in the religious experience of a convert.

The particular type of behavior, or experiences, as it is found on a certain level, determines the viewpoint of the student dealing with it. He has to be a chemist, a physicist, a biologist, a psychologist, or a sociologist, etc. Naturally, on the top level, that of the person as related to the community, psychological research is closest to actual life. There it is dealing with human aims and purposes and motivation of a person's actions. Most valuable observations have been made, in that respect, by poets and writers, in a prescientific way. However, when it comes to exact evaluation of results and to measurement, most of our present methods are still inadequate. This is largely due to the fact that behavior patterns on the highest level cannot easily be duplicated under simplified laboratory conditions. Therefore, the material consists only in systematic observation of actual behavior and description of actual experience in life, and in test material which is related to the person's real life but is not real life itself. The intimate ties existing between the individual and the community were

emphasized by Alfred Adler and his school of Individual Psychology. Their ideas proved to be of decisive importance in the new field of *mental hygiene*, particularly as related to children. From the practical point of view, this opened the field for preventive work in psychiatry. Behavior problems and delinquency in children had to be understood in terms of human interrelation and social motivation. These children, while not actually sick, are potential psychiatric cases when grown up. Here is where the most beneficial cooperation developed between psychiatry, psychology, and sociology. Child guidance clinics are now being conducted by teams of psychiatrists, psychologists, and psychiatric social workers, with the tasks of diagnosis, counseling, and treatment equally divided among them. Naturally, their work is not limited to the children. Recognizing the importance of environmental factors in the emergence of behavior problems, the child's parents have to be educated for their educational assignment. Whenever necessary, they have to be treated themselves in order to remove emotional difficulties interfering with their part in home education. After the model of child guidance clinics, similar teams are engaged in schools, in juvenile courts, and family relations courts. Social agencies dealing with family welfare are availing themselves of psychiatric and psychological services in addition to their own social workers' staffs on an increasing scale.

From these developments, the clinical psychologist emerged as a new category of professional worker. As such, the psychologist took the ultimate step out of his laboratory and into real life. Provided with a battery of personality tests in addition to improved forms of intelligence tests, he is trying to give as much mathematical exactitude to psychiatric diagnosis as can be expected on the social and personal level. At the same

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time, he has entered the field of treatment, particularly of children with behavior problems, in close cooperation with the psychiatrist.

At this juncture, it is felt that medical students need more than casual knowledge of psychological concepts and methods. This holds not only for future psychiatrists but for medical men at large. Psychosomatic medicine has gained momentum in medical literature of recent years. The idea that physical signs and symptoms of disease may be co-determined by emotional factors is not altogether new. However, the advancement of psychiatry and psychology as described above was necessary to make this knowledge workable in medical practice. Once this has been accomplished, it cannot be confined any longer to psychiatrists. At least 50 per cent of the cases in a general practitioner's office are said to belong to the field of psychosomatic medicine. The physician cannot possibly turn over one-half of his cases to the psychiatrist for treatment. Hence he ought to be able to apply psychiatric methods himself, other than those suggested by common sense, which cannot be taught. In fact, there are no strict borderlines between clearly somatic and psychosomatic conditions. Therefore, psychology is one of the skills needed by the physician at the bedside, no matter what the condition may be. The old slogan that we do not have to treat sickness but sick persons is now being put into effect by teaching medical men how to understand not only pathology but personality.

Just because of this particular part played by psychology in the curriculum of medical study, a course in medical psychology has to be different from the way psychology is being taught for students of psychology. Our main concern is about the person in his relation to his social environment, i.e., on the highest level of integration. The text will have to start with that. From there, it will have to work downward to study the mechanisms

of lower levels which are available for the person's adjustment.

The first chapter of this book will therefore be devoted to a subject matter which is usually covered by social psychology.

Individual and Community

CROSS SECTION OF A MAN'S LIFE

JOHN SMITH is a student of medicine in New Orleans, Catholic, born in Louisiana, the son of a merchant in a small town. There are several facts combined in this description, every one of which involves certain aims and, accordingly, certain activities. Being a student of medicine, John is particularly interested in that subject, like hundreds in the school which he attends, like thousands in this country and all over the world. Medicine represents a definite system of ideas which, in turn, involve certain similarities of thought, of language, of feeling, even of perception, more or less identical to all medical people. Is it correct to state that John's behavior is determined by his being a medical student? Partly so, but not altogether. To some extent John may think, talk, feel, and act like other medical students, and therefore he is "conditioned" by his professional position. But, on the other hand, we must not forget that John does not belong to the medical school as a sheep belongs to its flock, or a primitive tribesman to his clan. He, John, has decided, by his own choice, to become a doctor. In case he chooses today to give up medicine, this change of decision would soon reflect in his behavior. Within a very short time, John would cease to think, to feel, or to act as a medical student. This proves that John's

being "conditioned" as a medical student positively depends upon his own will.

Another fact mentioned in our description of John was that he is Catholic. This again involves certain aims, or values, which, to some extent, are conditioning his behavior. He grew up in the Catholic faith, went to church every Sunday, received his First Communion when thirteen years old and, since then, regularly went to Confession. This makes him belong to the Catholic Church, a community which is spread all over the world. His faith determines, to some extent, his ways of feeling, thought, and action, the more so since childhood impressions and the influence of his home are involved. Again, however, it is obvious that the historical fact of John's being raised in the Catholic faith would not account for much unless it were revalidated every day in his present life. John may have become keenly interested in religious problems since he has grown up and may have filled the religious habits of tradition with the vivid content of his own thought. He may have, on the other hand, rebelled against those religious ideas which he had accepted without independent thinking in early childhood and have developed a philosophy opposed to Catholicism. Or, finally, he may have become indifferent toward religion, as so many do, going to church on holidays merely because he is used to it. Thus the intensity of his adherence to his religion is eventually determined by himself, or we might say, he is as much of a Catholic as he wants to be.

Furthermore, John has grown up in his family, his father being a merchant in a small Louisiana town. The implications of this part of his social personality can be defined similarly to the previous ones. The cultural background of the middle class of the South, the ideas and habits of small towns, the economic structure of a merchant's family—all these determined the family life in which John received his early

childhood impressions. The "do's" and "don'ts" of his education were those usual to families of that social level and so were his clothes, his nourishment, his table manners, the toys he got at Christmas, the books he read, his schooling, etc. Here is another set of values, among the most powerful ones. One would have to show how much his speech has been influenced by his cultural background, his social and political ideas, the strength of his emotional relation to his family, his solidarity with people of his own class, etc. There is, however, not even one item within the long list of his cultural and social loyalties which is not subject to his own decision. From a middle class milieu may develop great bankers and industrialists, men of science, artists, or gangsters. Among John's former schoolmates there may be people denying the rules and customs of their younger days, Bohemians with disorderly conduct, great cultural leaders establishing new values, criminals, and conservatives fighting against any progress or change. The degree to which any one of them reflects his cultural background is not determined by the latter.

It is unnecessary to continue this analysis of John's social position in all details. Obviously what holds for his professional, religious and social background, holds equally for the rest of his motivations. Every one of these data can be symbolized by a circle, or a system of circles to which John belongs and which are either concentric or overlapping one another. If you consider that these data are only a small part of all those essential for John, that, for instance, he probably belongs to a fraternity, to a political party, that he is a fan of some baseball team, that he has particular interests in sport, music, literature, or art in common with others, you may imagine that the picture of his social personality, when symbolized by overlapping circles, must be exceedingly complex, just as complex as human society itself.

SOCIAL GROUPS AND CIRCLES OF VALUE

Let us summarize some essential rules.

1. Those overlapping groups to which an individual belongs are "unified pluralities" ("We") of which the individual is a true member (Koffka). They may change as to their single members and yet remain the same. What defines a group is some common quality which codetermines a member's behavior, once he has joined the group or considers himself to be a member of it.

2. Groups may be large or small, strong or weak, more or less homogeneous, and more or less closed. Larger groups are usually stronger, in case they possess a sufficient degree of homogeneity and emotional appeal. The American Federation of Labor owes its internal strength to its relative homogeneity and exclusiveness combined with its largeness. The highest degree of exclusiveness, involving the highest possible degree of strength, is actualized in small groups (for instance, the family or a couple of lovers). Furthermore, groups may be temporary (for instance, a bridge party or attendants at a funeral) or relatively permanent. Temporary groups, while usually weak, may be of terrific strength, for instance, passengers on a sinking boat in a state of panic; this strength, however, is due to the biological factor of mass suggestion (see p. 131) and is of little sociological importance.

3. Every circle to which an individual belongs represents a particular system of *values*. These values are objective and extra-individual in their character, since they exist for a great many individuals at the same time or at various times. Their importance consists in the fact that they constitute the aims and purposes toward which human action is directed. Their unity, or the unity of an individual's "directional dis-

positions" (Stern) or conations, is called his *character*. This unity dominates his "equipmental disposition" (Stern), i.e., his biological functions, emotions, reasoning, memory, his mode of perception, etc. Some of them are stressed, others changed as to quality, inhibited, or distorted, so that they fit as far as possible into his conative pattern. The result of this modeling process is what we call an individual's *personality*. Since the conative pattern of an individual is identical with his range of values and since the latter are mainly socially determined, the conception of personality is valid only in social psychology.* Any definition of personality has to include three features: its *wholeness*, its *conative character*, and its essential *relatedness* to society. Biological factors are causal determinants of personality and so is environment.

Understanding personal motivation requires a genetic aspect. Early childhood environment impresses itself profoundly in a person's mind. An indefinite number of traits emerge from the interaction of biological and environmental factors. These traits—subunits integrated in the whole of personality—possess "functional autonomy" (G. W. Allport), which means that they have motivating strength of their own. A family constellation, for instance, in which rivalry between siblings causes jealousy to arise in one of them, may account for jealousy as a character trait which lasts when the original situation has passed long ago. Again and again the jealous person will meet with typical experiences likely to arouse his particular pattern of response. These experiences have stimulus

* According to F. H. Allport, personality comprises the individual's characteristic reactions to social stimuli and the quality of his adaptation. May defines personality as an individual's social stimulus value, i.e., his ability to serve as a stimulus for social responses from the outside. The latter, of course, is more or less determined by the individual's social adaptation. E. W. Gurgess defines personality as social effectiveness. G. W. Allport describes it as the result of interaction between organic cravings and environment. "Every person," he states, "is also a socius."

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value for him, though not for others, due to his organized trait of jealousy which makes him susceptible—allergic, one might say—to them. Every additional experience of the same kind, however, adds something to the rigidity and strength of the trait pattern. This way, personality grows from a point near zero, at birth, throughout childhood to the adult state. The ability to change habits and traits of character under the pressure of experience varies from person to person. There is a continuous range between the extremes of utter rigidity to the highest degree of pliability.

Personal relationships established in childhood tend to be remarkably stable. Most of us feel differently about our nearest relatives from the way we feel about other people. The ties of family relation account for the fact that, in an emergency, one will help his own brother rather than anyone else, even when realizing that his brother does not deserve help as much as others might. This feeling about family is, one might say, almost compulsory. However, it is never entirely so. To a considerable extent, it is up to John how much he feels himself tied up with his family. The moral code of the society to which he belongs plays an important role, distance another one. The "ties of blood" usually become very much thinned out when a boy lives, say, in this country while his parents are living in Europe. Personal experience in early childhood, adolescence, or later in life may contribute to an increase or decrease of loyalty toward one's family. The essential point is, then, that personal decision and the general trend of one's personality have a powerful influence even over those most compulsive loyalties of early childhood. The same holds for traditions, moral codes, everyday habits and traits of character which have been acquired, digested, and more or less involuntarily accepted early in life. All of us are being determined, to some extent, by these factors, which may almost

equal biological ones in strength; but we are able to, and often do, remotivate ourselves, be it even with some effort. The conflict between John's will to change an old habit and that habit itself is somewhat similar to the conflict between his desire to study late at night and his overwhelming sleepiness, or between his will to raise his arm and his inability to do so, in case his arm is paralyzed. However, there is an important difference of degree: He can do nothing against organic palsy. He *can* do a little bit against sleepiness when he really wants very much to do so, and he can do a lot to break a habit.

If now, based on these considerations, we try to define the relation between the individual and his social environment, we have to state that it is a twofold relation. On the one hand, the individual *is being determined* by social factors in the same way as he is by biological ones; natural kinship, traditions, customs, morals, religion, are conditioning his behavior to a large extent. On the other hand, he is able to *select* those social ties which suit his purposes, to join certain social units and to quit others, and to cooperate creatively in nurturing those social units which are valuable to him. The latter relation holds entirely for "artificial" forms of social units or associations, like clubs, legal contracts, professional societies. It also holds to some extent for those more "natural" ones which are rooted in the past, such as family, customs, morals, etc. But loyalty toward the "artificial" forms, once decided upon, is compulsive, too. We usually stick to our pledges.

RESPONSIBILITY

Man's purposive attitude on the one hand and his determination by external factors on the other represent two different aspects of behavior. How can we differentiate between

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them? This difference can be defined as that between *activity* and *passivity*. The distinction must not be confounded with that between motion and rest. There is no activity whatsoever in the movements of the heart or the intestines and not very much in the automatic function of walking or smoking a cigarette. On the other hand, when you keep still while the dentist is working on your teeth and causing you pain, you are very active in controlling yourself, by the very fact that you do not move. Obviously, to be active means to direct one's thought, memory, emotion and perception, as well as the motor apparatus and its control, toward an aim, whereas, in a passive attitude, we merely let the mechanism go automatically. Hence, it appears that in active behavior positive *responsibility* is involved. In a passive attitude, on the other hand, responsibility is only involved in a negative way: When I allow myself to be overwhelmed by temper, I am to be blamed for *not* having controlled myself.

The idea of responsibility has up to now been rather neglected in psychology as well as psychiatry. And yet psychiatrists are being called upon in court to give their opinion about whether the defendant in a criminal case is responsible for his action. In court it is usually most important to state whether the defendant was conscious when committing the criminal act and whether he remembers what he was doing. But consciousness and memory are not related to responsibility. The automatism of violent emotion may suppress consciousness and leave no trace in one's memory. Yet he may be responsible for having released the automatism instead of controlling himself, just as he is responsible for getting drunk. Neither violent emotion nor drunkenness would exonerate him. But if consciousness has been wiped out by a pathological process beyond his control, he is not responsible for what he did at that time. This holds, e.g., for an epileptic seizure.

Toxic conditions, such as drunkenness, violent emotion, or epilepsy, may eliminate consciousness and deeply impair mental functions on the biological level. The same functions, however, can be "blocked" by a purposive, though unconscious, mechanism. Just as we can close our eyes so as not to see what we do not want to see, we can inwardly "close our eyes," or block perception, thought, or memory, if it suits our purposes. Among these motives which account for blockage, pleasure and displeasure play a role but ambition, envy, vanity, fear, lust for power, etc., are even more important.

It is obvious, then, that responsibility exists for blockage, since it occurs by motivation. We are always able to "see" things without perceiving them, if we so desire. The purposive regulation of our cerebral functions reaches further than we usually believe and further than we gladly admit.

Moral responsibility is not the only one in kind. There is, e.g., intellectual responsibility. A mistake in scientific research is neither a sin nor a crime unless carelessness about practical consequences is involved. Accordingly, the community reacts differently: Whereas *moral condemnation* hits the sinner or criminal, a man who fails in science because of inadequate equipment *loses prestige* as a scientist. Cultural responsibility is involved when people disregard the code of manners valid in a certain country. They are either *laughed at* or *isolated* or both. People who do not acknowledge in their personal appearance the rules of cleanliness meet the *disgust* of their surroundings. The rule to be induced from these instances can be expressed as follows: The community reacts to every disregard or offense of its values by *devaluation* of the offender. Since a system of values lies at the center of every community, this reaction appears to be a normal and natural action of self-defense or self-preservation on the community's side.

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The importance of these sociological facts for social psychology is self-evident. Social values, it is true, are not merely psychological, but supra-individual. But being social values, they are validly part of the individual, too. Everyone who joins a community or remains loyal to it willingly identifies himself with that community, accepts its code, and incorporates it into his own personality. Therefore, every offense against the social code is, at the same time, an offense against himself. In case he himself is the offender, the reaction is that of *guilt* or *shame*. The essence of these reactions is again devaluation, this time inflicted on the person by himself. The feeling of guilt, which may be unconscious, imperils the very roots of a person's self and, therefore, expresses itself frequently as terror, anxiety, or fear.

Social value, then, exists not only in the outside world but also in the personality itself. Or, in other words, the boundaries between the individual and the community to which he belongs do not separate two different worlds from each other, since the same values are equally valid for both. Grossly these values can be divided into three groups: those of *ethics*, of *aesthetics*, and of *knowledge*.

ETHICAL VALUES

The group of ethical values covers all those actions determined by the individual's loyalty to anyone of those community circles to which he belongs. The order of ethical values is, at least, determined by two factors, that of the size of the social group and that of the urgency of the moral demand. The latter is mostly dependent upon tradition, and, while changeable in time, is nevertheless subject to inertia.

In every decision of a moral character, some value is being sacrificed to another one. The discrimination between

values is exactly what we mean when we speak of responsibility. A woman is married to a drunkard who mistreats her and her children. She finally decides to leave her husband and to start a new life with her children. In this case, the marital community is sacrificed to save a value which seems to be higher. As the woman cannot save both her marriage and her children's future, she chooses the lesser evil which, of course, is still an evil. Society reacts by backing her up, and she herself reacts with approval from her *conscience*, which is an inward representation of the social code. Conscience is created in every one of us by accepting the ethical code and by implicit cooperation in its maintenance. A code which loses the support of individual consciences is bound to die. The *values* actualized by particular codes are, of course, eternal, but the codes representing the values change, as customs change. They *are*, in fact, customs.

A peculiar interaction takes place. Man creates a moral code and keeps on creating it every day anew by his willing support. This code turns into a habit or a tradition which in turn conditions the children as they grow up. Thus, a moral code becomes a factor determining human behavior, as biological factors do. The individual who, for some reason or other, dares to neglect his own code responds with a feeling of guilt. He may try, with more or less success, to escape the punishment inflicted by his own conscience, by way of self-deceit: He may cover up his callousness in denying contributions to charity with the excuse that his duties toward his own family come first (rationalization); or he may justify a malicious attack against a political enemy by misinterpreting some previous action of the latter, implying that the enemy had struck first (projection). However, while he may for some time stave off the attack of self-reproach in his conscious mind, conscience will eventually catch up with him.

INTRODUCTION TO MEDICAL PSYCHOLOGY

Discussion of the problems of ethics proper is a subject for philosophy rather than psychology and, as such, is beyond the scope of this book. But it can be said that philosophical systems have tried and are still trying to solve the basic contradiction between collectivism and individualism, neither of which can answer, to the exclusion of the other, the basic questions of ethics. The final aim of ethics seems to be to establish motivation by community interest rather than individualistic goals. But, on the other hand, moral action entails individual responsibility which would be wiped out if individualism were discarded. The fact that, in psychological actuality, the problem of ethics cannot be solved does not, of course, prove anything against the validity of ethical values. Their validity lies outside the province of psychology.

Their real existence impresses itself upon our minds notwithstanding the fact that we are doing wrong all our lives, and that we usually get into contradictions when reasoning about ethics. The validity of ethical values is given to us directly whenever we are about to make a decision of moral relevance. We know the way, though we may be doubtful about its final goal. But we *know*, we do not simply *feel*. Even when we take it for granted that sometimes an intuitive, or affective, decision may be nearer right than a sophisticated analysis of the ethical problem, it would still be all wrong to endorse sentimentalism at the expense of reason. It is important to distinguish between real kindness and the well known weakness which dislikes to say no and gives in so as not to hurt anybody's feelings. The aim of the latter attitude is merely to avoid trouble or escape the dislike of others, whereas the aim of kindness is to give, regardless of one's self.

ESTHETIC VALUES

The code of esthetics plays a minor role in comparison with that of ethics. Nevertheless, it determines part of our everyday life, besides our artistic, literary, and musical taste. Here also interrelation between personal esthetic standards and their structuralization in traditional forms takes place. Our fashions in clothes, though created by Man, become his tyrants. Whosoever disregards them becomes ridiculous and reacts with a feeling of shame. On the other hand, courageous disregard of outworn rules, when backed by creative imagination, is capable of overthrowing them and replacing them by new rules. These, in turn, will then soon become established as fixed rules, or "style," relieving the individual of personal decision and responsibility. Our esthetic conscience thus follows the same psychological rules as our ethical one. Ridiculousness or disgust take the place of moral condemnation or contempt, and shame substitutes for the feeling of guilt.

VALUES OF KNOWLEDGE

The values of knowledge are oriented toward the ideal of truth. Knowledge, by itself, is a social function. Indeed, the very conception of it involves a "we," as a subject, not an "I." When something is only known to me and nobody else, it has to be *potentially* knowable to the social group to which I belong as a part or else it is mere imagination. This is what distinguishes hallucinations and delusions or dreams from real knowledge. The latter, therefore, is objectively real insofar as it exists beyond the individual's mind. There is identity of knowledge for all of us. Biased perception or reasoning implies a self-centered attitude with the emphasis shifted from the community to the ego. Incidentally, since our ego can

INTRODUCTION TO MEDICAL PSYCHOLOGY

never be altogether wiped out, knowledge is never quite unbiased but at best is approximately so. Personal responsibility, as far as knowledge is concerned, emphasizes honesty and objectivity. It requires us to accept proven facts as true, regardless of whether they suit our purposes. On the other hand, beliefs which have been held true by tradition are protected, to some extent, by social conscience, and their disapproval meets considerable resistance.

VALUES OF ABILITY

The values of ethics, esthetics, and knowledge are primarily social and, by implication only, include the individual. Opposed to them, in some ways, are the values of ability. Ability is primarily considered an individual quality, which has, however, essential social implications. The standard of ability is generally gauged—rightly or wrongly—by *success*. There is, however, an additional reaction from the community in the form of admiration for the capable and contempt for the unfit. To these, feelings of pride and of shame, respectively, correspond on the individual's side. In our present world, self-evaluation and self-esteem seem to be mainly centered around the standard of efficiency reached by the individual. Everybody wants to be as intelligent, clever, skillful, and energetic as possible; these qualities are considered as some kind of innate nobility, which warrants a high personal value without effort, whereas assets like diligence, conscientiousness, exactness, or reliability, being closer to the side of moral values, do not rate quite so high in the code of self-esteem. Of course, nobody wants to be blamed for lacking them. Still, human vanity is such that most of us prefer to attribute our accomplishments to genius rather than assiduity, and we would rather be lazy geniuses than diligent dumbbells.

Success, of course, is not directly related to real achieve-

ment and merit. Other factors being equal, however, achievement determines success, if only we make the idea of success large enough to comprise posterity as well as the contemporary world. Among other factors determining success, there are those which are considered antisocial, such as ruthlessness, cheating, or bribery. However, there are others which, while not directly related to the accomplishment, are nevertheless not without merit. Among several factories producing razor blades of the same quality, the one which does the best advertising job may win out. However, this success cannot be called undeserved, since the cleverness of the advertising manager is an accomplishment of its own. The ratio between deserved and undeserved factors of success is probably mainly determined by the social and economic structure of a given society and, in the long run, eventually decides its destiny.

PERSONAL IDEAL

The psychological factor involved in the sociology of values is the personal ideal. The ideal fostered by every child, adolescent, or adult is nothing else but the crystallization of the range of values accepted by him as applied to his own development. It is composed of values belonging to each of these four groups mentioned above; ethics, esthetics, knowledge, and ability. Naturally, it varies according to the individual history.*

* McDougall defines character as the embracing integration of sentiments, which "is achieved through the development of a master sentiment of 'self-regard,' which takes the form of a self-conscious devotion to certain selected ideals with which the person identifies himself. Not only does this devotion to certain ideals dominate and harmonize all other sentiments, but it is capable of extension and change so that a continuous and consistent growth of personality is assured. Failure to organize the system of sentiment units into a hierarchy with the sentiment of self-regard 'at the top' leads to mental conflict, neurosis, and in extreme cases to psychosis." (McDougall, *Outline of Abnormal Psychology*, Chas. Scribner's Sons, 1926, 525 f.)

Frequently—perhaps in the majority of cases—the ideal admitted is not the real one, which is unconscious. The latter can better be gathered from the observation of a person's behavior than from what he knows and tells about it. This inconsistency is due to the socially determined function of moral conscience which may be at variance with the goal of success actually aimed at. Since self-appreciation is largely dependent upon public approval, the individual tries to “have his cake and eat it too” by hiding his actual ideal behind an “official” one which is in perfect agreement with religion and ethics. Thus he may cheat society as well as himself, gaining success and, at the same time, public praise and self-approval. He takes advantage of the general worship of success which, once attained, makes the “Great Man” appear great in every respect, even in the moral one. Naturally, once arrived at the top, he has no more need of overtly antisocial acts; he can even afford to be kind, generous and considerate. Thus he helps to build up the legend of the Great Man, one of the essentials of the psychological structure of the ideal.

The potentially asocial and antisocial trends hidden behind the screen may be described by the two words *pleasure* and *power*.

PLEASURE

Pleasure can be derived from biological mechanisms. Sensory stimuli as well as proprioceptive sensations may arouse pleasure. More will be said about the physiological aspect of it in Chapter 3, “Emotions and Instincts.” For the role of pleasure in our range of values, the physiological pleasure quality of sensations represents only raw material and a basic pattern. The intrinsic relationship between the “pleasure” of drinking a glass of port wine and that of meeting a dear old friend or of discovering a first edition of Emerson's

Essays, which I have long been looking for, is not immediately evident.

Psychoanalysis attempts to solve this problem by way of the Freudian concept of sublimation. According to Freud, physical pleasure is always identical with satisfaction of some form of (sexual) libido. In the course of libido development, various organs may be temporarily the seats of libidinous satisfaction, or, as Freud calls it, assume the character of erogenous zones. This holds for the mouth, the organs of excretion, and the sex organs in the first place, but also for the nose, the eyes and ears, the head as a whole, the hands, various groups of muscles, etc. In the course of libido development (see Chapter 3 "Emotions and Instincts") most of these pleasurable potentialities are repressed because they are incompatible with our cultural standard. Adult sexuality is centered around the sex organs, with a few secondary erogenous zones (such as mouth or nipples) subservient, as supplying preliminary pleasure ("Vorlust") to the final acme focused in the sex organs. However, those erogenous zones which are subject to repression are not entirely eliminated. The erogenous character of the eyes may survive, in "sublimated" form, as curiosity, as the esthetic pleasure felt at the sight of a sunset or a picture; sublimated eroticism of hearing is hidden in the harmonies and melodies of music, that of our motor apparatus in musical rhythm, in the rhythm of poetry, or in the delight of a speeding car. A primitive, instinctual "repetition compulsion" survives in rhythmic regularity, in symmetry, and in the complex formal beauty of works of art, such as great architecture.

While some of these interpretations may be purely speculative, others seem to be well founded. It would be a fallacy, however, to assume that the genetic derivation of esthetic pleasure from some primarily erogenous zone is all there is to it. On the contrary, it can be taken for granted that the pri-

mary eroticism of hearing has very little direct bearing on the spiritual greatness of a Beethoven symphony.

It appears that the common denominator of all pleasurable experience according to Freud, "satisfaction," is just as outspoken in primitive as in somewhat more complex experiences. "Satisfaction" involves a dynamic pattern of tension and release. This, of course, is most obvious in primitive instinctual experiences, such as hunger, a tension that increases until it is pleasurably released by the satisfaction of food intake. The dynamic pattern of satisfaction is not noticeable at all in sensory experiences, such as the pleasantness of a warm bath. Again, it reappears on a large scale in pleasurable experiences of less physiological character, such as the skillfully pent-up tension of a mystery thriller, book or movie, followed by the most satisfactory release of the final revelation of "who done it," or, on a much higher level, the tension and release pattern of a Shakespearean tragedy or of great music which builds up in musical symbols of emotion to a climax, followed by relaxation in peaceful harmony.

A problem of its own is the specific pleasure derived from *humor*. The psychological questions connected with this subject are too complex to be discussed here. It can be pointed out, however, that the general tension-release formula applies for quite a number of humorous experiences. It is rather obvious in the comical story or joke, the effect of which so much depends upon whether it is well told, slowly building up tension to the point of sudden release. What happens, psychologically, in that crucial moment which precedes the laughter, has been expressed quite aptly by the formula "perplexity and enlightenment." This holds quite clearly for puns: The short period of puzzled reflection needed to grasp the ambiguity of a word is essential for the pleasure which follows the sudden understanding.

In a deeper and more important sense, tension and release are active in the kind of humor called "grim humor," which enables us to overcome the tension of a tragical situation. It is this particular sense of humor which is generally considered the mark of a courageous soul not to be subdued by any kind of adversity. In a sense, there is probably a tragic undercurrent in every great humor.

Many instances of pleasurable satisfaction in real life are quite similar to those in music and poetry. The tremendous release felt in success which follows the long drawn-out toil and suffering of years is an experience different from, and deeper than, the gratification of making a few thousand dollars in the races. On the other hand, it is the same pattern of tension and release, on a more superficial level, which furnishes the appeal of gambling. Another step downward on the scale of values, there is the satisfaction of drinking or of taking drugs. Here again the tension is represented by the craving which is invariably present in the wake of a persistent use of habit-forming drugs. With what may be described as a trick, the addict may replace unpleasant tensions for which he has no release—an unhappy marital life, frustrated ambition, et al.—by the releasable tension of his craving for whiskey or morphine, which is followed by the tremendous pleasure and release due to the drug. It seems that partial or even total loss of consciousness is quite essential for the climax of satisfaction, the way it occurs in the sexual orgasm or in intoxication. Impairment of consciousness, on such occasions, is the result of complete relaxation, just as in normal sleep. The latter, however, is not preceded by any tension, except the mild one of tiredness, and has, therefore, a more flattened curve of satisfaction.

From the standpoint of cultural psychology, the type of satisfaction preferred by a person, or his taste, is largely con-

sidered one of his most important characteristics. Within a given cultural sphere, there generally exists some agreement about tastes. The average American in the Southern States, for example, enjoys good food, a good drink from time to time, sexual satisfaction, moving picture shows, a fishing trip on a week end, social gatherings, music, art, and literature at levels varying with his educational background. Obviously some of these aims cannot be entirely attributed to mere pleasure-seeking but include other values. In the enjoyment of a social gathering there are, besides the pleasures of the senses or of "having a good time," social ambition, vanity, friendship as a true social value, and possibly others. The inadequacy of our knowledge about these facts is, in part, due to the broad use of the word "satisfaction." We use it for the entirely physical gratification of eating when hungry and for the feeling of happiness when we meet a friend or a sweetheart; we use it for the gratification which ensues when someone tells us pleasant things, flattering our vanity, and when we have accomplished some valuable work. In other words, everything pleasant and every fulfilment of a desire is called satisfaction. When understood in this broad sense, however, satisfaction is *not* identical with pleasure. While it is true that we generally seek to prolong pleasure and to get rid of displeasure, there are innumerable aims of ours which could not be explained in this way.

It is useful, then, to restrict the term "pleasure" to three distinct forms of experiences to which it is usually applied: (1) the sensuous pleasure derived from bodily feelings; (2) leisure-time activities as opposed to professional work and duty; (3) "luxury," i.e., everything which is consumed beyond the immediate requirements of biological needs. The first is pleasure in its stricter sense, whereas (2) and (3) cover experiences which are pleasure only under the aspects given above. The psychological meaning of gambling, for instance, is not

covered by terms such as "enjoyment" or "pleasure." It contains, at the same time, the attempt to dare destiny and, in case of success, to acquire by some trick material values which people ordinarily have to work for. Luxury is valuable not only because of the pleasure derived from it, but also because of additional self-appreciation arising from the mere fact that one "can afford it."

Thus pleasure as a program and as a practical philosophy, which might be called a hedonistic attitude toward life, includes much more than pleasure itself, namely, satisfactions of various kinds or of various cultural levels which increase the importance of the aim of pleasure as tributary waters increase the main stream. It appears that pleasure hunger, by itself, is asocial in its character and, when increased to greediness, frequently has antisocial implications. Yet it cannot be overlooked that it may also promote social feelings. A man in a happy mood is more apt to love his neighbor than when he is moody and dissatisfied. He is generous and more ready to appreciate his fellows' good qualities and to forgive their errors. Moreover, his own happiness tends to spread over his surroundings, making other people feel about him and about one another as he does about himself.

POWER, AMBITION, AND VANITY

The other potentially antisocial trend is *lust for power*. Again it has to be stated that power is not necessarily antisocial. In an organized society, distribution of labor means, to some extent, distribution of power. The sphere of influence of a person is objectively determined by his social relations. Insofar, therefore, as it is objectively justified, power is necessary and useful, and he who uses it in accordance with the requirements of the social group which gave it to him obvi-

ously cannot be wrong. At the same time, he has the courage to carry the responsibility connected with his position. The one who is too much concerned about himself is likely to dodge, whenever failure is possible, and to shift responsibility. Fear of defeat is often combined with lust for power or selfish ambition. Naturally, excessive personal ambition cannot bear failure and defeat. An active person cannot help being wrong at times, and, in the long run, has to meet failures as well as successes. By implication, it is true that a man who can boast that he was never defeated usually is a coward who never dared to stick his neck out because of excess ambition.

Psychoanalysis, with its basically monistic point of view, considers lust for power and the satisfaction of attaining power as just another form of libidinous activity, though more or less sublimated. However, this interpretation disregards an important difference: Pleasure, as pointed out above, is characterized by a tension-release pattern of short span which calls for repetition, whereas a man's drive to attain and maintain power may be, and often is, the basic content of his whole life. He is never quite satisfied, in spite of partial gratifications which may get him closer to his goal. Frustrated ambition may be an incentive to reiterated and enforced efforts or it may be followed by retreat and substitution of other aims. The highest steppingstone which is still in sight is often considered the final goal—until it is reached. Then, however, ambition drives farther ahead. Thus it may be the ambition of a young man entering politics to be elected to the city council of his small community. When this is attained, his next goal may be to become a state representative or senator, and then on along the line of a political career, to congressman, senator, vice-president, and president of the United States. The latter aim, being way up in the clouds, is so rarely attained that it is considered by many as a final aim, or even too unrealistic for that.

However, it is not the final aim either, because the ambition of those who reached it did not really come to an end, neither does it come to an end at any point beyond, within the limits of reality. It appears that the actual aim of unlimited ambition is beyond the clouds in the infinite distance—the ideal of godlikeness, as it has been called (Adler). The fact that mentally sane persons are realistic enough to stop somewhere along that line and declare themselves satisfied does not alter the virtual trend toward infinity inherent in ambition. In mental disease, an imaginary equivalent of that infinitely distant goal is reached by patients who identify themselves with Christ, or God.

The everyday form of lust for power and success is better called *vanity*. It consists in the striving for small-coin gratifications as expressed in other people's admiration or submission. Hence, the pattern of vanity is very close to that of pleasurable satisfaction, with its short span of tension and release and its inherent desire for repetition. Certainly satisfaction of this kind could just as well be described under the heading of "pleasure." In fact, psychoanalysis considers vanity as a personality trait derived from the auto-erotic stage of libido development or narcissism (Chapter 3, "Emotions and Instincts"). Freud considers narcissism, which refers to the Greek legend of beautiful Narcissus who fell in love with his own picture mirrored in the lake, as actual infatuation with one's own self, resulting in self-admiration and withdrawal from social environment. It may be actualized in certain types of mental disease. Vanity proper, however, requires other people as a living mirror to reflect the person's own perfection. Once acquired, this lust for admiration may be habit-forming, like a drug, and may absorb the vain person's interests to the exclusion of everything else. When he lacks this form of satisfaction, he feels miserable, unwilling to accept a substitute. Thus

he turns the social relationship, which ought to be established by his active contribution to the the community, the other way around, using other people to feed his self-evaluation. Naturally, if the latter were well established, he would not need to be vain. All of us, it is true, use the community's reaction in order to check up on our accomplishments. If this reaction, however, is to be used as a gage, it must be used in an unbiased way, looking equally for bad and good. The attitude of vanity, ostentatiously emphasizing one's assets and hiding one's shortcomings, only means support for a weak self-evaluation.

Vanity appears as a lower-grade substitute for ambition, to be used by those who do not have the long span of endeavor which is needed to attain ambitious goals. The more courageous can afford to renounce everyday gratification and to continue their striving upwards toward the goal of final gratification. While that final goal is fictitious, the striving for it and the achievements reached on the way are quite real. The ambitious person is moving ahead, in spite of occasional setbacks. The vain, on the other hand, stays where he is and is not so much interested in actual progress as in short-span satisfaction. There are, of course, many transitions and mixtures of ambition and vanity. It is probably true that no ambitious person, whether he is successful or not, is entirely devoid of vanity.

It seems that one's vanity, as a rule, carries a make-believe quality with the intention of deceiving one's self as well as others. Rationalizing mechanisms, such as the principle of sour grapes and its counterpart, that of "sweet lemons," serve to protect our ego against the hurt of vanity in the first place. Rather than admit failure to attain a higher prized goal, we make ourselves believe that we did not want it anyhow, and, in turn, we tend to exaggerate the value of what we got, just because it is ours.

SOCIAL VALUES

These brief remarks on the individual and his interrelations with the community may suffice to demonstrate the methods to be used, in a given case, for a proper understanding of *character as a social function*. It can be seen that the dynamics of that interrelation is to be understood entirely in terms of values. All real values are social and individual at the same time. There are *no values exclusively individual*, and, therefore, every attempt of a person to enhance his "*individual values*" to the exclusion of social ones must turn out to be futile. He may maintain his private world of personal values as fiction, which lasts until he dies. But society does not acknowledge them and reacts toward him, in the long run, according to what he contributes to the *reality* of social values.

The general principles explained in this section apply to social life at large, in all its variety, though, of course, in different ways according to particular situations. Grossly, three sections of social life can be distinguished, each one covering different problems and corresponding to particular individual attitudes. Considerable overlapping between them is to be expected. They are *work, community, and sex*.

WORK

The values involved in work need not be emphasized. Useful activity is an essential contribution made to society which could not exist without it and is created anew, so to speak, every day by work. Animals do not work in the sense in which humans do. The functions of a bee collecting honey or of a predatory animal hunting deer serves the same immediate

purpose as most of the work done by mankind, viz., preservation of the species. This, however, is a necessary biological function based upon inherited instincts which may, or may not, be modified by acquired habits. Those functions which serve feeding, shelter, care for the little ones, etc., are in no way different from the functions of breathing, digesting, and other physiological mechanisms. Most of these instincts which are millions of years old are blind; there is nothing which indicates that the animal knows what it is doing. The hen breeds every fertilized egg which she finds in her nest, even if it is a duck's egg or a goose egg. The mechanism of instinct may be called Nature's wisdom, if you like, but it has nothing to do with foresight and reasoning.

Man's working activity, on the other hand, is *planned* in a way in which animal functions never are. In human work the compulsive factor which characterizes instinctive animal behavior is missing. Man may choose to work or not to work, he may change his kind of work altogether from one day to the next; he may speed up or slow down; he may do a good job or a bad one, according to how he likes his job. If most people are "forced" to work in order to make a living, this enforcement has nothing to do with natural laws but only with the economic structure of society. It is up to the individual to acknowledge the validity of economic laws and, thereby, to take advantage of the return granted to the worker, or to disregard it, as the criminal does, and, by the same token, to submit to those legal and moral reprisals established by society for its own defense. Society cannot help considering wilful cooperation of the individual as an essential factor. Also, the social reaction against loafing makes allowance for exceptions. Hitherto, in every known society, there have been individuals who were not required to work.

The evaluation of work depends upon the social struc-

ture. There were cultures in which work was considered indecent for members of the ruling class and a necessary evil for slaves. While the dignity of work has slowly risen, there are still social groups which consider work, at least work of an inferior kind, a disgrace. This accounts for some inconsistency in the evaluation of work. On the one hand, the "official" ideology requires unconditioned respect for every kind of work, even for the lowest. On the other hand, it is a fact that the obligation to work, in our society, does not seem to be valid for wealthy people, viz., for those who are holding the most envied positions. That causes idleness to be included among the ideals of the poor. Many of the latter would rather establish their self-esteem on the glamour of the "high society" style of life, than on the dignity of work recommended to them by religious and moral authorities.

Further analysis brings forward the fact that, in our time, most people do not get any satisfaction out of their work. In order to be satisfactory, in itself, work has to fulfil two conditions: (1) it has to be useful, i.e., involving some accomplishment, be it even indirect, in the community's interest. An activity which does not fulfil this requirement is not work but play. (2) It has to contribute, as a *personal* accomplishment, to the individual's self-appreciation so far as it is based on his ability or efficiency.* In the mechanical labor of industrial workers the former requirement is fulfilled but not the latter. Rationalized division of labor separates the laborer more and more from the final product of his work. He has to run a machine producing screws, and he does not even know

* "When an adult undertakes to perform a task he generally places his goal at a level not so far above his ability that he will suffer embarrassment and humiliation if he fails, nor so far below his abilities that he will feel ineffectual and cheap upon accomplishing the task. He undertakes that amount and that kind of labor which will keep his self-esteem at a maximum." (F. Hoppe. Psychol. Forsch., 1930, 14: 1-63.)

for what purpose the screws will be used. He has to perform one identical motion required to produce part of the wheel of an automobile, and he does so seven or eight hours a day, five or six days a week, fifty-two weeks a year. Since he is glad to hold a job, he does not complain too much about its monotony. If his job, however, did nothing else but supply him with the sustenance required to keep him fit to do his job, he would exist in a vicious circle void of meaning. That is why the mechanical worker needs values outside his work to make his life worth living.

These values are supplied, to a small extent, by the pleasure he may buy with his surplus earnings, if any. Pleasure, while an additional value embellishing life, will never do as life's chief or exclusive value, particularly if it is merely of the passive or receptive kind (attending shows, ball games, listening to the radio, reading magazines, etc.). It is somewhat different with leisure-time *activities*, with hobbies, sports, or amateur art. Many people succeed in making up for the emptiness of their vocational work by what they accomplish in their spare time. This activity, being of their own choice, may turn out to be their chief occupation, the paid job being only a necessary means to that end.

Another group of workers obtain real satisfaction by their voluntary or even enthusiastic participation in political, cultural, or religious movements. Their contributions to the permanent and supra-individual values incorporated in those movements give meaning and importance to their personal lives, which otherwise would be futile.

But most of the many millions of people who are kept busy in their vocations without getting any intrinsic satisfaction out of them find a legitimate escape from their feeling of frustration by *founding a family*. The man or woman who has to work in order to keep the household going and to raise

children is ready to sell his working power at the highest possible price, regardless of whether the work is satisfying or not; the welfare of his family counts for more than anything else.

The number of those to whom vocational accomplishment means value in itself and who would, therefore, be glad to do the same work even without pay, is relatively small. Craftsmen who manufacture goods, such as shoes, clothes, or furniture, from beginning to end, are rapidly dying out. For the rest, farmers, artists, musicians, literary men, scientists, educators, social workers, engineers, doctors, and some other professional workers may obtain entire satisfaction out of their achievements. They may, therefore, more easily get along without a family, a cultural activity, or a hobby for their leisure time. Often they do not mind working more hours than they are actually paid for, which proves that they like their jobs. Of course, there is drudgery connected with every kind of work. Considered, however, as a means to an end, even the unpleasant part becomes tolerable. Preparation for vocational activity, the long drawn-out schooling and apprenticeship, is part of the whole of a man's vocational life and receives its meaning from the final aim. This accounts for the tremendous differences between students of similar intelligence. They seem to be doing the same work, but they are not. One of them goes to school because he is forced to do so; nothing he is doing makes sense to him. Another wanted to be a doctor ever since he was ten years old, and everything he did in school, hard or easy, was a step forwards toward that goal and, as such, satisfactory. A third may have had the same desire, but for some reason he lost confidence in his ability; thus cut off from the goal as a source of energy, he dropped his interest in what then became to him a senseless drudgery. A fourth did not lose his goal; he rather seemed to strive toward it with utmost ambi-

tion, but overambition caused impatience and intolerance against failures, leading on both accounts to nervousness and stage fright whenever a test had to be passed. Laziness, dodging, excuse-finding are various symptoms of inadequate adjustment to work. The same holds for certain types of overactivity: those people who are terribly busy all the time and will never bring anything to an end; those who feel sick from "overwork" all their lives and want to be admired for their martyrdom rather than for their accomplishments; and those who excuse themselves by claiming that they missed their vocation and might have done well in another job.

It is essential for the psychology of work as a social function that work be considered as an ethical obligation and, therefore, under the control of conscience. Society—and that means, ourselves—will acknowledge idleness as a proper form of existence only under certain conditions: in leisure time, during vacation, or in case of sickness. Conscience, accordingly, tries to justify idleness by emphasizing either previous work or incapacitation. They serve partly as an excuse in facing other people, but mainly to save one's own self-esteem. The average personal ideal includes readiness to work as one of its major items. This, of course, holds only with exceptions. It does not hold for those whose self-appreciation is firmly established on values of another kind, apparently incompatible with the workman's ideal. Under the latter category, society ladies may be found who, as a substitute for work, take their appearance and their social responsibilities very seriously. These functions of the society lady, while not exactly work, constitute "quite a job," justifiable in the frame of reference of our social structure. Even for her, positive loafing would not do for any length of time. She has to be busy, if only with shopping or making calls.

Perversion of work evaluation to the extent that every

kind of work is considered something to be ashamed of and loafing praiseworthy is to be found in the personal ideal of *criminals*. Their style of life is best understood as a caricature of the life of wealthy people, perceived from the perspective of the underdog. Ambition and discouragement work together to make them envisage crime as a trick by which to *dodge*, instead of conquering, the obstacles between them and the idolized world of idleness and luxury. By the same token, the romantic ideal of the outlaw fighting against the overwhelming minions of the law adds another thrill to the gangster's career. His self-esteem is so firmly established on those lines that he can afford to despise work as the portion of "saps" who do not have the guts required for a hold-up. Lust for pleasure and power, mentioned above as the most important forms of potentially antisocial attitudes, are strongly emphasized in the criminal's mentality. They are taken for granted, as rules of the game, in the primitive counterfeit society to which the outlaw belongs as an acknowledged member, after having been excluded from actual society. The code of the criminal gang, while rather strict in certain respects, such as solidarity, does not include work.

COMMUNITY

Relationship to the community involves two different tasks which are not necessarily fulfilled to the same extent by any one person. On the one hand, it means *relation to society at large*, be it the community of city or town, nation, or humanity, an understanding of its common interest, solidarity, and cooperation with it. On the other hand, it means relation to single individuals, readiness to make friends, personal confidence, and helpfulness. In general, the first-mentioned task seems to be the easier one. Of course, realization of social in-

terests common to a greater community presupposes ability of abstraction, or theoretical intelligence, which chiefly depends upon education. The "hillbilly" cannot be expected to participate in ideals like international pacifism, world-wide scientific cooperation, or planned economy. But he probably has full understanding of and interest in the political and social problems of the small community in which he lives his everyday life. Though it is up to him to choose among the values involved in the common interest, it is a narrow choice with few alternatives. The broader the outlook, or the larger the basis of social relations to community-at-large, the more it is up to the individual to decide between various paths—various political, economic, or religious trends to support. A college graduate who grew up in a big city as a member of an intellectual family would be considered stupid if he had no more community interests than the illiterate mountaineer. The latter, by the same token, is not so considered.

Personal relationship to other people is a different problem, different mainly for one reason: it is the dynamic interaction between individuals. The difference is roughly similar to that between gravity on the one hand, and the attraction between two magnetic objects on the other. In the case of gravity, the object is attracted by the earth, but the earth is also attracted by the object. This latter fact can be neglected, considering the tremendous difference between the two masses. In the case of the two magnetic objects, however, there is important interaction plainly visible. Similarly, a single individual's attitude toward the community at large has essential repercussions on his own destiny but not so much on that of the community. One criminal's law-breaking activity does not hamper the legal authority of the state, even when he gets away with it. In the case of a personal relationship, however, the factor of dynamic interaction becomes essential. Indeed,

whenever personal relations are concerned, such as those between two friends or between husband and wife, or parents and children, psychological observation has always to consider the attitude of *all* participants. The attitude "a" of the individual "A" may, or may not, be a response to some attitude "b" of the individual "B"; but certainly it produces a definite change in B's attitude, b_1 ; the latter, again, means a new experience for A and causes him to change his attitude, a, into a_1 , which again produces another change in B— b_2 . In this way, it appears that the relation between A and B is not a permanent state but a process. In many cases, that process assumes the character of a vicious circle, each response of A causing B to stiffen the very attitude which formerly produced the response on A's side, which again increases the latter. The common statement that hatred engenders hatred is a case in point, though, of course, it does not always hold true. Responses can only be predicted by a thorough knowledge of the persons involved. Generally, it seems that the essential factor determining the response and, therefore, its repercussion, is that of self-evaluation. One of the most important forms of expression of hate is that of depreciation. If A hates B, B's self-evaluation immediately reacts to A's depreciative attitude. He tries to defend himself by returning depreciation. The attack against B's self-esteem weighs the less, so it seems, the lower A's value, or importance, rates. Thereby, A, becoming aware of B's depreciative attitude which in fact is more defensive than retaliatory, may respond with another act of depreciation which this time is defensive too. Thus the vicious circle is established, a process which goes on until some equilibrium is attained, say, by the discontinuance of social contact between A and B.

Love, too, is a process of mutual interaction, in which appreciation and self-evaluation play stimulating roles. Here,

again, a state of equilibrium may be reached which is maintained until some disturbance occurs. Processes of this kind in which there is a similar response on either side—hate against hate, or love against love—may be called homologous. There are, however, heterologous processes, too: for instance, a mother's domineering attitude toward her son, to which the latter responds by submission and dependence. Since he seems to be quite unable to direct his own affairs, the mother feels not only justified but even obliged to interfere and to control every single detail of his life. Her own self-evaluation relies upon her feeling of importance arising from the needs of her son, whereas he backs his inadequate feeling of security by the support expected and supplied from his mother. The state of equilibrium, effected in this way, may be disturbed some day by the fact that the son reaches an age at which most children rebel against their parents' interference. The boy may have the desire to stay out late at night without reporting to his mother exactly where he had been. Thus he gets into contradiction with his own dependence, wanting to preserve its assets while getting rid of its liabilities. His mother, on the other hand, feels her domination threatened by her son's rebellion, and while she resents the slavery of having to take care of his laundry, his neckties, and his clothes just as if he were a baby, she jealously insists upon controlling his leisure time and his friendships. She, too, wants to maintain the assets of her position while getting rid of its liabilities. Both believe themselves to be right and, to some extent, really are, namely, to the same extent that the other is wrong. Their biased points of view make them consider their own wrong doings as mere responses to what the other one does, whereas they are never ready to grant the same excuse to him. The process of interaction started in this way may turn love into hatred and deeply influence the general character develop-

ment of both parties. Similar laws of dynamic interaction hold for *confidence* and *distrust*. A boy who has been caught stealing is considered a thief; he has no moral reputation and self-respect to lose. Therefore, he usually tends to strengthen his position as a thief by continuing to steal, this being apparently the easiest and most promising way to go. Punishment and social depreciation, instead of improving him, make matters worse. There is a tendency for other people's opinion to come true, due to the dynamic effect they exert on self-evaluation and, thereby, on behavior. A person who tends to be reserved and shut-in is not likely to be popular; and the unfriendly or indifferent attitude of his fellows which is the response to his behavior seems to confirm and justify his shyness and self-consciousness. A person's aggressiveness and ruthlessness tend to provoke similar responses from other people which are then used to justify and strengthen his own policy of aggressiveness and ruthlessness. Thus experiences gathered from social life always seem to prove assumptions which had been made before, simply because those assumptions tend to produce experiences of a particular kind. Eventually, everyone digs within the trenches of his own "philosophy" with nothing to refute it but with abundant facts apparently to prove it.

SEX

On the level of existence with which we are dealing in this chapter we are not concerned with the physiological aspect of sex life. We shall consider the sex mechanism as one of the instruments available, or as material to be used, according to Man's purposes. This means that human sex life is determined, in a negative way, by physiological limitations, general and individual, but that within that frame of limitations Man

is free to choose his way of action, according to his range of values.

Three kinds of values are concerned in sex life: (1) satisfaction of sexual desires and the pleasure derived therefrom; (2) the biological purpose of reproduction; (3) the intimate relationship between two individuals of different sex. Values (1) and (2), while biological in character, nevertheless have some importance at the level of social and personal values. The truism that satisfaction of instinctual drives is involved whenever there is sex activity does not tell us much about human sex life itself. Persons who only care for physical pleasure in sex and are blind to other values involved represent a peculiar personality structure of their own. They are likely to have lust for pleasure, or greediness, in other lines as well, due to a pattern developed early in childhood. For others pleasure appears to be one factor but not the main issue. There are important extrasexual motives which determine a man, e.g., to marry a particular girl. Once married, he will certainly look for sexual satisfaction in his marital life, or else marital life will not exist. But he will also find out that there is more than sex in marital life, pleasant and unpleasant.

The biological factor of *reproduction* does not seem to enter as a motive in human sex life. It clearly has nothing to do with animal sex activity or that of primitive Man, neither of whom knows about the relationship between intercourse and child birth. There are, however, breeding instincts in animals, and probably in the human race, too. They come into play in the mother's care of her infant. It is, of course, hard to tell how far instinctive powers account for the rather complex relationship between parents and children. At any rate, those powers do not seem to be compulsive. Cats and other animals sometimes eat their little ones or neglect them. In human society, the relationship between parents and children is far

from being explicable in merely biological terms, though biology plays some part. As pointed out when we spoke about work and its meaning for humans, the foundation and maintenance of a family give essential content of life to those who are not satisfied by their work. But this does not mean that the same purpose is absent in the lives of those who are fortunate enough to do creative work. The desire for actualization of values does not seem to be limited by plenty; there is never enough.

In our Western civilization, progeny means more to women than to men, because women participate less than men in economic activity. There are, accordingly, more women than men who marry in order to have children. Also, once the baby is born its care is primarily considered the mother's job, which is fairly consistent with the fact of maternal breeding instincts. The woman who does not live a man's life never feels her own importance to be equal to a man's except in her babies' dependence upon her. Her readiness to give is nourished by her equal happiness in being able to give and to be all but indispensable to the baby's existence. This is true, since experience shows that there is no real substitute for motherly love. Thus, it can be stated that a woman's feeling of self-respect and adequacy largely and legitimately depends upon her ability to procreate and raise children, always with the exception of those women who pursue the same career that men do.

The important question of the comparative value of the two sexes will be discussed later. Suffice it to say that, in our present cultural evaluation, the superiority of the male is still taken for granted, be it right or wrong. Women feel this fact as well as men do, and their reactions to it are various. There are women who resent their alleged inferiority and try to make up for it by eager and jealous competition with men. By their very eagerness they demonstrate that self-evaluation plays too

important a role in their attitude. There are others who chose the indirect way of compensation, leaving the field of work and creative action to man and trying to influence and control his activity by traditional female methods. Sex appeal sometimes triumphs over male superiority. These and other types of "masculine protest" (Adler), sometimes combined in various ways, are more and more evident in modern times; the traditional well-balanced type of modest, dignified housewife and mother is growing rare. Woman's dissatisfaction with her social role and her attempts to compensate show up in her relationship to her husband and other men as well as in her attitude toward her children and her social group. The quarrelsome, overtalkative, nagging and domineering behavior of certain women can be understood on this basis. Equally understandable is the position of the mother who tries to direct and control every single action of her child, even when he is grown up, and jealously interferes with his marital life, afraid to lose her grip on him and, with it, the only importance she ever possessed in life. These alleged character defects, supposed to be typically feminine, while they are believed to account for the low esteem in which the female sex is held, are actually *caused* by this devaluation. They are bound to disappear after several generations, once dignity and equality of womanhood have been established.

Men, on the other hand, do not enjoy the advantages of their superior position. Overestimation of "masculinity" as the top virtue characterizes our culture. This means the obligation of living up to this standard at all costs. The imaginary prestige of masculinity implies an undue bias in our civilization. The constant, though unadmitted, fear of being found deficient in virility causes many men to exaggerate alleged masculine virtues into brutality and ruthlessness and makes others escape defeat by dodging tests. Naturally, this

unsound tension shows up more clearly in man's relation to the other sex, which is most inconsistently mixed with fear, contempt, and worship, all of them equally distant from desirable comradeship.

This brings us to the third and, from the standpoint of social psychology, most important factor involved in sex life—*human relationship* between sex partners. It is all but futile to raise again the much discussed question about the primarily monogamic or polygamic tendency of Man. History shows that both have been practiced at different times, which proves that both are compatible with human nature and that their occurrence is determined by social and economic factors only. Our present Western culture involves basic monogamy, though not in its strictest form. Naturally, women are more faithful partisans of monogamy than men, being socially and economically more keenly interested in it. Nevertheless, it would be all wrong to presume "natural polygamic tendencies" on the male side. While obviously Nature has no preference, the ruling custom of monogamy enforces itself to a large extent, and it is up to the individual to adjust to it or else face social penalties.

Like every custom which has been dominant for centuries, monogamy has molded mankind to such an extent that the highest values in sex life are realizable only in the permanent relationship between one man and one woman. In it, the sex factor, though important, is seldom unduly emphasized. When it is, it involves the danger of satiation and, ultimately, disgust and disappointment which will eventually interfere with the human relationship. It seems that every pleasure pursued merely for its own sake blunts itself and turns into indifference or disgust by constant repetition. Hence it may be inferred that erotic relationship is the more permanent the more there is a just balance between sexual attraction and human friendship. But certainly the sexual aspect cannot be ignored. Real

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intimacy between man and woman, be it even primarily a friendly one, can scarcely be stopped before it reaches the physical sphere. Whenever either party feels that he or she is not physically attractive to the other, the friendly relation is in jeopardy. Thus, physical union naturally constitutes the climax of every true love relation. The essential of the erotic union is the combined realization of two intense values: the transindividual value of psychophysical intimacy, which is more intense than any other human communion, and the mutual increase of self-appreciation effected by the partner's love and admiration. Hence, it can be said that proper erotic union is more likely to produce happiness than any other experience.

However, along with the highest chance of happiness there go equally important risks which account for so many wrecked marriages and lives. As mentioned above, self-appreciation supported and enhanced by the partner's admiration is basic for satisfaction in love. The more both partners enjoy this self-appreciation, the more sensitive they become in this regard. Therefore, even the slightest disapproval or criticism from the other is poignantly resented. The man wants to be considered, by her, as the acme of masculinity with all its virtues, and she wants to be admired beyond measure as the most attractive and lovable woman on earth. Thus, any criticism on either side may touch off a conflict, the more readily when either of the two feels insecure of himself and relies upon his partner's appreciation to bolster his self-esteem. Resentment may turn into revenge, the partner first offended retaliating with a criticism which may be just but which up to then had been suppressed for love's sake. The vicious circle thus produced can finally destroy the most valuable union.

A conflict of this kind may assume the appearance of

jealousy, which is always felt, on the partner's side, as lack of confidence and, therefore, as an offense. In general, jealousy seems to be the attitude of the one who feels himself to be in the weaker position. Fear of losing creates an attack which ultimately brings on exactly what it intended to prevent. For the partner, feeling the threat of domination, together with distrust, may try to regain his freedom by falling in love with somebody else. Since there is no longer any question of loss of confidence, he may do so without self-reproach.

It is important to see the role responsibility and conscience play in the erotic union, despite the fact that most people agree that love cannot be enforced. The pledge of eternal love is taken seriously, and the unfaithful partner is bitterly blamed when he admits he is no longer in love. In fact, he hates to admit it; it makes him feel unworthy, which proves that he acknowledges the pledge and his responsibility for his feelings. And yet, all agree that indifference cannot be helped and love cannot be enforced or demanded and that it would be even worthless unless spontaneously granted or withdrawn. According to the way we feel about love, there ought not be any kind of wilful and responsible activity but only the biological release of passionate emotion. But we evade the fact that it is up to ourselves to pull the trigger and allow passion to be released or to stop it. We constantly try to hide our responsibility behind the screen of emotion, but we do not quite succeed in doing so. When it comes to the point, guilt and reproach are seen to cover our love experiences as they cover other wilful actions.

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Knowledge and Action

IN our first chapter we tried to describe the dynamic relation between the individual and the community. It will be our plan in this chapter to describe *how* the individual's psychological functions *enable* him to pursue his purposes and to actualize values. This study, of course, brings us down to the lower level of integration which may be called, in a large sense, biological.

THE APPARATUS OF KNOWLEDGE

Human activity requires an apparatus (1) to maintain existence, (2) to acquire knowledge of the environment, and (3) to utilize the knowledge acquired in action. Apparatus (1) is covered by physiology, particularly where it deals with vegetative functions. Knowledge (2) is to be considered as a means to action, the latter being the essential of human life. This statement implies that mental processes are *functions*, or means to an end, essentially purposive or intentional in character. The end result of mental functions in this sense has been defined as adaptation of the organism to its environment, "so as to satisfy biological needs" (H. Carr). As pointed out above, however, there is superimposed on biological adaptation the purposiveness of the personal level. Eventually, therefore, mental function becomes meaningful with reference to per-

sonal aims and purposes—realization of values—which go far beyond mere adjustment.

It may be assumed that the apparatus of knowledge is more or less adequate to its purpose, viz., that Man knows as much about his environment as he needs to know for action and not much beyond that. There may be, it is true, some incongruity insofar as we are able to know things without having any use for them, whereas for certain actions knowledge might be needed which is not yet available. There is permanent interaction between activity and knowledge; the latter creates the premises and limits the possibilities of activity, whereas activity is used to enlarge knowledge for the purpose of enlarging itself. Thus activity may be used to serve knowledge, as in the research laboratory of a chemical factory. Research, while eventually aimed at practical matters, has to serve purely theoretical purposes immediately. It is required that the human mind be able while working on a problem to forget entirely about practice in order to get somewhere in theory. The inventors of differential calculus had nothing in mind but mathematics, or else they would have achieved nothing. And yet today no building could be constructed without using differential calculus.

There must be, then, some *desire for knowledge* in human beings, independent of practical purposes. It varies, in different cultural levels, from curiosity up to the pursuit of scientific research. Primitive tribesmen are said to be extremely curious and so are many children and adults in our society. In fact, curiosity and desire for knowledge have a definite *social aspect*. Knowledge is scarcely felt as a value unless it is communicated to other people or at least communicable. Wherever *secrecy* is appreciated, it is either practically required or it only serves the purpose of increasing the social value of the particular bit of knowledge which is withheld

from the crowd and only intimated to a select circle. This is why children enjoy secrecy, particularly, of course, when dealing with things known to adults which children are not supposed to know.

Going back to the problem of the relation between knowledge and practice, the following rules can be established.

1. The immediate purpose of knowledge is to be as near to reality as possible, viz., to be true.
2. True knowledge will work in practice; the truer it is, the better it will work.
3. Therefore, universal workability in practice can be used as a criterion of truth (Pierce, Friend and Feibleman).

Knowledge consists of the apprehension of the objects of the external world and their relations to one another (sensation, perception, formation of images), and in the integration of relations by abstraction (ideas, concepts). Abstraction requires discrimination of single qualities, memory, and association.

Sensation is a physiological concept rather than a psychological one. We do not see single qualities, such as color, shape, or size, and put them together into objects. We see *objects*, from which we can single out simple stimuli, such as the blueness of the sky, or the timbre of a melody played on the violin. But even so, what we perceive is the sky or the melody. Among the materials supplied by sense organs, there are those which more easily yield to "thingness," like vision and touch, and others which more readily furnish "simple sensations," like those of warmth and cold, vibration, smell, and taste. Hearing seems to occupy an intermediate position. Still, even the data of those sense organs which are most readily perceived as simple sensations are not exempt from "thingness," particularly because they usually occur combined

with data of other sense organs or of memory. Coolness, for instance, may be part of the perceived thing "wind," or the thing "metallic object," and it gives a different experience accordingly. The quality of sweetness is altogether different when belonging to a pear from what it is when belonging to candy. Thus, the passive experience of sensation is virtually ruled out for the greater, and the most important, part of our cognitive experiences. The dominating character of perception is not the mere reception of stimuli, but an "intentional act" (Brentano) which, utilizing the material supplied by the sense organs, carries the meaning of an *object*.

GNOSIA AND CONFIGURATIVE PERCEPTION

The ability to grasp the material supplied by our sense organs as meaningful units, or objects, is a specific function of the brain called *gnosia*. We know that *gnosia*, as related to special sensory functions, can be destroyed by injury to definite areas of the cortex, causing the clinical symptom of *agnosia*. Optic *gnosia* is "localized" in the calcarine area of the occipital lobe, acoustic *gnosia* in the second gyrus of the temporal lobe, haptic *gnosia*, or stereognosia (the ability to recognize objects by touch), in the parietal lobe.

Gnosia means the ability to grasp meaningful units, corresponding to the objects and relations of the actual environment. In cases of *agnosia*, the sensory impressions are disintegrated. A person with optic *agnosia* will "see" a dog just as well as anybody else, i.e., he sees the shape, size, and color, and can name them. But he does not recognize it to "mean" a dog, though he knows perfectly well what a dog is. A particular form of optic *agnosia*, called *optic asymbolia*, consists in the inability to understand the meaning of mimicry and gestures.

Another form, *alexia*, refers to inability to understand written or printed words and sentences. A person suffering from alexia behaves just like one who has never learned how to read. He may be able to spell but not to integrate the letters into words and sentences. At the same time, however, he may be able to write. In *acoustic agnosia*, the patient hears perfectly well the words spoken to him but does not grasp their sense. He behaves like a normal man who is spoken to in a foreign language. This form of acoustic agnosia is known as *sensory aphasia*. Acoustic agnosia for music (*amusia*) means

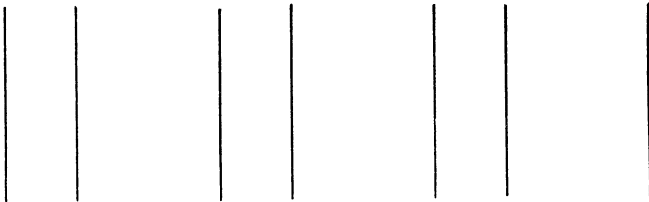


FIGURE 1

loss of the ability to recognize tunes. In *astereognosia*, the patient is unable to recognize otherwise familiar objects by touch, though his sensibility for touch is unimpaired.

From these facts, it may be concluded that gnosis as a function which we use in everyday life is mainly a matter of experience. This is certainly true; our gnostic functions generally refer to things we had to learn. Learning, however, requires the ability to grasp configurations in the first place. This ability can be demonstrated in simple examples where previous experience plays scarcely any role. In the series of straight lines represented in figure 1, anyone looking at them will see three pairs of straight lines standing out against a background, and one at the right edge of the design isolated. With some difficulty, we can make ourselves see it differently,

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viz., combining the two lines which are separated by a larger distance, respectively, into pairs. Now the smaller intervals represent the background and the isolated line is on the left edge. But it is all but impossible for one to see these lines simply as single lines without any relation to one another.

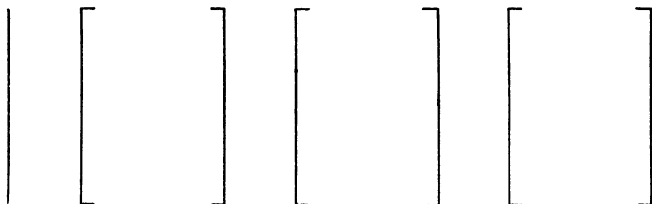


FIGURE 2

A slight addition to this drawing, as in figure 2, determines our method of perception somewhat differently. These small horizontal lines added to the vertical ones combine each pair of lines into a "closed" figure which urges itself much more on our perception than the other combination. The factor of "closure," then, outweighs that of proximity.

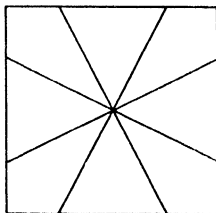


FIGURE 3

In figure 3, the grouping which suggests itself, primarily, is that of a cross with narrow branches on a background of which triangles are visible. However, we can also make ourselves see a cross which consists of four broad triangular branches, with narrow quadrangles forming the background.

We may infer from these experiments concerning plain configurations:

1. That the tendency to perceive configurations, instead of disconnected elements, is primary, and, so to speak, irresistible.

2. That there are various factors, differing as to strength, determining configurational perception, such as simplicity, proximity, and closure.

3. That the whole precedes the elements in our perception. Only after having perceived the configuration may we proceed to analyze and distinguish elements.

The principles stated above without further details have been elaborated systematically by the school of Gestalt Psychology (Wertheimer, Köhler, Koffka, Lewin, and others) and proved to be of considerable importance for the psychology of cognition in general. The main conditions of grouping elements into wholes are similarity, relative distance, and a tendency toward certain results (simplicity, regularity, closed areas). Single spots on a background are more readily seen in one figure when they are of similar shape, size, color, and/or brightness, when they are close together, and when they can be combined into simple, regular, or well-closed figures. This has been considered as being due to habit. That, however, begs the question, since habit would not select regular figures from the innumerable number of irregular ones unless the former were emphasized from the beginning. The same holds for the other determining factors. Perception of "thingness"—*gnosis*—is a special application of the Gestalt principle. It is a primary function of our cognitive apparatus, even without previous experience, and determines training rather than being determined by it.

Meaning cannot be found in any structural part of an experience nor in the sum total of them but in their mutual

interrelation, or organization, which makes a whole out of them. The whole, then, determines the perceptual character of sensation. Two objects of equal size when seen at different distances look equal, though their pictures as projected on the retina are very different from each other. Two objects of equal shape when looked upon at different angles look the same. Two objects, one black and one white, still look different in color when faint light on the white one and strong light on the black one equalizes their physical brightness. This is due to the "meaning" attached to them. "Meaning transforms sensations into things" (Köhler).

What holds for visual configurations is equally true of acoustic ones. The equal repetition of sounds heard when riding in a railway car is subjectively "rhythmified," so that we perceive groups, accordingly accentuated, of three, four, or six beats. This tendency to configurational perception enforces itself even if it has to conquer some unevenness of the stimuli, to "coerce the experienced construction into the best possible shape" (Sander). Successful structuralization gives the feeling of satisfaction, whereas failure meets obvious displeasure. A melody is an acoustic configuration which gives a particular meaning to every single tone. Taken by itself, a tone is something entirely different. The whole melody can be transposed to a higher or lower pitch and still remain the same, although every single tone has been substituted for another one. The essential of the melody, then, is not the tones of which it consists, but their organization.

Once the configurational principle is established in primitive perception, it can easily be recognized in higher forms, for instance, in *speech*. Here, configurations of different levels are superimposed on one another. To start with a single word, what we hear is not simply a sum of various

sounds, but a whole, consisting of sound elements just like a melody. Again, meaning is not attached to the elements but to the whole. The same word when spoken by a child or by an old man with a husky voice and a toothless mouth is altogether different as to sound, and yet we understand it as being the same word.

On the next higher level, the *sentence* constitutes the total unit which, again, is more than the sum total of so many words. Indeed, when listening to someone talking, we hear and understand the sentence and its meaning, even when we are unable to repeat the words. Accordingly, in modern methods of education, the teaching starts with sentences rather than with words and grammatical rules. On a still higher level, even sentences are just elements of *situations*. When living in a foreign country, one soon finds out that understanding the language depends entirely on the whole situation in which it belongs. One may be thoroughly acquainted with those "talking situations" which are typical of a tourist's experiences, such as conversing with a railway conductor, a porter, or a hotel manager. One will, however, probably be unable to follow a stage play even though the language spoken on the stage is "the same" as the one spoken in the hotel lobby. As a matter of fact, it is not the same. Every sentence spoken, and every word in the sentence, have different meanings according to the whole situation.

What holds for the understanding of spoken language holds for reading as well. Our method of composing words out of single letters is not as natural as it seems to us. Ancient cultures used symbols for entire words, or even sentences, and our children have a hard time when they have to proceed from spelling to reading. Therefore, advanced methods of teaching start with words rather than single letters.

PRAXIA

The same principles of configuration and wholeness which hold for gnosia can be applied to praxia. The action is a unit as a whole, or a configuration, which can only secondarily be analyzed into single muscular contractions. Again, the patterns, or "formulas of action," which are related to these motor configurations are dependent upon the intact structure of certain localizable areas of the brain cortex. They are located in the precentral gyrus (Brodmann's area 6) and the adjacent parts of the frontal lobes (area 4). The meaning of praxia can easily be exemplified by observation of cases of *apraxia*, or loss of praxic ability. Pure apraxia of the hand means, for instance, that the patient is able to execute every single movement of his hand and his fingers, and nevertheless is unable to obey commands such as "pick up the pin which is on the table," or "drive a nail into the board." In case of apraxia of the lips and tongue, he is unable, though not at all paralyzed, to whistle, to wipe his teeth with his tongue, to lick, or to kiss. The function of praxia, then, consists in utilizing the elementary motor apparatus for the performance of meaningful actions. Here again, as in perception, the patterns of expression, mimicry, and particularly speech play an outstanding role. *Motor asymbolia*, or inability to perform mimic gestures, is a specific form of apraxia. *Motor aphasia* means inability to talk, while understanding is intact. The center whose integrity is needed for speaking is Broca's area (posterior part of the third frontal gyrus on the left side).

Similarly, alexia is paralleled on the motor side by *agraphia*, or inability to write, and sensory amusia by *motor amusia*, or inability to reproduce a tune.

LEARNING AND THE THEORY OF CONDITIONED REFLEXES

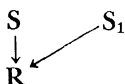
As can be seen from our discussion of gnosis and praxis, the actual performance of these functions is something which is being built up throughout life, or in other words it has to be learned. This brings up the important subject of the psychology of learning, one of the most important functions of the brain. Learning of simple habits seems to be possible with the help of lower centers, whereas, for the formation of complex habits, a sufficient amount of intact cortical substance is required.

The physiology of learning has been studied with the help of experimental methods which are mostly connected with the names of three investigators: Pavlov, Bekhterev, and Watson. Pavlov was the first to study, in animal experiments, the physiology of conditioned reflexes; on a similar basis, Bekhterev developed his science of reflexology; finally Watson, in this country, organized his research along the line of exclusively "objective" psychology, studying human behavior from the stimulus-reflex point of view (behaviorism).

Pavlov starts from the conception of a plain, or nonconditioned reflex which is always an inborn mechanism and runs according to the general scheme $\frac{S}{R}$. That means that a particular, special stimulus S always and invariably produces, in the animal, the particular and special adjustment, or response, R. Among these plain reflexes, there are many whose adjustment function, or survival value, is still recognizable, and others in which it is not. Pavlov used, in his experiments, mostly one of the former, viz., the salivary reflex as a response to feeding. Bekhterev centered his experiments around muscular responses.

Starting from the dog's salivary reflex, Pavlov observed that the dog's salivary glands began to flow even before food was actually ingested, at the mere sight of food. Then he made the sound of a bell regularly precede the feeding: it turned out that, after some repetition, the dog's saliva began to flow whenever the bell was rung. This is a conditioned reflex, which means that it does not work unless the animal has been trained to feeding after the ringing of the bell. Previous special training, then, is the "condition" which the new reflex depends upon. It may as well be called an acquired reflex, in contradistinction to innate or natural reflexes.

The scheme of a conditioned reflex in its relation to the unconditioned one, is as follows:



S
↓
R is the originary unconditioned reflex, for instance,

S = ingestion of food, R = flow of saliva. S₁ is the conditioned stimulus, in our case the ringing of the bell.

This is the most simple form of learning. In order that the dog may acquire the habit of responding to the stimulus S₁ with the response R, two conditions have to be fulfilled: (1) the procedure of combining S with S₁ — or, rather, having S₁ precede S — must be repeated often enough; (2) a "survival value" must be involved, i.e., some strong biological trend must enter into play as a dynamic factor, e.g., hunger. Obviously, we would not succeed in training our dog for his conditioned response if we chose as a training time the hour after his meal. Of course, hunger is not the only biological trend which may be used for conditioning. Fear, rage, the sex instinct, and others may take its place. The reaction of the

pupil to light, the breathing mechanism and the heart beat can also be conditioned in the same manner as the salivary reflex.

Fear, in particular, is used in experiments for producing inhibitory conditioned reflexes. If, whenever he approaches his food, the dog receives a painful electric shock, his natural reflex of approaching the food will soon be inhibited. This is another form of learning which is used, in animals and sometimes in children, in order to break bad habits.

Conditioned reflexes have, in general, a limited duration of existence unless training is repeated again and again. If the dog that learned to respond with salivation to the sound of the bell is disappointed several times, getting no food, the conditioned reflex will vanish. When training is again taken up, however, he will need a much shorter time to regain his habit. This proves that the first training period left a trace in his mind. The same method can be used for training the dog to respond to selective stimuli only. He responds at first to every bell, but if he is afterwards disappointed in every bell sound except one with a definite pitch, he finally learns to respond to that pitch only. In this way, the discriminating ability of an animal's sense organs can be experimentally established.

The mechanism of conditioned reflexes, positive and inhibitory, suffices, according to Watson, to explain the entire complex set-up of mental life. A conditioned response, once fixed by habit, may itself serve as a stimulus for another conditioned reflex. Thus chains of reflexes will develop. Habit, according to Watson, is a "complex system of (acquired) reflexes which function in a serial order when the child or adult is confronted by the adequate stimulus." Instincts cannot be lost, whereas habits can.

Learning starts, says Watson, with random movements. Among these is one group or combination which completed the adjustment, the "successful" one. The emergence of successful habits from random movements has been studied by Thorndike and others by means of the *maze experiment*. A rat is put into a maze at the end of which food has been prepared. At first the rat will enter the various wrong paths ending in blind alleys, so that it has to turn back and try again. Through constant repetition, one after the other of these errors is ruled out, until eventually the animal finds the most direct path leading from the entrance of the maze to the food. This way of training, called the trial and error method, brings to evidence the importance of the dynamic factor, represented by the success involved in learning. It seems that the experience of satisfaction is essential for completion of the learning process. Once the reward is reached in the shortest possible way, the entire content assumes a well-rounded configuration which secures retention. In case of maze training, it is obvious that the gradual removal of detours and conflicting tendencies eventually leads to a stage in which the most economical, or *simplest*, form of function produces the desired effect, and this is the one most likely to be constant.

Psychologists have always been much concerned about the process of habit formation, or learning, and have established the following laws.

1. The law of frequency, which states that learning depends upon the number of repetitions of the function to be learned; there are, however, experiences of "overpractice."
2. The law of recency, stating that the performance of a learned function is better the earlier it is employed after training.
3. The law of vividness (attention): learning depends upon the degree of attention during the learning process.

4. The law of emotional tone; training can be improved by rewards given for good performance and punishments for bad.

5. The law of retentive limit, stating that every individual has a definite retentive capacity beyond which learning is impossible.

6. The law of implicit habits, which means that habits which have been previously practiced may be latent for some time and become active again at some later occasion.

7. Short practice periods with long intervals of rest are better than long practice periods with short rest intervals. Work is saved by using the former method (the "law of diminishing returns from practice").

8. Two similar responses being learned at the same time may interfere with each other.

9. Within certain limits, younger organisms learn faster.

10. In case of verbal and other symbolic material to be memorized, the method of learning by the whole seems to be more effective than that by parts, though not without many exceptions.

Improvement by practice involves (1) elimination of errors, (2) increasing accuracy of the right response, and (3) increasing speed of reaction. Sometimes it seems that achievement is gained during nonpractice periods. This is probably due to the gradual disappearance of bad habits of attention and certain interfering tendencies which, as they fade, leave the more firmly established associations free to act (Watson). Better reproduction one to three days after than immediately after learning is particularly found with younger and defective children (W. S. Hunter).

According to behaviorism, the sum total of conditioned reflexes constituting human mental life may be divided into three fields of action: speech, general motor activity, and

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visceral reflexes. Speech reflexes primarily consist of primitive sound responses to external stimuli. In fully developed speech we are dealing with reflex chains, every word serving as a stimulus to the next one. Furthermore, from speech develops thought: the overt speech is firstly inhibited into flustered speech, then to mere lip movements, until finally reasoning, or interior speech, emerges. The tremendous complexity of human behavior arises from interaction between the various reflex activities of speech, motility and viscera. A word may elicit a motor response or a visceral response, or both, and vice versa. Chains of conditioned reflexes, positive and inhibitory, are interwoven with one another, forming the complex picture of human faculties, habits, customs, and ways of thinking and feeling. Individual differences are due to infinitely different experiences from the first day of life. Inherited, or congenital, differences do not account for anything, according to Watson. Men are all born basically equal, leaving aside diseases and malformations. Life, i.e., the tremendous number of stimuli conditioning the individual throughout his years of existence, makes him different in behavior.

LEARNING UNDER THE CONFIGURATIONAL ASPECT

The mechanistic viewpoint of behaviorism has to be modified in order to fit into the picture of configurative functions of our organism. We mentioned before that every conditioning depends upon some biological dynamism, such as hunger or fear. This ties up the apparently single response with the organism's totality. In fact, in the conditioned salivary response, it is not the salivary gland itself that responds but the entire organism; the flow of saliva is only one visible sign of the behavior pattern of an animal getting ready for food: standing or sitting in a position of expectancy, the eyes

fixed toward the direction where the food is supposed to come from, the mouth open, a picture of sustained restlessness. The whole behavior pattern forms a unit.

The process of learning depends largely on the content to be learned, whether it yields easily to organization or offers resistance. Thus, in memorizing, learning is made easier by some well-established organization already existent in the material, and in case there is none, some organization is enforced. The hardest thing to learn is a series of nonsense syllables (Ebbinghaus' experiment). It cannot be done without combining them into groups, the units of which are held together by some kind of organization, be it only that of a certain rhythm. "Intentional learning essentially means intentional organizing" (Köhler). Poetry is easier to retain than prose, because rhymes and rhythms give us help in addition to the meaning of the sentences. Whenever we try to retain things which have no meaning by themselves, we do our best to give them some meaning by playful association. This method, called mnemotechnic, can be developed by training, by making use of associative power, and by imagination. We may, for instance, retain telephone numbers by associating them with well-known dates in history.

In learning manual skills, we are dealing with integrated function in the process of *automatization*. Learning how to play a musical instrument requires the combination of several functions—visual, auditory, and motor—into one. This is not done by mechanical association. Instead, the student is taught to play *melodies*. The melody, as a meaningful unit of tones, takes the lead in the learning process. The intention of the student is directed toward producing the tune which he anticipates in his imagination, and all those single functions and their combination become means to an end, viz., the performance of the melody. This integrative function is

the dynamic factor which welds the single functions together, rendering them automatic, i.e., performable without conscious intention aimed at every one of them. Training mainly means gradual perfection of that integrative function which goes along with automatization. Speed and exactitude depend upon the degree of automatization, the latter upon the grasping of the musical meaning of a phrase. Therefore a well-trained pianist, when reading a highly complex score for the first time, does not play much better than a beginner. It is not his technic which is at fault, but his inability to grasp the musical meaning at the moment prevents him from setting off the automatism of playing.

The same holds for every other trainable function. We do not read letters or syllables, nor even words; we read sentences. We do not, in walking, contract the single muscles of our legs in a definite order, nor does one muscle contraction elicit the next one by way of reflex; we usually do not even "walk" at all, we "go" somewhere. We do not remember a tree as a sensory impression, but we recollect an entire landscape with the tree in it, together with experiences involved with that place. In trying to solve a theoretical problem, we do not make conclusions from given premises according to the laws of logic, but we fix our attention on the question to be answered and thereby touch off the reasoning mechanism which works automatically. Thus we find the answer without even realizing the links of logical conclusions required between the question and the answer.

On the other hand, it is true that once a technic is well established by assiduous training it may assume the character of an independent function, which can be used in various contexts, like a reflex mechanism, dissociated from the original unit in which and for which it had been learned. This serves to counterbalance the rigidity of habits, enabling us to adapt

ourselves to new situations. Although habituated to shaving every day for many years under exactly the same conditions, I am nevertheless able to perform this function almost as well with different tools, under different circumstances. This ability to break a habit and to apply those parts of it which may be useful for building up a new pattern seems to get lost in cases of severe damage to the frontal lobes (K. Goldstein). Facing a new situation, we sometimes are deadlocked for a short while, in a state of perplexity, not knowing what to do. Then a sudden enlightening takes place—"insight," as it is called by Gestalt psychologists—and we adapt our traces of previous experiences to the new one. This ability is also possessed by apes, as has been shown by Köhler's experiments. Köhler's ape sees a banana lying on the ground outside his cage, too far away to be reached with his hands. There is a stick in his cage which might be used as a tool to reach the banana. The ape, lacking previous experience, seems to be perplexed. Eventually, he finds the solution by "insight," which means perceiving the situation—cage, stick, banana—as a whole, or "organizing" it: he grasps the stick and reaches his banana. Once this has been done, it soon becomes a habit pattern by repetition. Any essential change in the situation, however, requires another insight in order to *reorganize* the "field." In case there is no stick available in the cage, but a tree, the ape succeeds, after some perplexity, in breaking one branch off the tree and using it as a stick. For that, he had to dissociate the organization "tree," which had been familiar to him, and had to reorganize the field, so that what formerly was a branch of the tree now becomes a stick. Sometimes it can be seen that the effect in learning leads to reorganization. The "natural" behavior of an animal trying to escape an approaching car would be that of running off in the direction of the car.

However, after some experience of imminent danger, the animal may learn to escape by running to the side. This, too, is reorganization.

ASSOCIATION

One of the mechanisms involved in learning and reasoning is the association of ideas. When asked to tell the first word coming into my mind after having heard the word "knife," I associate "cut" in one half of a second. I might as well have associated "sharp," "steel," or "blade." The association "cut" refers to the function of the knife, "sharp" to one of its essential qualities, "steel" to the material of which it is made, "blade" to its most important part. These four being the most obvious associations, it is natural that they should take the least time for formation. Association which thus combines our ideas into a complex network is the functional expression of the fact of configuration. "Cut," "sharp," "steel," "blade," and perhaps many others are parts of the ideational configuration "knife." Starting from "sharp" as a stimulus, we might, in turn, obtain "knife," "cut," and "steel" as associations. Association of this type, then, is based on an analysis of the wholeness of a configuration. This may be more or less fixed and general, so that it can be predicted to some extent which associations are to be expected from an average mind. But there are also, of course, associations which are only temporary and individual. A man who had been threatened with a knife by a foot-pad the day before may easily associate "hold-up" to the stimulus "knife." A recent experience of this kind has organized the field in such a way that his associations are individually determined, at least for some time. The dynamism contained in this process has been called a "determining tendency" (N. Ach), and it is probable that there are no asso-

ciations without such determining tendencies. In general, the well-closed and logically articulated unit of ideas belonging together, as in our "knife" example, supplies the determining tendency for association. It also involves what we call *abstraction*, which means establishing those general ideas actualized in a given object, e.g., the idea of sharpness in the object knife. Logically, every actual thing is located within a large number of overlapping circles, everyone of which represents one of its attributes, and, at the same time, a general idea which applies to many other things as well. The function of recognizing these attributes, such as color, size, shape, and purpose, by qualitative analysis and of attributing them to the general ideas previously known to us forms an essential part of reasoning.

Thus association and reasoning are intimately connected with each other. Among those typical associations which have some bearing on the logical functions of reason, there is the association by contrast. There is a tendency to respond with "black" to the stimulus word "white," and vice versa, and similarly "large" and "small," "high" and "low," "forwards" and "backwards," and many others are mutually related to each other. This antithetic tendency seems to be important for orientation in our actual environment.

Neighborhood in space and time (contiguity), another factor influencing association, does so only in so far as it determines organization. In general, it may be said that association is nothing but "an after-effect of organized processes" (Köhler). When hearing the words "to be or . . . ," we automatically continue ". . . not to be," the whole sentence being a fixed pattern, part of which when communicating with the recent process tends to re-evoke the entire configuration (Koffka). The recent process ("to be or . . . ") seems to have a tendency toward stabilization which is reached by reproduction of the other half of the complex. The same trend

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toward stabilization probably accounts for the associative selection of certain particular traces among innumerable possible ones, according to the principles of contiguity, similarity, or contrast. These traces, then, being stored in our memory, are not just lying one beside the other, but they form organized units. Their "survival value" is the better, the better their organization. Learning is nothing but a process of establishing well-organized traces. Chaotic traces are more easily forgotten than well-organized ones (Koffka).

Associative power, consisting of the ability to prompt a more or less large number of associations evoked by a stimulus and to regroup associative elements, is called *imagination*. Our associative configurations, while well organized and articulated, must not, on that account, be too rigid. The ape who used a branch instead of a stick to fetch the banana may be said to have imagination. Our associated ideas, then, have to be well grouped and, at the same time, movable and available for regrouping and reorganizing. This is what enables a technician to fix things by improvisation or a writer to invent a story. The logical continuation of a melody requires imagination: from various possibilities, the composer selects the one which is most suitable from the viewpoint of musical form.

Association and imagination prompt the material, the ego selects it. This selective function of the ego, a volitional act going on at the personal level, has been called *apperception* (Wundt). "Sometimes it combines ideas or images and sometimes it divides them. In every case, however, it is relating function, and in that it differs most clearly from association which takes place without relation to a future goal" (Müller-Freienfels). Since, as mentioned above, merely mechanical, or unrelated, association hardly occurs, obviously an apperceptive factor, or determining tendency, is always involved in reasoning. It may as well be called the personality fac-

tor. "The personality as a totalitarian teleological structure emerges . . . as a background of single acts of thinking" (W. Dilthey).

ATTENTION AND CONSCIOUSNESS

In order to utilize the objects perceived as ideas, they must have been perceived in the right way. For this purpose, the human mind has the ability to focus, or concentrate, its perceptive powers on a narrow field by way of attention. All which is in the center, or near the center, of attention, is perceived and understood by the mind at its best. Attention can be compared to a spotlight, both as to the mind's ability to direct it wherever it wishes and as to the narrowness of the field lighted. The fringes of the spot lighted by attention are in half light. Things are still perceived there but not entirely consciously. Consciousness then is the quality of brightness produced by the spotlight of attention and, as such, variable in degrees. Subconscious perception is that which occurs in the periphery of the field of attention.

Just as in the case of a spotlight, the decrease of intensity from the focus to the periphery is not gradual but rather sharp. Hence, the relationship between the two in a well-balanced field of attention is that of a *figure* against a *background*. The latter has not enough intensity to detract attention—which would disturb the equilibrium—but serves, by contrast, to make the figure stand out as a well-closed configuration, just as in a painted or photographic portrait. This figure-background relationship also exists for the spoken word as contrasted against neutral sounds of low intensity or, in music, for a melody standing out against harmonious accompaniment.

The same holds for motor functions. In every action, attention is focused upon the purpose to be reached at that

particular moment or, what amounts to the same thing, upon the meaning of the action intended. This meaning, then, is the "figure" part of the action. At the same time those automatized function patterns of praxia which necessarily belong to action are carrying background character. While I am talking, I have to concentrate my attention upon the content of what I am about to say and upon nothing else. The visible and audible environment, the choice of words, their grammatical coherence and pronunciation, and the modulation of my voice—all this is background, in the fringes of consciousness. In this way, the field is in a state of good equilibrium, which is the necessary condition of good functioning. As soon as the center of my attention is shifted to some point in the periphery of the field, whether it is the facial expression of one listening, my grammar or my manner of speaking, accent, or emphasis, I am *distracted*, which means that the equilibrium is disturbed, and thus, the orderliness of my speech. What holds for speech holds for every activity with reference to an actual situation to which it belongs: well-equilibrated distribution of attention is required both from the perceptual and from the motor point of view. The situation represents a whole, both as experienced and as handled by the person; and the latter has to organize the objective material, to choose the focus and its fringes. Consciousness, in other words, is *integrative*, i.e., aware of total situations rather than of unrelated details (Dunlap).

The focusing apparatus of consciousness is only put into action when and where it is needed. Therefore, it is absent whenever stimulation provokes immediate reaction, as in reflexes. Higher functions, being beyond the biological level, require inhibition of reflex action. This is when consciousness sets in, organizing the field with regard to figure and background in accordance with the person's needs and interests.

SLEEP

This figure-background relationship determines consciousness or awareness in a two-dimensional field, i.e., it lies in one plane of a given biological state of consciousness. We leave this plane when discussing the range of various degrees of consciousness between full consciousness and sound sleep. The conception of *unconsciousness* when applied to sleep has a meaning which differs from what we called *subconsciousness*, referring to the fringes of the field of attention.

Little is known about the physiology of sleep. We know that an important sleep-regulating center is located in the hypothalamic region of the brain, closely related to other vegetative centers. Clinical experiences also show that the supranuclear pathways of the ocular nerves, particularly of the oculomotor, are involved in the physiology of sleep. This is why our eyelids drop and why we lose control of our eye movements when we fall asleep. Probably what happens to vision when our eyes close in sleep happens to the rest of our sense organs as well. Hearing, touch, and smell are evidently blocked while we sleep.

Similar to this discontinuation of sensory relation to the outside world, blockage occurs also on the effector side. It consists in relaxation, or loss of tonus, of the voluntary musculature, apparently under hypothalamic control. The doors of entrance and exit between the individual and his surroundings being closed, *isolation* takes place. This is essential for sleep and for the regeneration of cerebral functions it provides. With nothing to be aware of and nothing to act upon, consciousness is automatically extinguished.

This holds fully only for the deepest sleep, or coma, which scarcely occurs under normal conditions but is usually due to injury of the brain, concussion, increased intracranial pres-

sure, or intoxication. The comatose person cannot be aroused by even the strongest sensory stimuli. From this highest degree of sleep, a continuous range of intensity goes through normal sleep down to mere drowsiness. By determining the intensity of sensory stimulus which is just sufficient to wake a sleeper, the depth of sleep is usually gaged. This method, of course, measures only the degree of sensory blockage, which may not absolutely correspond with the depth of sleep.

For average degrees of sleep, we know that sensory blockage is highly selective, or, in other words, that stimuli of the same physical intensity may be very different in their capacity of awakening a sleeper. Selection is made according to the person's vital interests at various levels of his motivation. Generally, it seems to be true that even an intense stimulus may fail to awaken the sleeper if it is unimportant to him or if he is used to it. Most of us are able to sleep soundly while automobiles and street cars are thundering past our windows. But we wake up suddenly, unless we are very sound asleep, from a faint noise which seems to suggest the unexpected presence of someone in our room. The example of the sleeping mother who wakes up at the slightest sound coming from the baby in the crib is well known. This fact of selective blockage or, one might better say, of selective *suspension* of blockage, has been expressed by saying that there seem to be watches, or sentries, put out during sleep warning the sleeper against potential dangers and other happenings which would make it advisable for him to wake up. Hence it can be inferred that the *will to sleep*, which is essential for sleeping, is opposed and can be conquered by a *will to wake up*. The ability, possessed by many people, to awaken at a certain hour if they want to do so is relevant here. We probably have a sense which enables us to estimate time, and this works even better at night than in the daytime, because at night our time sense is not fooled

by the inequality of the content of our experiences. An hour filled with important happenings seems in our memory to have been much longer than another during which we had been waiting for a delayed train at the railroad station. While we are asleep nothing happens, and hours are therefore equal. This is why mistakes of time estimation are less likely to occur at night. In very profound sleep, of course, the time sense is blocked, together with the other senses.

According to Freud, one of the functions of *dreaming* is that of protecting sleep against arousing stimuli. The dream weaves into its pattern those stimuli which are hazily perceived, and thus deprives them of their reality value. Therefore we are able to keep on sleeping, at least for some little time, while the stimulus of a full bladder urges us to get up and urinate. Instead of arousing the sleeper, this stimulus enters into the dream in some symbolic form. The same may happen with external stimuli. A certain type of dreams of this kind has been described under the name of "alarm-clock dreams." More will be said about dream psychology in our last chapter.

MEMORY

A small selection of those experiences which have been near the center of attention leaves traces which are retained by memory. It is based on that ability to organize traces which was discussed when we spoke about learning. Memory consists of the ability of recognizing former experiences and actively reproducing traces retained. *Recognition* and *reproduction*, or recall, do not coincide. We are able to recognize many more melodies than we can reproduce. We may recognize the name of a person we met some time ago when it is told to us, but we would not have been able to recall it. On the other hand, we cannot reproduce ideas which we would not have recognized.

Neither recognition nor reproduction are mechanical processes. We scarcely recognize or reproduce unless we are "set" to do so (Koffka). Both functions can be blocked for various reasons. In addition, the fact that our memory traces are kept in store in an organized form furthers recognition and recall only in case the entire configuration to which it belongs is available. If the recurring event forms part of a different organization unconnected with the former one, the latter may even prevent availability of the trace. Meeting a person in an entirely new environment often prevents recognition. The old pattern has to be dissociated so that one part of it—the image of the person—may communicate with the recent experience. The oftener I have met the person under various circumstances, the more easily the trace becomes available. The strongest resistance seems to exist against dissociation of one single pattern to which the trace belongs. Once this has been done, the trace soon becomes generally and under all circumstances available.

We know how often our memory fails in reproduction when it is required under "unnatural" conditions. "What was the name of that actor who played Hamlet, last spring, in New York?" my friend asks me. I cannot recall it. And yet I know that the actor's name is quite familiar to me and that I certainly would have remembered it spontaneously when recalling my trip to New York last spring and that delightful evening at the theater. Spontaneously, of course, but not upon request. The tension produced by the latter seems to block the natural process of reproduction. Or, one might say, the "stimulus" of the request elicits the trace as its response only if that trace is generally available, not when it still is part of one integrated whole.

Personal factors often account for blockage of recognition and recall simply by paralyzing our readiness to remem-

ber. This mechanism of forgetting has been described by Freud and will be dealt with in our last chapter. In a positive way, it has been said that our memory traces are "interest-determined, interest-carried." "They live with our interests and with them they change" (Bartlett).

Clinical experience proves that there is a basic difference between *memory for recent events* and *memory for remote events*. Put into terms of configurational psychology, recent events are all those which still belong to my present. "Today" is a well-closed configuration, strictly separated from the background of time elapsed by the night before during which I slept. Practically all events, therefore, which happened from the moment when I woke up until now are "present," or recent, which makes them readily available under normal circumstances. Sleep alone does not seem to account for this segregation of "*today*" from its background, as can be seen from the fact that one or two hours of sleep in daytime do not really break up the continuity of the day. Neither has night by itself this segregating power. It apparently has to be both combined—"a night's rest."

However, it happens sometimes that the wholeness of the day is broken up by some important event. For a man who at noon received a message that he had won half a million dollars in the sweepstakes, all that happened before noon lost its recency as compared to the afternoon. In a larger sense, "this week," "this month," and even "this year" are present, too, provided these units of time are held together as experiential units by what might be called a homogeneous structure. If I have been living during such a period under equal conditions, most of the things which happened then are readily available, since they belong to the configuration which is still "present" to me. It is, however, obvious that presentness is not necessarily the same for various sections of my life. During the

past year I have been working in the same position all the time. But during the same year I have moved into another apartment. Therefore, all those events which are connected with the professional section of my life are, to me, present, whereas those facts which belonged as essential details to the configuration of my former home are past. Thus it happens that I find it hard to remember the name of my former landlady, whereas the name of a colleague of mine who moved a year ago to another city is readily available to me; the latter is connected with my present, the former with my past.

Nonrecent memories, on the other hand, are of two different kinds: Some of them are incorporated into single organized complexes and are generally only available together with the whole to which they belong. In order to recall the name of the actor who played Hamlet last spring in New York, I have to re-evoke—not on purpose, but automatically—the entire trip or, in other words, I have to make it “present” again. That trace, though not belonging to my present, can still be “re-presented”; events of that kind may be called *past*. As time goes on, selection is made among them; most of them are entirely forgotten and are no longer available for recognition or recall. In a state of transition, before they have disappeared altogether, recognition is possible, whereas reproduction is not. Those traces which have been re-evoked several times, whether by chance or because of their vital importance, have become dissociated from their original context to such an extent that they can be used as the small change, or currency, of memory, so to speak—always available and readily reproduceable on first notice. I do not need to revive my childhood in order to recall my mother’s first name. The year of the French Revolution jumps into my consciousness upon request, like a reflex. These traces, referring to *remote* events, are neither present nor past, but timeless. While it is

true that most of them are older than past and recent ones (they cover, e.g., all that has been preserved from knowledge acquired in school), there is considerable overlapping as to time. All of us possess past and even recent memories older than "remote" ones.

Accordingly, reproduction of recent events is a function quite different from that of past and remote events. Recent memory can be lost by an organic lesion of the brain, while memory for past and remote events remains untouched. Such patients have lost their power of retention or, one might say, their "present." Their experiences are no longer being organized but pass through their minds as disconnected facts. Since the unit "today" does not exist for them, they are unable to recall at ten o'clock in the morning whether they had breakfast or not. Normally, the same thing may happen to anyone of us when we are "distracted." I may drop a letter into the mailbox while thinking about something else, and half an hour later I may doubt whether I mailed the letter or not. In this case, the act of mailing the letter had not registered, because I did it mechanically, without that amount of attention required for *retention*.

Retention of past events depends upon the state of mind in which they were—or ought to have been—organized. Their availability varies according to the speed and intensity of the selective process mentioned above, by which we permanently drop the "unimportant" ones, while the little that remains of them, turned into "currency," is preserved with the timeless character of remote events. People with "bad memories" are usually those who eliminate memories too quickly and too intensely. Personal interest largely accounts for selective forms of good or bad memory, be it for numbers, faces, names, or locations.

Traces of remote events probably cannot be destroyed at all but may become unavailable in states of impaired reasoning or diminished consciousness. Organization of remote traces seems to be less perfect than that of past and recent ones. At least, most of our early childhood memories are isolated events which do not seem to be related to what happened before or afterwards. Early childhood memories, however, perhaps constitute a special problem which goes beyond that of remote memory.

The very important facts concerning the influence of interests, personal trends, and purposes upon memory will be discussed later.

INTELLIGENCE

The sum total of faculties represented by attention, reasoning, imagination and associative power, retention, and memory is usually called intelligence. Among the various definitions of intelligence, some stress the point of an individual's ability to adjust to new situations by way of reasoning (Stern, Burt) or to learn (Colvin); whereas others consider the ability of abstract thinking (Terman) or of acquiring knowledge (Henmon) as essential. Thorndike assumes that intelligence can be gaged from the number of connections, or associations, formed, and Spearman states that it depends upon the education of relations and of correlates which are the main processes of all new cognition. According to Spearman, there is, in every accomplishment of intelligence, a special and general intelligence factor. The latter is the one to be measured by our usual tests. Intermediate between general and special intelligence factors, there are, according to most theories, group factors, everyone of which covers a number of special factors. These, therefore, are correlated to one another, forming a group. Thorndike, for example, distinguishes abstract, me-

chanical, and social intelligence, as groups. Verbal and numerical intelligence seem to be clearly distinguishable, whereas spatial aptitude is probably a composite group. There is some evidence for assuming a special group factor of practical intelligence.

The importance of hereditary factors for the development of intelligence cannot be doubted, theoretically, though it is very hard to make them evident. This is due to the fact that the hereditary factor is nothing but "a tendency to develop in a given way under certain environmental conditions" (Anastasi). The decisive influence of environment, however, can easily be demonstrated. Children who grow up without any normal social contact, such as canal-boat children or gypsy children, will develop a mental deficiency ("isolation amen-tia"). Active intercourse with our fellowmen, then, seems to be essential for our mental growth. Study of family histories furnished considerable material for the idea that eminence in achievement or "degeneration" occur in clusters in a family through many generations. The same studies, however, prove that this will only be the case if the environmental conditions of these families remain fairly constant. On the other hand, the value of systematic training of specific functions in childhood has become very doubtful, since studies by A. Gesell proved that progress in this respect seems to be mostly due to maturation; the latter, however, is determined by congenital factors.* Among the methods of studying the hereditary factor of intelligence, that of observation of *identical*

* "Since every quality is probably influenced by the original determinants in the genetic system, and at the same time by the course of life in an actively stimulating environment, it becomes impossible to ascribe with finality any single feature of personality either to heredity or to experience. Both are always involved. This point of view might be expressed as an equation: $\text{Personality} = f(\text{Heredity}) \times (\text{Environment})$. The two causal factors are not added together but are interrelated as multiplier and multiplicand. If either were zero there could be no personality." G. W. Allport.

twins seems to be better founded than any other. Intelligence tests of identical twins show a high degree of correlation between them where they have grown up in the same environment. This, however, is not conclusive, since the environmental influences within the same family are likely to be far more similar for identical twins than for siblings in general. The correlation, therefore, might still be due to the identical environment. Thus control studies were needed of identical twins who had been reared in different environments from birth. In these cases, it turned out that whereas in some there was a striking similarity, in others considerable discrepancies in mental development were found. These discrepancies could only be explained by environmental influence, since the hereditary factors were identical, or almost so. Similar results were obtained by studies of foster children and their correlation with their own parents, brothers, and sisters (the latter being reared in another environment), and with their foster parents. All these studies do not disprove, of course, the importance of the hereditary factor but positively prove the relevance of environment.

Measurement of intelligence is possible, to some extent, by way of the usual methods of *psychometry*, which will be discussed in a later chapter. When employed very carefully and with due consideration of the numerous factors which influence the result of intelligence tests, they are quite reliable, particularly for the diagnosis of subnormal mentality. The diagnosis of superior intelligence in children with psychometric methods has some validity, too, though with some important restrictions: a child's superior intelligence according to form enables us only to a limited extent to predict his future career, since this depends on various other factors just as essential as the intelligence quotient. Also it is quite inappropriate

to refer to superior children as "geniuses." Whatever a genius may be, he cannot be discovered by his intelligence quotient.

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Emotions and Instincts

WHEN TALKING about intellectual life, we were dealing, physiologically, with the functions of the cerebral cortex. In emotional and instinctual life, which is the subject of this section, the *subcortical centers* of the brain and the *vegetative nervous system* are involved. Central control of vegetative functions seems to be primarily located in the thalamus and hypothalamus, at least these are the structures most essential according to our knowledge. Of course, it has to be emphasized that the partition between intellectual and emotional functions is, in practice, artificial. They always work together. There is, however, no doubt but that we are dealing with two different forms of psychic life which can be singled out of integrated experiences. In addition, developmental history proves that the emotional and instinctual apparatus, together with the correlated anatomical structures, is by far the older one.

PHYSIOLOGY OF EMOTION

The vegetative nervous system with its cerebral regulating centers can be considered, besides its other functions, as the *effector mechanism of emotional attitudes*. Viewed from this point, it constitutes a highly organized complex of reflex mechanisms of very old inheritance. All of them had very probably a positive survival value for our ancestors, i.e., they

were necessary for adjustment in particular situations of life. While the survival value of emotions has lost much of its importance in civilization, the apparatus still exists unimpaired.

G. B. Watson distinguishes three original emotions, *fear*, *rage*, and *love*, all the rest being derived from these by conditioning. William James considers *grief*, also, as an original emotion, whereas Watson believes that grief can be derived from love as the adequate response to the loss of a loved object. On this point, as in his widened conception of love, Watson agrees more or less with Freud, whose libido concept (see page 100) is about the same as Watson's "love."

Fear (terror, fright) and rage are much more closely related to each other than Watson assumed, as has been pointed out by Cannon. They seem to be various stages of the same original behavior situation, that of fight. The adequate stimulus for rage in infants, according to Watson, is the hampering of their movements, that for love, stimulation of "erogenous zones" (in accordance with Freud). The fear response, according to Watson, is originally elicited by noise and equilibrium disbalance. All the rest of the possible situations engendering fear or fright are supposed to do so because of conditioning.

The biological meaning of the emotional-vegetative mechanism is best illustrated by what has been described by Cannon as *emergency reaction*. A state of emergency means, for an animal, readiness for fight and flight. Psychologically expressed, it means rage and fear. Physiological observation proves that the anticipation of an emergency situation causes increased production of adrenalin in the adrenal medulla. Adreninemia, thus induced, accounts for increased mobilization of sugar from the glycogen reserves of the liver. Sugar will be required as a fuel for the muscles in case of fight or flight. In addition, adrenin causes, by stimulation of the sympa-

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thetic nervous system, increased heart rate and increased blood pressure, which result in a better blood supply to muscles and chest organs, as a preparation for the big functional strain to come. For the same purpose, the muscular tone is increased. Sympathetic stimulation causes contraction of peripheral blood vessels, which means less bleeding in case of injury and the saving of body heat. Together with this, blood clotting time is reduced. The red cell count is increased (emotional polycythemia), dependent on the nervous control of the spleen, and thus provides increased gas metabolism. Blood is driven from the abdominal organs to the chest organs, the central nervous system, and the limbs, i.e., to those parts of the body which will have most of the work to do in the exertion to come. Movements of the stomach, the intestines, and the bladder are inhibited, probably because their activity would interfere with fight and flight. The bronchioles are dilated and the respiratory rate increased, thus increasing the oxygen supply. Pupils are enlarged to improve eyesight in the dark. The hairs of the animal bristle, which makes it look bigger and more menacing to the enemy, at the same time diminishing the loss of heat. Increased perspiration, on the other hand, keeps the body temperature from rising unduly in exertion.

The changes initiated in an anticipatory way by emotional excitement are continued or even augmented by exertion itself. It may bring on asphyxia, with gasping for breath. Asphyxia improves the contraction of the fatigued muscles and hastens its recovery. The injury that causes opening of the blood vessels is, if extensive, likely to produce pain, which increases adrenal secretion and hastens coagulation.

"Emotions," says Cannon, "may be considered as foreshadowing the suffering and intensity of actual strife. That the major emotions have an energizing effect has been commonly recognized." Cannon exemplifies this fact by the well-known

stimulating effect of cheering in football games, and quotes the following sentences from Hall: "Danger makes us more alive. We so love to strive that we come to love the fear that gives us strength for conflict. Fear is not only something to be escaped from to a place or state of safety, but welcomed as an arsenal of augmented strength."

Fear and anger are closely related. Fight may turn into flight, and vice versa, and accordingly a similar emotional upheaval serves both. "The cornering of an animal when in the headlong flight of fear may suddenly turn the fear to fury and the flight to a fighting in which all the strength of desperation is displayed" (Cannon).

Whereas the sympathetic section of the vegetative nervous system enters into action in critical emergency situations, the parasympathetic section, according to Cannon, "is concerned with the quiet service of building up reserves and fortifying the body against times of stress. Accompanying these functions are the relatively mild pleasures of sight and taste and smell of food." Sexual excitement is also due to parasympathetic stimulation and is readily suppressed by the antagonistic (sympathetic) arousal of fear. However, at the acme of sexual excitement in man, which goes along with contraction of the seminal vesicles and the prostate, the parasympathetic seems to be overwhelmed by sympathetic nervous discharges. On the other hand, the sympathetic discharge of great emotions can irradiate into the parasympathetic, as is shown by involuntary bowel movement and voiding in case of terror.

Referring to the animal's behavior as a whole, in a case of emergency, Kretschmer described two types of attitudes, opposed to each other but nevertheless meaningful. They are states of either increased or decreased motility; in their extreme degrees, they amount to frantic restlessness and paraly-

sis, respectively. The former, called "Bewegungssturm" (storm of motion) by Kretschmer, is best illustrated by the behavior of an animal caught by the fangs of a beast of prey: wildly tossing around, the animal may, and sometimes will, escape the deadly grip. It shows that random movements which do not seem to be purposive but instinctive in their character owe their emergence to their survival value.

The opposite extreme of defense is paralysis, resulting in death feint. A bug, when attacked, turns on its back and remains motionless. A motionless object is harder to see, and those animals that do not care for dead food are likely to let the bug alone when it seems to be dead. Watson considers paralysis as the final stage of any great emotion.

Both instinctual mechanisms, "storm of motion" and "death feint," can be traced down, as ancient inheritances, to humans, in whom, however, they have lost most of their survival value. All of us know the trend toward increased motor activity in violent emotions, such as fear, joy, or rage. In a child fiercely struggling against the doctor who tries to inspect his throat, the biological meaning of violent random movements in an emergency can be recognized, and it often serves its purpose to the effect that the doctor has to give up. Hypermotility is still useful when we are physically attacked and have either to fight or fly. The importance of the emotional factor accounts for temporary increase of the individual's strength and endurance beyond the limits of normal achievement.

The death feint, too, still occurs in humans, though it seems to have lost altogether its survival value. In a state of terror, a man may feel paralyzed, "terror-stricken," so that he is unable to run for his life, even unable to scream. Sometimes, it assumes the form of fainting, viz., a temporary loss of

consciousness combined with loss of muscular tone. The feeling of paralysis in nightmares probably belongs in the same category.

THE PERSONAL MEANING OF EMOTIONS

While emotions have lost, in Man, most of their biological survival value, it is still true that they can be utilized at the personal level to serve distinct, though usually unconscious, purposes. A woman, in a state of perplexity due to an inextricable situation, may go into a faint, and she could not possibly do any better than that. It means escape and, at the same time, irresponsibility, changing the attitude of people around her from reproach into sympathy.

The personal action of loosening self-control and releasing emotion is essential for ever so many emotional experiences. Often the scene is set for a temper tantrum, but we are able to control ourselves, because it is necessary. Generally, when self-control is lost, it occurs when an outbreak seems to be a useful means to an end. The purpose may be to frighten and discourage the other fellow, particularly when he is not likely to fight back. Violent rage, in such situations, is generally felt as a display of masculine superiority. At the same time, once emotion is released, he does not feel responsible any more for what he is doing and allows himself to pass the limits set by social customs. Of course, judgment is different, according to whether one applies it to himself or to other people. We usually blame the other fellow when he loses his self-control, whereas when we do the same ourselves we feel that we "could not help" getting excited and so feel to some extent justified. Obviously both viewpoints are right in their own ways. Our personal activity is the only thing for which we can be held responsible, and violent emotion rules out personal activity. Control and release of emotions, however, are

up to us. The switchboard of emotional discharge is within the reach of our will and this is what we are responsible for. Once the switch has been turned on, it may be hard or even impossible to switch it off again, which accounts for our feeling irresponsible in a state of emotional upheaval. Responsibility does exist, however, for giving up self-control; this cannot happen against our will.

This holds also for sexual excitement. The claim of "irresistible compulsion" is often made in the defense of sex crimes; a public half-educated by popular psychiatric literature often tends to discount the responsibility of sex offenders, saying that they ought to be sent to a mental hospital rather than to jail. But it is a fact that the sex instinct, be it normal or perverse in its scopes, is exactly as controllable as every emotion, i.e., that we are responsible for its release and, implicitly, for the fact that, once released, it may run wild. Therefore, a sex offender cannot claim irresponsibility unless it be proved that he is suffering from a mental disease which involves loss of inhibition or of reasoning power. A man who hit a person with his car may claim that his brakes did not work; however, unless he can prove this fact, the traffic court will take it for granted that he did not make use of the brakes.

Our social code requires us not only to inhibit but also to release our emotions at the proper time. A man who, attending his mother's funeral, is able to chat and laugh and does not seem in the least stricken by grief provokes antagonism and repulsion among those present. He *ought* to be grieved, so we feel; even if one takes it for granted that he may be ashamed of exhibiting his emotions, the fact that he is able to do so to such an extent appears strange and repellent. He was obviously not very fond of his mother, so we conclude, and we disapprove of this. Release of emotion, then, is considered a kind of social duty in certain situations.

The same holds for love experiences. A lover is supposed to be passionate when with the woman he loves. If he is cold, restrained, or self-controlled, she usually reproaches him for not loving her any more. Although all agree about the fact that nobody can force himself to love or not to love, lovers nevertheless hold each other responsible for the mutual pledge of love. Indeed, love involves a personal pledge to which the biological feeling is subordinated. When one ceases to love, it is due to the fact that he has "switched off" the emotional current of his affection.

AFFECTIVE QUALITIES

The customary distinctions made in psychology between various forms, degrees, and qualities of feelings have to be mentioned, though they are not of outstanding importance. We distinguish between passion, emotion, affect, sentiment, and mood according to the duration and intensity, or vividness, of our feelings. Another distinction made, which has some importance in psychiatry, is that between sthenic and asthenic affects or emotions. The former are those which go along with increased motor impulses, such as happiness, rage, despair, or restless fear. In asthenic feelings, on the other hand, motor impulses are decreased, inhibited, or even paralyzed, as in depression, in wishless happiness, or in terror. Kretschmer's distinction, mentioned above, between storm of motion and death faint seems to parallel that between sthenic and asthenic affects, and the same holds, at least to some extent, for the sympathetic and parasympathetic stimulation, as pointed out by Cannon.

The traditional distinction between pleasure and displeasure in affects is primarily taken from the "affective quality" of sensory experience, in which either pleasure or pain

can be distinguished ("simple feelings"). Physiologically, pain is a sensory quality of its own which has its specific receptors in the skin and the inner organs and is conducted, by specific pathways in the spinal cord, up to the thalamic centers and to the cortex. As a correlate to specific pain sensation, about the only *specific* pleasure sensation we know of is that of sexual feelings. They are particularly located in the sex organs proper, but also to some extent in some of the other mucous surfaces adjoining the skin, such as the lips and the mucosa of the mouth, and the anus. Whether there are primarily specific sexual sensations in the skin at large and in sense organs (e.g., smell) or whether sexual experiences derived from them are due to conditioning is unknown. Probably the latter is true.

Psychologically, however, pain is not necessarily unpleasant; neither is physical pleasure pleasant under all conditions. Scratching an itching spot is an instance of mild pain which is experienced as pleasant. On the other hand, sexual feelings may be highly unpleasant, under certain circumstances. It appears, furthermore, that pleasure is connected with low or average intensity of any kind of sensory stimulus, whereas extremes are always unpleasant. Exceptions to this rule occur in case of contrast: in hot weather, cold water is more pleasant than tepid. Finally, certain sensations, particularly of smell and taste, are unpleasant by themselves, regardless of their intensity.

The relevance of elementary pleasure-displeasure feelings is inversely related to the degree of "thing" perception accomplished by a sense organ. The highest degree of "thingness" is that of visible objects, and, accordingly, primary pleasantness or unpleasantness play a minor role in visual experience. They are overshadowed by responses of a higher, nonsensuous order. Primary harmony of colors, for instance, certainly exists, but in a picture it is subordinated to the

picture's meaning. On the other hand, there is much less "thingness" in auditory experiences; accordingly, their pleasure-displeasure quality is much more stressed. In music, however, the pleasantness of a harmony depends upon the *meaning* of a musical phrase. There are many disharmonies in music which we enjoy within the context of a harmonized melody. Again, in tactile sensation, since there is more "thingness" than in hearing experiences, the range of neutral qualities is larger, and meaning only determines the affect. Cool and slimy sensations, for instance, are felt quite differently, according to whether they are caused by an ointment applied to the skin or by touching a frog or a snail. Thus it appears that in the course of evolution the original specific qualities of pleasure and displeasure have been more and more restricted to those senses which have not developed very far from their primary stage. In objective and configurational perception, the field of neutral sensation, neither pleasant nor unpleasant, had to be enlarged because primitive pleasure and pain signals would induce immediate motor responses and therefore interfere with the shaping of configurations adequate to reality. By the same token, the pleasure-displeasure response rises to those higher levels where these signals are applied to the actualization or nonactualization of social values, or, what comes to the same thing, fulfilment or frustration of desires.

INSTINCTS

Closely related to emotions are *instincts*, *urges*, or *drives*, which, on the other hand, seem to be connected in some way with Man's purposive activity.

Instinct, in general, can be defined as an inherited mechanism of sensations and reflexes with a positive survival value. It can be distinguished, though not sharply, from emotion by

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the fact that the reflex action in instinct is usually externalized in active body movements such as throwing the hands up for defense or grasping, whereas the responses in emotion are confined to the organism itself, such as palpitation or blushing. At the same time, instinct seems to be more particularized. Watson, therefore, defines emotion as "implicit mass action," and instinct as "explicit definitized and localized action." However, instinctual behavior hardly ever occurs without emotion and often includes bodily sensations as well. The fact that instinctual modes of behavior go on in the external environment, whereas our emotions do not, probably also accounts for the fact that instincts are more subject to modification through learning.

Instincts are inherited; this does not mean, however, that all of them are actualized at birth. Some of them will manifest themselves only at a certain age and will only be subject to conditioning during a certain period. The instinct of chicks, e.g., to follow the mother hen, manifests itself only when they are three days old, and can only be actualized within the next four days. A chick which has been separated from its mother prior to that period and kept away for more than four days, never learns to follow its mother. It is, however, ready during this term to run after anyone present, be it man or animal, and retains this habit until it has reached the age when the instinct dies out altogether. Similar rules concerning the optimal period of conditioning probably hold for the human sex instinct, which, in part, accounts for variations and perversions of sex life.

The dynamic character of instincts has led to the belief that they were the true foundations of action and volition. This is the basic theory of McDougall's "Hormic Psychology." According to him, all conative behavior is based upon instincts. Rational motivation is much less important than loves

and hates, interests, zeals, rivalries, enthusiasms, all of which, according to McDougall, have emotional and impulsive characters originally derived from instincts. He gives the following list of the thirteen most important instincts governing human life: instincts of escape and fear, of combat and anger, of repugnance and disgust, parental instincts, the instinctive cry of distress with the feeling of helplessness, the mating or sex instinct, the instinct of submission with the feeling of humility, the instinct of self-assertion with the feeling of superiority, the food-seeking instinct, the hoarding instinct with feeling of ownership, the constructive instinct with feeling of creativeness, the instinctive laughter with the feeling of amusement. Watson adds to this series the instincts of hunting, of habitation, of migration, of imitation, of manipulation, and of play.

Discussion of McDougall's theory mainly centers around the question of whether human behavior is determined by purposes—teleologically—or by causes. The traditional school of "structural" psychology represented by Titchener, as opposed to "functional" psychology whose main representants are Dewey and McDougall, does not admit determination by purposes. The antagonism, however, is more apparent than real. Woodsworth, for instance, does not "see anything wrong with accepting purpose as a true fact and at the same time seeking to reduce it to physiological processes which taken singly are not purposive. It is just another case of the whole having properties that are not to be found in the parts."

SEX INSTINCT AND LIBIDO THEORY

Most careful analysis has been given to the human sex instinct. Moll believes it to be a combination of two: the instinct of *contraction*, which means satisfaction arising from

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bodily contact with an individual of the other sex, from fondling, kissing, etc., and the instinct of *detumescence*, or of releasing the tension caused by the accumulation of secretory products in the sex organs. The urge of contraction develops in early childhood and is, at this time, directed toward either sex, while *detumescence* only becomes important at puberty and seems to be more active in males than in females; it is essential, however, in both sexes for orgasm. Conditioning modifies both. Particularly, *detumescence* is conditioned by special forms of contraction: there is no release of tension unless there has been previously the "right" form of sexual contact, as determined by the individual's conditioning experiences.

The theory of sexual libido, as developed by Sigmund Freud and his school of *psychoanalysis*, goes further into detail in the description of the sex drive, at the same time approaching the problem from another angle. Basically, every experience bearing the quality of "pleasure" or "satisfaction" is considered by Freud as libidinous, or sexual. Sex instinct is a compound of many partial drives which develop, according to psychoanalysis, in several stages of maturation, the later stages not replacing the former ones, but being superimposed upon them.

Grossly the libido development is divided into (1) the stage of auto-erotism, and (2) the stage of allotism, or object libido. In the former, satisfaction is only derived from the child's own body, whereas in the second stage the libido is fixed, or transferred, to other individuals, and satisfaction is obtained by contact with them. In general, the fourth year of life marks the transition from the auto-erotic to the allotistic stage.

As subdivisions of the auto-erotic stage, Freud distinguishes an early phase of *oral libido* which starts with the

infant's birth and is predominant until the first half of its second year, and the phase of *anal libido* which, from that time, lasts until the end of the auto-erotic period. Oral libido strives for satisfaction by stimuli applied to the mouth as an "erogenic zone." This pleasure is first experienced in sucking the mother's breast; every object fit for sucking, however, such as the thumb, a toy, or a towel, is used for the same purpose. At any rate, oral libido is, and further remains, tied up with the intake of food. The anal libido is lust for pleasure derived from stimulation of the bowels and the anus, such as is primarily experienced in defecation. Along with this there develops, according to Freud, urethral libido, or lust for pleasure from urination or stimulation of the urethral mucous membrane.

During the entire auto-erotic period, the baby remains entirely "autistic," or "narcistic," which means that it is, so to speak, only in love with itself and hardly interested in other people. At the same time, however, another instinct develops which, according to Freud, is different from, and in some way opposed to, the sexual libido. He calls it the *death instinct*, in contrast to the libido or the *life instinct*. The death instinct tends toward destruction, whereas the life instinct means preservation of the species by procreation. Freud's death instinct manifests itself in the infant's destructive tendencies and its tendency to repetition, which can be seen in its repetitive motions or repetition of one syllable or cry. Repetitious behavior means standstill, related to death, as opposed to progress and life. The death instinct accounts for the infant's desire to fight, to cause pain to others (sadism) or to itself (masochism). By some kind of welding process, sadism is combined with both the oral and the anal libido, thus constituting oral-sadistic and anal-sadistic tendencies. The former account for the urge to bite, to hurt, or to destroy by the

teeth; the latter turn into stubbornness, withholding the stools, depreciating things by identifying them with bowel content. Thus the infant's attitude is largely hostile toward its surroundings and, by the same token, entirely selfish, determined to obtain and to swallow everything (oral sadism) and not to give anything away (anal sadism) unless it is destroyed or turned into worthless dirt.

The fourth year is usually the stage of transition from auto-erotism to *object libido*. By this time, the organs which primarily were the focuses of libidinous satisfaction—the mouth and the anus—are partially replaced by the genitals. Thus, the phase of *pregenital* organization is followed by the *genital* one. At the beginning of this stage, the libido is likely to be transferred to some object similar to the individual himself, i.e., to an individual of the same sex, which means a compromise between narcissism and object libido. This marks a period of more or less outspoken *homosexual* tendencies. These, therefore, are present in everyone, though they are only realized later in life, under certain conditions, by a small minority of individuals. After this transitional period the child normally transfers his libido to the person of the other sex who is closest to him, i.e., generally to the mother. The boy then falls in love with his mother and exhibits all the symptoms of erotic fixation, including jealousy of his chief competitor, viz., his father. His sadistic impulses turn against his father and create the desire to get rid of his competitor by killing him. The child's attitude, as determined by his desire to make love to his mother and to kill his father, is called, in accordance with the ancient Greek legend, the *Oedipus complex*.

Jealousy and hatred turn into fear when the father, observing masturbatory habits of the boy, tries to discourage this practice by threats. These threats often amount to cutting

off the male organ, or something to that effect. Hence develops the *castration complex*, which covers at the same time feelings of guilt because of masturbation and because of incestuous desires, inferiority feelings, and fearful hatred against the father. In girls, the castration complex assumes the form of a belief in having previously possessed male genitals and losing them as a punishment for masturbation and incestuous wishes. Often the mother is blamed for this loss.

Fear, which is consciously experienced for the first time at this age, nevertheless is only a revival of a more ancient fear which the baby felt during birth. Therefore, fear often is, later in life, tied up with the unconscious desire to return to the safety of a narrow closed place (the mother's womb). On the other hand, neurotic fear from narrow spaces and thoroughfares is a reminiscence of the "birth trauma."

This stage of sexual crisis in the child's life is also the same in which the sex curiosity arises as part of the child's forbidden libidinous activity or of his rebellion against his parents' prohibitions. Various "infantile sex theories" about childbirth are being elaborated, some of them of sadistic character. Satisfaction from secret observation of naked persons of the other sex and from exhibition of one's own pubic organs may result in perversions derived from the child's sex investigation.

The conflict aroused by the child's Oedipus fixation is temporarily terminated by the victory of parental authority. The child, being aware of his comparative weakness, represses his libidinous desires, covering them, so to speak, with a layer of "don't's" accepted from the parental code. Thus he enters a *period of latency* during which sex does not play any overt role, with the exception of sexual curiosity, which is carried throughout this period. At this time, the child's personality forms itself in three strata: (1) the "id," including all his re-

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pressed libidinous desires which live a hidden life in the unconscious mind (pleasure principle); (2) the "ego," viz., that part of the child's personality which adjusts to social life, or reality (reality principle); (3) the "super-ego," grossly identical with conscience, comprising the moral code taken over from the parents and constantly repressing into unconsciousness the forbidden libidinous desires. Thus, the super-ego tries to assimilate the child's ego to the "ego-ideal," the ought-to-be picture of a good child which has developed by the child's identifying himself with his parents and submitting to their authority. Repression can be considered as masochistic self-punishment, thereby related to the death instinct.

Thus, the scene is set for the final arrangement of instinctual life which takes place at the time of puberty. The powerful impact of additional physiological forces supplied by the maturation of the gonads makes the individual face anew the task of adjusting his libido to the requirements of reality. For this purpose, those components of the polymorphous sex instinct which are utilizable for normal sex life are welded together into normal, heterosexual libido, ready for transference to a person of the other sex. The rest of the libidinous partial instincts either stays in the state of repression, constituting the id and only released in dreams and other semiconscious mental activities, or it is dammed off by certain fixed character traits and habits ("reaction formation"); or, finally, it is "sublimated," i.e., led into innocuous or socially useful channels of nonsexual activity. Sadistic instincts, for instance, may be used for the surgical profession or for charitable activity; the originally sexual curiosity may be turned into scientific research, etc. All this goes on under the constant pressure of the super-ego which forces the ego to compromise, again and again, between the undiminished tension of the id and the austere demands of civili-

zation. In case of failure, crime, neurosis, or psychosis develop.

The main features of the psychoanalytic theory of instincts are as follows:

1. It establishes, as a working hypothesis, the conception of "libido" as a particular form of energy which, while being psychic in its realizations, is nevertheless derived from biochemical sources and follows the rules of physical energy, mainly the law of conservation of energy. This point of view involves an accounting of estimated amounts of "libido-cathexis" which is shunted from one form of realization to another.

2. The unity of personality is analytically split up into a number of partial drives, everyone of which seems to act as an individual of its own, with an activity directed toward a special aim of satisfaction.

3. Personality is a matter of aboriginal drives, controlled by the super-ego and an adjusting agency, called the ego, a random sum total of repressed, sublimated or realized partial urges.

4. "Pleasure," or satisfaction of libidinous desires, is established as the unique aim and content of life. Since culture absolutely requires repression, dissatisfaction and unhappiness turn out to be the essentials of human life. Happiness is reduced to the negative value of "less dissatisfaction."

Psychoanalysis, then, established an energetic—or physicalistic—monism of human psychology. Purposive activity is projected onto the biological level, where it appears as the blind purposiveness of instincts.

Among the psychoanalytic schools which, in part, disagree with the original Freudian theory, the school of C. G. Jung deserves mention. Jung gives the concept of libido a larger meaning as a universal life energy, or vital force, identical throughout nature. He claims, also, that most of the

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libidinous complexes of the unconscious do not develop within the individual himself but have been inherited. They belong to the "collective unconscious" of the race. This is why unconscious images are so closely related to religious beliefs, ceremonies, legends, and customs of primitive races, in which these identical complexes have not yet undergone cultural repression. Finally, by way of a religious turn given the entire theory, Jung arrives at a more positive, or less pessimistic, philosophy than that of Freud.*

Summarizing our knowledge of emotions and instincts, we may state that the physiology of feelings is well advanced, thanks to the work of Cannon and other students. There is, however, still considerable disagreement about instincts.

PERSONAL MEANING OF INSTINCTS

Referring to our first chapter, let us recall that human behavior at the personal level is determined by purposes directed toward values and that feelings, therefore, only enter the pattern of action when they are turned into motives by the person himself. Once released, the mechanism works automatically. The same holds for instincts. Instinctual experiences are characterized by the fact that they constitute well-defined configurational patterns with a dynamics of their own. They possess "functional autonomy" (G. W. Allport). Their dynamic character is proved by the fact that they invariably involve explicit motion; their Gestalt character is best demonstrated by the essential role which *satisfaction* plays in an instinctual experience. An intrinsic tension "drives" toward

• The dissenting schools of psychoanalysis represented by the names of Otto Rank, W. Stekel, and Karen Horney should be studied by future psychiatrists only. Alfred Adler, whose *Individual Psychology* is often referred to as branching off Freudian psychoanalysis, has actually very little to do with it. His ideas are referred to and quoted in many places in this book.

completion, or satisfaction. This being reached, the instinctual experience is "closed," just as a figure design is closed when all the lines limiting it against its background are drawn, or as a melody is closed with its final harmonic end. The intrinsic tension of an incomplete system accounts for forces tending toward its completion. It is the same tension which causes movement in a hungry animal looking for food, or which makes sexual excitement increase, at its climax, toward the acme and final satisfaction.

The dynamic process involved in instinctual behavior seems to be very close to purposeful action because both make use of the same motor apparatus and are "intentional" in their character. They are, however, identical only when the person makes them so. In case he does, he accepts the attainable satisfaction as a value, to be realized by the release of the instinct's functional autonomy. Otherwise, he may block it and sacrifice the gratification which he might have obtained for the sake of a higher value.

When we admit that the instinctual configuration has functional autonomy, this does not imply that it is capable of overruling Man's activity. Configurations of reasoning, of morals, of social habits have functional autonomy, too, which means that, once released, they tend toward completion, or satisfaction. The person has to choose between these various satisfactions. One of them may be less available, for a given individual, than another. This is due to particular conditions of his upbringing and to circumstances determining a particular situation. Therefore the same behavior is considered excusable in one case which is found despicable in another, or a decision which seems to be a matter of course for one individual is praised as heroic when made by another. To assume that this decision is simply determined by the ratio between the power of instincts and the power of inhibitions is to mis-

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understand the essential character of the sacrifice, which is creative action realizing a higher value at the cost of a lower one. At the personal level, instinctual power enters into action only as a raw material or as a mechanism to be made use of. Instincts, therefore, are neither good nor bad: they can be used either way.

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Temperament, Personality, and Character

TEMPERAMENT is the habitual emotional reaction pattern of an individual. Early in the history of psychology and medicine, the idea was conceived that emotional reaction patterns could be classified into a limited number of types which are related to the individual's physical constitution. Thus the problem of temperament has been tied up with the still more ancient problem of constitutional types which was already familiar to ancient Greek medicine. Hippocrates distinguished the *habitus phthisicus* and the *habitus apoplecticus*. Galen created the distinction between four types, the phlegmatic, choleric, sanguine, and melancholy temperaments, and the terms used indicate their relationship to various organs and organic functions. Naturally, ancient medicine was not up to establishing such relationships scientifically. More modern attempts to solve this problem seem to have been more successful. Sigaud, in the nineteenth century, recognized four types: the digestive, the muscular, the respiratory, and the cerebral types. Viola distinguished the *macroplanchnic*, *microplanchnic*, and *normoplanchnic* types.

INTROVERSION AND EXTRAVERSION

The most advanced forms of typology which are now considered theoretically and practically important are those of C. G. Jung on the one hand and E. Kretschmer on the other.

Jung established, psychologically, the basic distinction between *introversion* and *extraversion* as typical personality attitudes opposed to each other, with some subdivisions in both and with an intermediate *ambivert* type. Introversion means the attitude of individuals who are unable to express their emotions, however strong they may be. They are usually seclusive, do not mix easily with others, are mainly introspective and not in very close contact with their environment. Extraverts, on the other hand, are those prone to express their feelings, who laugh and cry easily or go into a temper; they associate freely with people and are intensely interested in the real world around them, in which they take an active part.

Bleuler called those introvert attitudes which go to extremes and are close to mental pathology *autistic*, a term which does not apply particularly to emotions but to thought. Thinking is called autistic when it does not go primarily along the line of generally accepted logic but is determined by emotional tendencies. In its extreme degrees, autism leads into the delusionary thinking of the insane. The introvert-extravert distinction seems to duplicate that of William James between "tender-minded" and "tough-minded" individuals.

KRETSCHMER'S THEORY

The work of Ernst Kretschmer is important because, for the first time since the ancient Greeks, he tried, in part successfully, to correlate physical constitution and tempera-

ment with each other in a scientific way. Common sense had always done the same thing, though unsystematically. Poets and painters have expressed, by intuition, the general idea that certain character types are likely to occur together with certain physical ones. All of us have certain expectations as to a man's behavior which would fit his appearance, and while it is true that physiognomy often goes wrong, there is probably some truth in it.

Thorough investigation of the problem of physiognomy would, of course, have to deal with the question as to what extent the correlation between appearance and character, if there is any, is determined by acquired factors. The latter are certainly important for facial configuration: Our habitual manners of speech and our mimical expression, which depend on early acquired habits and on later experiences, imprint themselves in our facial traits. The lips of a talkative person are shaped differently from those of a taciturn one, and a habitually serious expression causes wrinkles and furrows very different from those determined by frequent smiling and laughing. Characteristics, apparently racial, are acquired by people who migrate at an early age into another country with different language, manners, and dietary habits. These factors and many others which can hardly be analyzed have to be discounted in order to establish a correlation between bodily constitution and temperament.

Kretschmer did this to a large extent by limiting his investigation to physical characteristics which are most likely to be determined by constitution only, such as the configuration of the bony skeleton, distribution of fat deposits and of the hair cloth. As far as can be done, he relies upon measurement rather than appearance. He started his work with the mentally sick; he soon discovered, however, that his findings were applicable to normal persons. The abnormal ones could

be considered as extreme degrees of normal temperamental types.

The *physical* types, as distinguished by Kretschmer, are the following:

1. *Pyknic* (syntonic): medium height, solidly built; soft broad face, round, or five-cornered, the profile linear, i.e., forehead, mouth, and chin lying approximately in one straight line; short, massive neck; deep chest, with an obtuse costal angle; fat abdomen; limbs rather short, with little muscular and bony relief, often shapely; hands soft, often inclined to be short and broad; shoulders rather small and drawn up, their width equal or below that of the pelvis; skin soft and smooth; in men, early tendency to baldness.

2. *Asthenic* (leptosomic): impaired growth in height and slight lateral growth; narrow skull; face narrow and long, or "shortened egg" form; long, sharp nose, low forehead, angular profile with receding forehead and chin and prominent nose tip; long neck; long, narrow, flat chest with sharp costal angle; shoulders and pelvis narrow; thin abdomen; arms and legs long and thin; scanty musculature and fat deposits; skin dry and bloodless, fur-cap-like hair, bordered, over the forehead, with an arcuate line, without temporal angles.

3. *Athletic*: body size above the average; powerful, big head with strong frontal and parietal tubera and superciliary arches; high forehead, big nose, prominent cheekbones, large mandible, which gives the face a prolonged egg shape; stout chest, shoulder width much larger than pelvic width; flat abdomen; long extremities with thick bony structure, muscles and skin well developed with little fat; large hands and feet.

4. *Dysplastic*: This is not a particular type at all, but it covers all those physical configurations which are due to glandular disturbance. The most frequent of them are the hypogenital type, with incomplete development of secondary

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sex characteristics (for instance, narrow pelvis and scanty breasts in women, defective beard growth and high-pitched voice in men, defective hair cloth on trunk in both sexes); the hermaphroditic type with characteristics belonging to the opposite sex; the acromegaloid type, due to hyperfunction of the anterior lobe of the pituitary gland, with very plump nose, lips, superciliary arches, fingers and toes (rather resembling the athletic type); several forms of gigantism and nanism (midgets); hypothyroid forms, resembling myxedema or cretinism.

The correlation between the physical types just described and the two main types of temperament distinguished by Kretschmer is as follows:

Pyknics	Cyclothymic temperament
Leptosomes	} Schizothymic temperament
Athletics	
Dysplastics	

Kretschmer's *cyclothymic* temperament is more or less identical with Jung's extravert type. The essential of it is the variation within the same individual between extremes of mood—depression and elation (diathetic proportion). They are people who laugh easily and cry easily and are often able to shift quickly from one form to the other. They may, however, also be quiet, calm, and grave. They are soft and sentimental, on the one hand, and have a keen sense of humor, on the other. They love to sing or to listen to music and are strongly impressed by it. Love and hatred are intense with them and abundantly brought to expression. They are sociable, kindhearted, friendly, and genial. In work, they are very active and are particularly gifted for organizational tasks; they drop activity, however, and go into phlegmatic laziness and depression when they meet defeat. In art and literature

they excel in carefully depicting and describing real objects rather than in the conception of ideas. In politics they are capable organizers with a strong influence upon the masses and are often powerful orators.

The *schizothymic* type may be identified with Jung's introverted type. Its main characteristic is variation between the extremes of dullness and excitement (psychesthetic proportion). These persons are shut-in, reserved, not showing emotions; at times, however, they flare up in a temper which seems unreasonable, since the preceding inward tension had not been noticeable. They are bashful, shy, delicate, sensitive, "tender-minded," easily offended, though they usually do not show that their feelings have been hurt. Emotional reaction, when present, may be hidden behind a screen of indifference. Their sense of humor, if there is any, is largely of the satirical or sarcastic kind. They do not mix easily, do not like company, are often self-conscious or arrogant, and find it hard to make friends. Usually they are not very popular because they are hard to see through, and that is why people are either afraid of them or make fun of them. Sometimes they are amenable, good-natured, even-tempered, dull, or stupid. There are cranks among them. In their work, they are capable of conceiving great ideas but less capable of carrying them out, because of their lack of contact with reality. They may be fanatics in religion or politics and sometimes are able to gather adherents due to the suggestive power of their ideas, though they are not very good in organizing mass movements. They are liable to go to the very end of their program without compromise and to sacrifice other people's lives as well as their own. In science they are better in theory than in observation and experiment. In art and literature, they prefer ideas to description, tragic and dramatic subjects to jolly or sentimental ones.

The correlation between physical make-up and temperament, as pointed out by Kretschmer, is not, of course, supposed to be a strict one, or even nearly so. It is only a statistical prevalence, though even this is hard to prove with exact methods and, in fact, has not been proved. Statistical and experimental studies along this line failed to give conclusive evidence, as far as normal temperamental types are concerned. Kretschmer described his types primarily in mentally sick patients, correlating the asthenic and athletic types to schizophrenia, the pyknics to manic-depressive psychosis. Both groups can be considered as extreme developments of the normal temperamental types of schizothymics and cyclothymics, respectively.

The main objection against Kretschmer's types is the one which states that Kretschmer, in his psychological description, goes beyond what can possibly be primarily related to constitutional factors. In the first place, there is hardly a trait of character of which it can be stated that it is bound to be constitutional rather than determined by environment. Certain traits, while possibly due to heredity, will manifest themselves only later in life, by way of maturation. However, these inherited traits are likely to be obscured by environmental influence to the extent that it may be impossible to distinguish the constitutional core from the environmental shell. A good deal of what Kretschmer, for instance, considers characteristic of schizothymics does not belong to the biological level at all but can only be understood in terms of the social personality as a whole. Obviously the pyknic type is by far the healthier and stronger one, better fitted for life and, in many respects, even better from the esthetic point of view. The schizothymic, on the other hand, is closely related to the neurotic, and neuroticism, in turn, is related to the individual's self-assurance, his experiences in social life and his response to

them. It is natural that a leptosome, being physically handicapped, is more likely to develop psychoneurosis than a sturdy and physically well-equipped pyknic. The latter can afford, so to speak, to be an extravert, to mix with people, and to live a highly active life; whereas the leptosome, somewhat discouraged and pessimistic due to his very constitutional inferiority, feels as if he were living in a world of enemies. Hence he looks for satisfaction in his inner world rather than in real life and develops ambitions and desires which can hardly be actualized in this world. He is, in other words, an introvert by choice, though not by conscious decision.

Despite these objections, Kretschmer's typology has considerable value, particularly with regard to the correlation between pyknic constitution and cyclothymic temperament. The constitutional element is raw material which co-determines the final result of personality development, enhancing certain possibilities, diminishing others. Still, great freedom is left to the person to select among the materials and tools supplied by nature *and* nurture. While statistically, when applied to large groups, types may be singled out according to various causal determinations, this typology means very little, if anything, for the understanding of the single individual and for predicting his behavior. And yet, individual conduct *is* predictable to a considerable extent, though not in biological terms; when we know this particular person, his personal attitude toward life, his individual pattern of action, we may guess his conduct in a given situation and our guess has a fair chance of being right.

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Genetic Psychology

OBSERVATION of psychological development is a necessary corollary to psychology, just as thorough knowledge of embryology is required for anatomy and physiology. Genetic psychology, however, must not be overrated. We know many things about the psychology of the infant, which seems to be, in some respects, plainer than the complex psychology of adults. Therefore, we are easily misled into tracing a given trait of adult psychology back into early childhood and believing that, in this way, we have "explained" it. But the fact that the trait in question is traceable to some infantile behavior does not tell us anything about its *meaning* in the adult's personality, which may be entirely different.

CHILDHOOD

Since we are interested not only in adult psychology but just as much in child psychology, the genetic approach also serves the purpose of gaining knowledge of the child's mental functions. For child psychology, the other way of inference, from the adult's to the child's behavior, is used and, to some extent, justified. Since many of our common-sense insights into psychology are gained by introspection, we frequently tend to explain a child's behavior in those terms which we have learned from our own inward experience. Thus, when

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dealing with a timid child, we may try to find out what danger he may be afraid of, because we ourselves are usually afraid only of tangible facts. But fear, in a child, may have an altogether different meaning from that which it has in adult life. The fear from potential dangers, which we know from our own experiences, has emerged from a previous stage of development in which the meaning of fear was not the same. We have, then, to be careful of "projecting" our own experiences into the child's mind, and neither are we entitled to "introject" children's psychology into our own mind.

Naturally, it would be wrong to draw a strict borderline between childhood and adult life. There is considerable overlapping between what might be called, as a particular style of life, childlike, and what is considered adult behavior. We find "adult" attitudes very early in life. On the other hand, we never cease entirely to be children. This fact being acknowledged, it becomes obvious that genetic psychology does not deal exactly and exclusively with the chronological period of infancy and childhood but also with the childlike traits, behavior, and thoughts of adults.

ARCHAIC-PRIMITIVE THINKING

Genetic psychology, however, carries yet another meaning. In biology, there is the well-known law of biogenesis which states that the early development of the (animal or plant) individual repeats and summarizes the most important evolutionary stages of its phylogenetic ancestry. That is why, for instance, the mammalian embryo is supplied with gills which its ancestors many millions of years ago needed for breathing. This law, which can be reduced to the mendelian laws of heredity, has been applied to psychological evolution also. It claims that children's behavior and children's reason-

ing are very close to what has been called the archaic-primitive thinking of uncivilized races (Levy-Brühl). In consideration of the fact mentioned above of the overlapping of childhood and adult life, definite traces of archaic-primitive mentality are found throughout life, though hidden in adults under the superstructure of mature reasoning. They may be released during sleep or in mental disease, producing those strange and irrational contents of dreams, hallucinations, or delusions.

Primitive thinking is characterized by incomplete separation between subjective and objective facts. Figments of imagination and fantasy are believed to be real. Events do not appear to be ordered with strict causality, but "magical" interpretation and practice are adduced everywhere. The logical principle of identity does not exist: a man may be simultaneously a wolf.

The analogy between primitive mentality, dream, and mental disease must not, however, be overstressed. While it is true that important analogies can be found, there are also important differences between all of them.

EMERGENCE OF MENTALITY

During infancy, mental function is slowly and without any strict borderlines emerging from very simple reflexes. The usual reflex pattern of stimulus, sensation, centripetal conduction, synaptic transfer to motor cells, centrifugal conduction, and response has to be considered a primary unit which only secondarily can be broken up into these constituents. None of them has, primarily, an existence of its own: stimuli and sensations do not occur without conduction and neither do motor or secretory function occur without a previous stimulus. However, the motor part of the reflex arc can be inhibited, which accounts for sensations occurring without consecutive re-

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sponse. Furthermore, motor function occurring apparently without any previous stimulation can be explained by the fact that previous stimuli are preserved by organic memory, and that these "canned stimuli," when re-evoked, may work like actual ones. These secondary changes possibly account for the reflex assuming the character of psychic occurrence. Sensation turns into gnosis, motor response into praxis, both of them being no longer related to a chaotic universe but to a world of objects to be perceived and to be used.

DEVELOPMENT OF GNOSIC FUNCTIONS

As the child learns to control and coordinate his eye movements, to focus them and to identify visual objects by touch, *attention* develops, focusing perception on segregated parts of his environment. Awareness of this segregation, realization of the identity of objects moving through time and space, is slowly growing from minute beginnings up to full capacity. Still the objective character of conscious perception is on a very low level of perfection in the infant. Awareness seems to be entirely determined by immediate practical necessity. The baby is able to perceive and identify the milk bottle much earlier than a book, a tree, or a house. Memory, which is essential for recognition and for the training of those special motor functions which the baby needs, develops along the same lines. Generally the first thing kept in mind is the one of most vital importance, and from this center the faculties of retention and recall slowly enlarge themselves to include objects more distantly related to the focus. It takes years before a true picture of the environment develops. This progressively emerging objectivity remains at a rather low stage as long as the infant's social relations are poor, i.e., up to the third year. Objectivity requires the individual's ability to check up with

other people's knowledge, and from that the idea of "other people like myself" must have first entered the child's mind.

Due to the overlapping of infancy and adult life, absolute correctness in perception, reasoning, and memory is never attained during a lifetime. None of us is entirely unbiased in his cognitive functions; they are influenced to some extent by desires, needs, and emotional attitudes. This interference of nonobjective factors with the function of our apparatus of knowledge, which has been called wishful thinking (or, what comes to the same thing, "autistic thinking," according to Bleuler), is a residual of conditions normally prevailing during infancy and childhood.

The question whether the child's progress is mainly due to *training* or whether the changing behavior patterns correspond to biological stages of *maturation* is still under discussion. Obviously, training does not amount to much in early infancy, since it requires purposeful activity on the personal level. In the early stages, however, *conditioning* plays a role the importance of which can hardly be strictly separated from spontaneous maturation. Conditioning by environmental factors never ceases; on the other hand, however, the mature person determines environment at least as much as environment determines him. Thus the pattern which primarily has grown out of the interaction between biological maturation and conditioning more and more assumes the character of personal activity and purposiveness which enters a new form of interaction, that between the person and his environment.

DEVELOPMENT OF THE EGO

Of course, the "person" that we are talking about has his own developmental history.

Among those objects identified, as such, by the infant's

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perception and memory and handled accordingly, there is one which is outstanding, marked by certain peculiar experiences. The baby touches his own foot with his hand, and he has, at the same time, a double touch sensation in his hand and in his foot. It probably needs numerous repeated experiences of this kind before the baby is able to differentiate this particular set of perceptions from all the rest and to form the experience of "my own self." This experience refers at first only to the child's body, and it helps the baby rather early to avoid pain. It takes, however, many years for an approximately exact picture of his own body, a "body-scheme" (Schilder), to develop, with all its details of finer localization. Even a six-year-old child is far from perfect in this ability. Pediatricians know how unreliable the statements of sick children are when asked "where it hurts." The fact that a child in his second year of age is able to point out its nose, its hair, its mouth, etc., does not imply that the baby knows these organs of his. This accomplishment is due to mechanical drill.

Step by step, segregation of the ego is accomplished along with segregation of other objects. It is never quite complete, the less so since the boundaries of the ego are far more variable than those of the external objects. Whether or not "my" shoes, "my" books, or even "my" employees really form parts of my ego, as the word "my" seems to denote, depends entirely upon the particular situations in which they are concerned.

DEVELOPMENT OF PRAXIA

In the meantime, praxic functions are in slow progress, in close connection with the gnostic ones. There is, however, a primitive stage of motility which does not enter into praxia, but which nevertheless is of importance: Motor impulses in early infancy as well as in later childhood tend, to a large ex-

tent, to assume the character of *rhythmical repetition*, or *iteration* and *perseveration*. That means identical repetition of certain motor patterns and their continuation for any length of time, until they are discontinued by new stimuli. This tendency represents a primitive stage of motility, closely related to the motor function of the vegetative nervous system, the latter being rhythmical, iterative and perseverative throughout life. The rhythms of the heart beat, of respiration, of intestinal movements bear witness thereto. The emergence of arrhythmical motion in the nonvegetative section of the nervous system is probably due to later adaptive evolution and connected with the development of the cerebral cortex. The inhibitory function of the cortex partly suppresses iteration and perseveration, partly places them under cortical control. When driving a nail into the wall, I am performing an iterative movement which I am able to start and to stop at will. The rhythmical motion is felt as pleasant and is less subject to exhaustion than arrhythmical action. Children enjoy rhythmical games, adults enjoy dancing, and the appeal of music and poetry is largely based upon the satisfaction of rhythmical desires. In cases of brain pathology, iteration and perseveration can be set free with the release of normal cortical inhibition, as, e.g., in cases of aphasia or apraxia. There is, furthermore, rhythmical discharge of motor impulses in the epileptic seizure.

DEVELOPMENT OF SPEECH

Those gnostic and praxic functions discussed up to now are to be found in higher animals as well as in humans, and it seems that most of them develop faster in animals than in Man. However, with development of articulated speech, the baby attains an evolutionary level never attained by the high-

est animals. A system of signals denoting certain facts of vital importance is well developed in animals, particularly among those with high social organization (bees, for instance). Similarly the baby, prior to the development of language, reacts to sounds which mean feeding time and is able to produce sounds which by trial and error have proved to be successful in inducing satisfaction of vital needs. This, however, is still not language. The stage of human speech is reached when the baby learns to distinguish and to produce acoustic *symbols* denoting objects or events (Bühler).

It appears that instinctive *imitation* is essential for the development of speech. Imitation can be observed as early as in the second month of life. Eight or nine months later, the baby learns to imitate sounds coming to him in the form of spoken language. The earliest accomplishments of baby talk still bear the notes of iteration, mainly consisting of repeated monosyllables, such as "ma-ma," "do-do," and others. Just like iteration and perseveration, imitation, too, can be released by cortical lesions and in mental disease (echolalia, echopraxia). Otherwise, it seems that outside of mimicry and speech, imitation does not play an important role in learning. It is, however, of great importance in the formation of character patterns.

The physiological process of learning to talk consists in the functional training of the sensory speech center (Wernicke's center, in the first temporal gyrus on the left); the motor speech center (Broca's center, in the left third frontal gyrus); of the lower centers controlling speech rhythm and speed (basal ganglia) and articulation (medulla oblongata); and all the pathways connecting these various centers with one another. In the case of early deafness, speech can be learned by special methods, substituting sight for hearing, or visual

centers for Wernicke's sensory speech center. In the mimical language of deaf-mutes, the motor center of Broca is substituted for by other motor centers capable of supplying verbal meanings to arm and hand movements.

In the baby, every meaningful sound or syllable represents a sentence. "Ma-ma," directed toward the mother, is a sentence, for instance, asking for something, in accordance with the situation. It may mean "I want my dinner," or, when spoken in the mother's absence, may denote "I want my mother to be here and play with me." The method of understanding these monosyllabic sentences in connection with the situation in which they are used is that of guessing. Probably the same method is used by the baby when he tries to grasp the meaning of those elaborate sentences spoken to him. Slowly the ways of mutual understanding are improved by the baby's better adjustment to the adults' language, combining two, then three or more syllables, thus forming real sentences and making progress in grammatical language. This progress is really made by jumps, the baby remaining on the same level of speech for weeks, then suddenly discovering some new form of expression by one of those experiences of *insight* mentioned earlier. Probably verbal configurations at first symbolize occurrences, such as changes of environment, actions of the surrounding people or of the baby himself. Then they denote concrete objects as recognized and identified by the baby, taking into consideration that essential similarity is usually taken as identity. The baby is likely to call a cow a dog, simply because hitherto the dog was the only thing he knew which moved on four legs and had a tail. Eventually, with further analysis and differentiation of apparent identities, words come to denote abstractions, such as whiteness, big or small, roundness, movement, etc.

DEVELOPMENT OF REASONING

The development of speech is an important instrument in the development of *reasoning*. Again, it is the trial and error method which is used here. In the stage of verbal symbols denoting objects, the fact that the baby calls a cow a dog may be put into the terms of a (false) syllogism: All dogs have four legs and a tail; this thing here has four legs and a tail; then this is a dog. With further experience the baby discovers that there are things with four legs and a tail which are not dogs, and therewith the baby has made progress not only in language but also in reasoning. He has learned to separate—to abstract—a quality from the thing itself and, by the same token, to establish a universal idea—"animals with four legs and a tail"—comprising several particulars, such as dog, cow, cat, and others. This is what we call reasoning, and apparently it could not be acquired in precision without the use of verbal symbols.

The attainment of the important stage of self-awareness, the emergence of which has been described above, is represented in speech development by the infant learning to use the words "I", "me," or "mine," instead of talking about himself in the third person. This stage is usually reached during the third year. At that time, the baby is already aware of his own body as different from other touchable and visible objects. He also realizes, to some extent, the more abstract sphere of his ego, covering things which belong to him and functions activated by him. Thus, the child establishes himself as a center of action, and by the same token, begins to organize his personal relationship to other people. In other words: individuality and normal social relations emerge at the same time and belong together.

INFANTILE EMOTIONS

The emotional apparatus of children in their preindividualistic and presocial stage is a reflex mechanism which is far advanced in comparison with cognitive and praxic functions. Primitive emotions are inborn reaction patterns which, by conditioning, are adapted to more and more various stimuli. The general tenseness of the baby crying for food becomes the response to every unsatisfied need and every unpleasantness, or the expression of his desire for a change—unhappiness. By the same token, relaxation occurring together with the satisfying change comes to denote happiness. Rage, at this stage, is the violent expression of dissatisfaction which occurs when the baby's desires are thwarted suddenly. Soon after, however, a similar experience elicits the equally congenital instinct of fighting which is intended to achieve, through motor activity, the satisfaction needed. Still, the emotional attitudes of love and hatred are undeveloped and so is fear. All of them will emerge at a time when the infant's social relations are beginning to be established. The infant's apparent attachment to his mother has hardly anything to do with love. He simply depends on his mother, which means that experience has taught him that satisfaction can usually be obtained from this particular person. Thus the baby's relationship to its mother is altogether "parasitic," taking without giving in return, whereas love means mutual give and take. The baby also readily accepts any substitute for its mother, if only the substitute gives the same satisfaction as its mother did.

This does not prevent, of course, an emotional attitude like jealousy from arising at an early age. Dissatisfaction, when experienced together with the appearance of a brother or sister, may easily turn into rage against the competitor. This

rage, however, is impersonal in its character, so to speak. The infant does not hate his competitor, he may even like to play with him and be keenly interested in him, though his interest does not mean love. He merely makes use of him as best he can and fights against him as best he can, according to situations challenging his feelings in one way or the other.

Whether the infantile fighting instinct also includes destruction, which according to psychoanalysis emerges from Freud's death instinct and is closely related to sadism, remains doubtful. It is true that infants often enjoy destroying toys and other objects, particularly so between the ages of two and three years, and that they often get tired very quickly of toys which cannot be torn asunder. It is true also that many children between three and five enjoy hitting or pinching other babies or torturing animals. But their attitude while doing so does not seem to be that of cruelty, but rather that of curiosity and experimentation, involving the intention to provoke responses from the other child or perhaps investigate the inner anatomy of the animal. The idea that there is a strong sadistic instinct which is only curbed and repressed by education does not agree with observations of animals. The same desire for destruction can be seen in puppies; they are usually dangerous to rugs, furniture, clothes, etc. They outgrow this stage, however, with or without education. If this is due in animals to maturation rather than education, the same probably holds for infants. Some aggressiveness and cruelty probably remains in all of us, hidden under the cultural superstructure of our minds and occasionally released in legitimate forms. The strong emotional appeal of prize fights, of bull fights and even of football games is probably due to the same factor. It is remarkable that all these amusements take place in the presence of a large attending crowd whose excitement, while the game is going on, increases to frenzy, the more so

the larger the crowd. A lone fan in a stadium, yelling at and cheering the team he favors, can hardly be imagined. It seems that the release of primitive, or infantile, emotional forces is, in some way, related to mass feeling.

SUGGESTION

The strange phenomenon of mass feeling, or suggestion, is one of the major subjects to be discussed under the heading of genetic psychology. Phylogenetically, suggestion can be derived from the immediate, lightning-like transfer of emotional reflexes to be observed in gregarious animals (Bleuler). When the leading ram of a flock of sheep, becoming aware of a danger, turns to flight, the entire flock is struck by the same emotional shock and immediately runs after the leader. This transfer of a flight reflex can be called mass suggestion. Human crowds in a state of panic behave in the same way. The essential is an almost entire extinction of individual purposiveness, all individuals being driven by a powerful compulsion to do the same thing. The larger the crowd, the stronger is the suggestion, which proves that there is not only a transfer of impulse from the leader to the crowd but at the same time a mutual emotional induction, comparable to the induction of electric currents. This is obviously a primitive and inherited form of instinctual behavior which had, and partly still has, definite survival value and has been able to withstand the rationalizing influence of culture. The biological factor of gregariousness, including mass suggestion, enters as raw material into every human social occurrence which involves mass action and the appeal to masses. This holds for political meetings as well as for military action or for the technic of advertising. The specific instruments of mass suggestion are leaders with strong rhetorical ability, appealing more to emotion than

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to reason, simple slogans understandable to the most uneducated, symbols, such as flags, or the impressive signs used in advertising, music with its strong emotional appeal (particularly its rhythm which welds a moving mass into unity), humor, and others. The moral standard of an individual can be entirely changed when he is subjected to mass suggestion. Most of those who join the crowd in an act of lynching are far from being bloodthirsty and predatory in their private lives. They are probably fathers of families, kind to their children or to a suffering neighbor, and seriously impressed by the minister's sermon on Sunday. However, once they have joined the crowd which has been aroused by some leader to take the Negro out of jail and to kill him, they are affected by the raving cruelty of the rest and ready to act far below their usual moral standard. This occurs probably in a state of diminished consciousness which somewhat resembles intoxication. Every strong sthenic emotion may become the effective background of mass suggestion, be it enthusiasm, love for a leader, hatred, despair, terror, or sexual excitement. It goes along with a lowering of the level of rationality and a weakening of the individual's personal purposiveness.

Suggestion assumes the form of imitation in those less acute forms of mass suggestion which are actualized in customs, fashions, manners of speech, popular slogans, or popular songs. They may sweep the country in an amazingly short time, overruling individual taste and dying out after some time, only to be replaced by another mass suggestion of the same kind. Obviously the public wants and needs them, and since, due to an intrinsic rule, their appeal is limited in duration, change also is required.

HYPNOSIS

Closely related to the phenomenon of mass suggestion is that of *personal suggestion* and one of its specific forms, *hypnosis*. The most potent factor in personal hypnosis is *authority*, which ties it up with mass suggestion. For a person's authority implies, for those who believe in it, its validity for other people as well. A student submits to the authority of a beloved teacher the more readily the more he feels that the entire class believes in this teacher. In public demonstrations of suggestion and hypnosis, the demonstrator's success depends entirely upon the atmosphere of authority and general willingness to believe created by his suggestive personality. Thus, the single "medium" submits the more readily to the demonstrator's suggestions the more he feels that all the rest of the audience would do the same.

Additional light may be thrown upon the phenomenon in question by the genetic approach of psychoanalysis. According to this, the original situation which, as a pattern, accounts for personal suggestion is the child's relationship to his parents. There are two ways used by parents to impose their will upon children: the gentle one, by soft persuasion, and the violent one, by fussing and threatening with punishment. In the average home situation, the former way is mainly used by the mother, the latter by the father. In the everyday experience of being put to sleep the baby may submit to either one or to both combined. Accordingly, psychoanalysis distinguishes between "mother hypnosis" and "father hypnosis," and, indeed, both technics are used in the hypnotist's practice, though the gentle method is prevalent. Both forms are based upon patterns of early conditioning which largely determine the individual's relation to authority in general. The ideal

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subject for a hypnotist is one who has been a very obedient child, readily submitting to his parents' authority. He gives way to persuasion and even enjoys it, as he enjoyed obeying his parents and being praised for it. This attitude can, to some extent, be related to "masochism," or sexual satisfaction derived from being dominated by a powerful person.

On the other hand, persons who as children rebelled against their parents are likely to resist every suggestion and, therefore, also hypnosis. Conscious resistance, however, is not the decisive factor. The child who overtly fights against his father may inwardly feel the latter's authority, and be afraid of him. It may be just his fear which causes him to fight. Sometimes struggling opposition suddenly gives way to passive submission. The same may happen to individuals of this type later in life, when they fiercely resist suggestion and hypnosis and nevertheless, even to their own surprise, yield to it. This holds for personal as well as mass suggestion, exerted by authorities.

Those children who developed into early independence presumably will turn out, when grown up, to be very little subject to suggestion and not apt to be hypnotized. Eventually, the degree of suggestibility is determined by the individual's conative attitude, which largely overrules childhood patterns.

The usual procedure in hypnosis is that of sleep suggestion. The subject is placed on a couch in a quiet and dimly lighted room and is told to relax and to focus on the hypnotist's eyes or some small object held in front of him. Gentle strokes over his forehead or his temples may be used but not necessarily. At the same time, the hypnotist tells the subject that he is going to sleep, suggesting to him all the usual feelings of a man falling asleep. The state of hypnosis is attained when the subject accepts the hypnotist's suggestion that his eyelids are dropping and that he is unable to raise them again, even with an effort.

Judging from the hypnotized subject's appearance and behavior, one might suppose him to be half asleep or dozing. In fact, we know that it is sometimes possible to converse with a dozing person without awakening him altogether. Also hypnosis may turn into real sleep when the hypnotized subject is left alone without the suggestion to wake up after a definite time. Finally, we know that hypnosis, when it is preceded by a strong sedative, can be performed with some people who otherwise resist it. The question of how this state of drowsiness which, after all, is physiologically different from that of wakefulness, can be produced by the merely psychological means of suggestion is still unsolved.

During the state of hypnosis, the subject is ready to perform whatever he is told to do by the hypnotist, the more readily the deeper the hypnosis, and to produce, as a hallucination, every sensory experience suggested to him. He raises his arm or drops it, stands up or sits down, dances or plays the piano. He feels his arm to be paralyzed when the hypnotist makes him believe it to be so and seems to be actually unable to raise it, despite all his efforts. He does not feel painful pinpricks when told that he does not feel them; he smells imaginary roses or drinks a salt solution with every sign of pleasure when the suggestion has been given to him that it is wine. He may afterwards feel intoxicated and act like a drunken man with the skill of an actor.

In case of a successful hypnosis, the subject usually accepts the suggestion not to remember anything of what has happened after waking. This "posthypnotic amnesia" can be undone, however, by the hypnotist's own suggestion. Often, the hypnotist succeeds in giving the subject suggestions to be carried out after the hypnosis is terminated (posthypnotic suggestions). Due to his amnesia, the subject carries them out with-

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out being able to account for them. When asked for his reasons, he usually gives some superficial excuse.

It has to be stated, however, that hypnotic and posthypnotic suggestions have their limits. Nothing can be successfully suggested which definitely runs against the subject's personal aims and purposes. Nobody can be made to commit a crime or to commit suicide by way of hypnosis.

PERSONALITY DEVELOPMENT

Whereas, at the beginning of life, the biological scene is all set, only to be increased and enriched by further conditioning, the personal integration is at a point near zero. Step by step, as the individual grows into maturity, the personal determination of human activity emerges and, together with it, responsibility in the person's relation to society, as its most important function. *The person himself* takes over the control of the whole organism with all its mechanisms, conditioned and unconditioned, and selects and decides upon the way to go. Henceforth conditioning itself is determined to an ever increasing extent by the person's aims and purposes. Slowly, by degrees, the biological function of congenital instincts and abilities, more or less conditioned by early experiences and shaped into patterns, is covered by superimposed structures of *evaluation*. This emergence of the universe of values which is the essence of human life takes place, for reasons which have to be pointed out, within the frame of reference of *self-evaluation*.

MANKIND'S PROLONGED CHILDHOOD

A biological fact of high importance seems to be that of mankind's prolonged childhood. The duration from birth to puberty is, in Man, one-fourth to one-sixteenth of his total life

span, which is several times larger than the respective ratio of any animal, including apes and monkeys. It takes one and one-half years until the human baby is able to walk without the permanent aid of adults. The same stage is reached by other mammals in some weeks. The high level of human culture accounts for delayed maturity, and therefore the time when ultimate independence in social life is attained varies according to the cultural environment. It is much earlier in children growing up in the country than in city children.

The fact of delayed maturity in humans accounts for incongruity between a child's state of independence and his mentality. The latter is far ahead of the former. That is why human children rather than the young ones of other animals are enabled to evaluate themselves in comparison with others and come to realize their own smallness and weakness and the superiority of adults. To some extent, therefore, it can be said that a *feeling of inferiority* must be a normal occurrence with children.

WAYS TO OVERCOME THE FEELING OF INFERIORITY

What we observe during infancy is not primarily the child's feeling of inferiority but various attitudes and ways of behavior which can be interpreted as ways to overcome it.

One of them is the way of *actual progress*, or the child's ambition to be equal to adults in his achievements. It becomes more and more visible as the child grows up. At school age, he is ready to sacrifice part of his playtime in order to live up to his dignity as a student. He really goes to work, though he has, of course, to conquer some inward difficulties in so doing.

Another way of compensation is that of *play*. Among other functions, play accounts for the development of the child's role consciousness. He imagines himself to be a doctor, a mother, an engineer, a cook, or a policeman, and thus tem-

porarily satisfies his desire to be grown up and really do things by the short cut offered through his imagination. Whereas real progress requires work and patience, in the imaginative play no effort is needed and the end is reached immediately, be it even in a fictitious form. No wonder that many children make poor marks in school just because they enjoy play so much.

A third way of overcoming the feeling of inferiority may be called the way of *self-assertion*. Being too small for positive and constructive accomplishment, naturally the child tries at first to assert himself in negative and destructive ways. This "period of stubbornness" usually culminates in the child's third year. The infant soon learns to cry, not for any good reason but in order to force his mother to remain with him. Refusal to submit to cleanliness and the control of bowels and bladder affects his parents a great deal and thereby strengthens his self-assertion. "No" becomes his favorite word because it is the most powerful one, capable of upsetting his parents and imposing his own will on them. He enjoys destroying his toys, this being the only way he knows of producing some visible change in things—another yardstick of his power.

Finally there is another way, perhaps the most characteristic, which helps a child to overcome his feeling of inadequacy. It may be called the *strategy of weakness*. When adults are ready to help him, he does not feel weak any more. Thus he learns to enjoy dependence and to dominate adults by his very helplessness. Naturally, this tendency interferes with real progress. It warns the baby not to overstress his independence and adequacy because this would mean losing his hold on other people's help. It can often be seen that the child tries to compensate for every step forward by one or two steps backwards. One of the most frequent forms of this strategy of weakness is *fear*. It is the same tendency which makes the child decline to eat by himself, although he is able to do so, which

makes him insist on his mother's help in washing, dressing, or tying his shoestrings, or on her sitting by him to help him with his homework.

These four ways of dealing with the problem of self-evaluation are most clearly seen in children. However, they are not limited to the childhood period in the chronological sense. Childhood never really ceases. Daydreaming, policies of prestige, vanity and arrogance, dependency and inefficiency in adults can be traced back to those childhood patterns.

BEHAVIOR PATTERNS

Patterns of behavior are well-established and fixed habits of thought, feeling, and action which possess functional autonomy (G. Allport). They can be changed whenever they turn out to be opposed to the general trend ruling at the personal level. They have been formed, by way of conditioning, in childhood, under the influence of personal purposiveness, which is part of the child's struggle for self-assertion. As they seem to apply to a large number of individuals, they may be used as bases of a typology of character. On the other hand, whenever we try to apply such a typology to an individual case, we feel that the *strictly individual* style of life is not at all covered by a type. This apparent contradiction can be solved by considering the difference of levels. The type, representing temperament and early conditioning, exists on the biological level only. Superimposed on it there is the individual's personality which, as such, is unique.

DEVELOPMENT OF SOCIAL FEELINGS

The early development of social feeling is closely related to the problem of self-evaluation. Definite social tendencies only develop during the fourth year of life. Up to this time

children are altogether egotistical, which means that they have no understanding of solidarity nor of other people's interests. The infant's attachment to his parents has little to do with social feeling. It is primarily dependence, directly related to his helplessness. Similarly, the baby's interest in siblings and playmates is hardly different from his interest in toys. Generally speaking, his relationship to his surroundings merely consists in asking for and taking what he needs and desires. Real social feeling, whenever it develops, is characterized by mutual giving and taking. The child, however, cannot be expected to conceive the idea of, or to practice, voluntary giving as long as he feels himself to be small, weak, and dependent. Real love, in other words, presupposes some feeling of strength or adequacy. At the age of three years, the child's functions, such as walking, talking, and handling objects, have developed far enough to supply him with some feeling of security. The idea of "subjects like myself," which is probably one of the main conditions for social feeling, has entered his mind. Thus he tries his first steps into social life.

This development, it is true, is jeopardized, to some extent, by the child's negativistic tendencies mentioned earlier. Social feeling and self-assertion enter into conflict with each other, the latter being supported and fed by the child's persisting feeling of inadequacy. "Strategy of weakness," which tends toward domination over others in order to avail one's self of their services as long as possible, is just as much opposed to the development of social feeling as self-assertion. The main task of education during this period is to encourage the child to give up the security hitherto due to his self-assertion, to services of adults, or to his retreat into imaginary satisfaction, and to replace it by the better security of social relationship. Self-confidence and confidence in others are closely correlated, not only in children. Readiness to give arises from the feeling

of the ability to give, and the appreciation gained as a reward for one's contribution to the community is an additional support of his self-confidence. Thus, the child slowly emerges from dependence and the feeling of inadequacy, expressing themselves in egotism, to stronger objectiveness and decreasing emphasis on his own self.

FACTORS OF PERSONALITY DEVELOPMENT

Childhood experiences represent the most important factors of personality development, insofar as they reflect themselves in the child's self-evaluation. This way, persistent patterns of behavior are formed which constitute a person's character.

Roughly these factors of personality development can be divided into five groups, two of them intrinsic, the others extrinsic to the individual. The intrinsic ones are bodily condition and sex; the extrinsic ones, social and economic factors, family constellation, and education.

PHYSICAL CONDITION

The importance of *bodily factors* for psychic development at the biological level has been discussed above. This time, however, we are dealing with the question of how bodily conditions affect self-evaluation and, thereby, determine trends and purposes. What happens on this level may be illustrated in the case of digestive difficulties, so frequent in infants. A minor gastro-intestinal disturbance, causing temporary loss of appetite, may turn into chronic feeding difficulty if not handled properly. Overanxiousness in the mother, who tries to feed the baby by force, arouses its negativistic resistance. This may lead to lifelong overemphasis laid upon eating and digestion and to stubbornness as a form of self-assertion.

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Similar to the digestive apparatus, every other organic system can become the center of attention and, thus, overemphasized whenever it happens to cause trouble. The handicap produced by physical ailments is likely to increase the child's feeling of inadequacy, unless it has existed ever since birth or early infancy, so that the child has assimilated it altogether. Deficiencies of the sense organs or defects of the motor apparatus such as palsies due to infantile paralysis may be overcome emotionally by compensation or even turned into assets. On the other hand, handicapped children may become awkward, shy, self-conscious, given to daydreaming, hypersensitive, or domineering.

THE PSYCHOLOGY OF THE SICK

In many respects, the behavior of the adult sick person duplicates that of the handicapped child. There are patients who with the first symptom of disease, be it ever so slight, stop all activity, go to bed, and ask for medical help and nursing; there are others who disregard sickness as long as they possibly can and insist on carrying on their work and their usual routine until they are forced by weakness or by their relatives to go to bed. Hypochondriac exaggeration as well as heroism, determined by childhood patterns, have to be taken into account in the evaluation of subjective complaints. Again, it is the person's self-evaluation which reacts upon the experience of sickness in its various aspects: pain, weakness, dependence on others, inactivity, and, last but not least, the possibility of death.

SEX

In considering sex and its importance for personality development, we mainly refer to sex as experienced by the child

and as a factor in his self-evaluation. In the child's experience, the difference in clothing and in things which "can be done" by a girl and by a boy, respectively, is felt very soon as a difference in *social value*. He discovers that the male seems to be superior to the female. Boys are proud to be boys, readily making use of the privileges due to their sex and trying to live up to its obligations. Girls submit to their destiny of being "just girls," trying to make the best of it or sometimes fighting against it. Their "masculine protest" (A. Adler) accounts for the tomboy attitude of many girls and for behavior difficulties on the one hand and for actual accomplishments in vocation and sports on the other.

In both sexes, the quality and intensity of the sex instinct are largely determined by early childhood experiences as reflected in self-evaluation.

The social connotation of sex life is quite obvious in *masturbation*, which is one of the major problems of personality development, at least in the stage of puberty. It is regularly combined with isolation, seclusiveness, and self-consciousness, in children as well as in adults. This asocial attitude is just as much the consequence of the sexual habit as its cause. The entire complex is closely related to the crisis of puberty which, in its various forms, constitutes the adolescent's response to the physical and social implications of his age level.

Proper guidance for adolescents, including instruction on what is to be considered "normal" sex life, is an important part of mental hygiene. The solution of these adolescents' problems largely depends on the religious and ethical standards of their cultural environment. No general answer is possible.

Other critical periods of sex life have to be mentioned, as far as women are concerned: menarche, pregnancy, childbirth, and menopause each constitute momentous events in a

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woman's life, requiring readjustment. How far and how satisfactorily she succeeds again depends on her established patterns of behavior, feeling, and volition.

SOCIAL AND ECONOMIC FACTORS

The importance of the social and economic background of a child's life for his psychological development has been recognized long ago. There are factors which have direct influence on a child's development, such as greater morbidity in the lower economic strata and the cultural atmosphere of a home. Of greater importance probably are those factors which reflect themselves in the child's self-evaluation. There is the continuous experience of frustration in a poor child's life; the fact that children of the poor are often forced to work at an early age; that their parents often cannot afford to give them as much attention as they need. All these facts taken together may account for the higher rate of delinquency found among the children of the slums.

The wealthy child, on the other hand, while being generally in a better position, may often be handicapped by pampering, oversatiation, and lack of attention from parents who are too busy with social life.

FAMILY CONSTELLATION

Under average conditions, the family is the first social unit to which the growing infant belongs, and therefore, the patterns of social behavior developed within this unit are likely to determine largely the individual's later social attitude.

The personality development of orphans and children from broken homes is strongly influenced by the lack of a normal upbringing in a family. The situation of an only child

who invariably is the center of attention imprints itself in his character for his lifetime. It is also self-evident that in a family with several children the environment may be altogether different for every one of them. The oldest and the youngest, the only boy among girls and the only girl among boys are growing up under characteristically different conditions, the effect of which can usually be traced down into their patterns of behavior as adults. In every case, it is not the actual situation that counts but the way this particular child experiences it and the effect it has on his self-evaluation.

EDUCATION

Education is hardly to be separated as a factor of personality development from the family constellation. In general, educational influence on the child's personality only becomes prevalent when it goes to the extreme in one direction or when it is continued for a long time. Damage, therefore, mainly arises from excess on a line which, by itself, may not be altogether wrong. Overattention in its various forms and too strict or too lenient an education are liable to mould a child's social attitude. Most important of all are neglect and rejection on the parents' side, which with surprising regularity lead to juvenile delinquency.

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Methods and Technics of Clinical Psychology

THE PURPOSE of this chapter is to explain the most important methods used in present-day clinical psychology: experimental on the one hand and analytic interpretative on the other. While the physician is not called upon—unless he is a psychiatrist—to make use of these methods himself, he ought to have a working knowledge of these technics in order to be able to evaluate their results.

PSYCHOMETRY

Those experimental methods which are of practical importance in clinical psychology are, to begin with, those of the measurement of intelligence, or *psychometry*. The psychometric methods most in use in this country are the *Stanford Revision of the Binet-Simon test* and the *Bellevue-Wechsler test*, the former being mostly used for children, the latter for adults. Furthermore, for quick evaluation and of sufficient exactitude for certain practical purposes (screening), the *Kent Emergency Scale* is in use.

Both the Stanford-Binet and the Bellevue-Wechsler tests are largely based upon verbal intelligence. Therefore, they

often have to be supplemented by *performance tests* which require practical rather than verbal intelligence.

The basic principle of psychometry will be explained in the Stanford-Binet test. This test is statistically standardized for the average of a very large number of children and adults. Based on this test, the mental age and the intelligence quotient (I.Q.) of any subject can be calculated. These are supposed to represent his intelligence as compared with the average of his age group. The test consists of different sets of six questions each, for ages 2 to 14, plus two "superior adult" levels. These questions are increasing in difficulty by steps of 6 months, by one year and two years in the higher brackets. Since it has been found that intelligence, as measured by tests, does not considerably increase after the age of 15, the 15 year level is used in the calculation for every adult.

A child of 5 years, for instance, is supposed to answer correctly all six questions corresponding to his age level. If he does, his *mental age* is identical with his real, or *chronological*, age. In case he fails in one or several questions, the examiner goes back to the next lower level and so on until he reaches the level at which the child answers all six questions. This level is called his *basal age*. For every question answered beyond the basal age, the child earns one month's credit (in the higher brackets, it is somewhat different, but we need not go into these details). His basal age plus the number of months earned beyond the basal age is called his mental age. Suppose our child of 5 years did not answer any question at the 5 year level, none at the $4\frac{1}{2}$ year level, three at the 4 year level, 5 at the $3\frac{1}{2}$ year level, and all at the 3 year level. His basal age, then, is 3 years. Since he answered eight questions beyond his basal age, his mental age is 3 years and 8 months.

The child's *intelligence quotient* is the ratio between his mental and his chronological age, as expressed in the percent-

age of the latter: 100 m/c. In case m (mental age) equals c (chronological age), the I.Q. is, according to this formula, 100, which means normal, average intelligence. In our example given above, m equals 3 years and 8 months, or 44 months, and c is 5 years, or 60 months. Then, the I.Q., or 100 m/c , is $4400/60$, or about 73. Having 73 per cent of the intelligence normal for his age, the child is subnormal mentally. Thus it is possible to express in figures the degree to which an individual's intelligence is below the normal. The most widely accepted classification, that of Terman, is as follows:

I.Q.	Rating
90-110	Normal
80-90	Dull
70-80	Borderline deficiency
50-70	Moron
20-50	Imbecile
Below 20	Idiot

All cases with an I.Q. below 70 are rated *feeble-minded*.

The same method of calculation is used for superior intelligence. In such a case, an individual is able to answer all the questions of his own age level and, in addition, some of those beyond this level. His mental age being higher than his chronological age, his intelligence quotient will naturally turn out to be more than 100.

Psychometry has acquired considerable importance. Many schools make admission of a student dependent upon a minimum I.Q. Considering this practical use of psychometry, it is necessary to warn against overrating its apparent mathematical exactitude. The rates established for every age level, in the Stanford-Binet test as well as in others, are found to be *statistically* correct, which means that they are valid *as an average* for a very large number of children and adults of the

most different classes. The same test is used for the child of a Southern Negro farmhand and for the son of a Harvard professor. Of course, the difference between these two tests will be tremendous; it may easily be that the Negro child makes an I.Q. of 70, and the professor's child 130. This does not mean, however, that the former is feeble-minded and the latter a genius, if by these terms we understand innate intelligence. The difference indicates, primarily, the very different cultural levels of these two children; both may be normal, considering their respective backgrounds. Obviously, the child's environment must have a tremendous influence upon his mental development. Psychometry cannot be used to differentiate between innate and environmental factors.

While it is true that the intelligence quotient tends to be constant in the same person at various age levels, there are many exceptions to this rule. This is due to the fact that various factors other than intelligence have influence on the result of the test. One has to consider the child's relationship to the psychologist, his general state of mind and his mood at the time of testing, his present readiness to cooperate, his interest in the questions asked and tasks to be fulfilled. Also the child's habitual attitude toward situations which resemble an examination has to be considered. He may be very ambitious and earnestly try to do his best, or he may be indifferent, or shy and self-conscious, anticipating defeat, or stubborn and resistant against any approach of this kind. In addition, as mentioned above, the child's cultural background makes all the difference in the world.

When used in a judicious manner, psychometry has its value. A normal or supranormal I.Q. rules out mental deficiency, just as a stream can never rise above the level of its source. On the other hand, an I.Q. below normal indicates subnormal intelligence only under certain conditions: (1) if it

is far below; (2) if there are other signs indicating low mentality; (3) if there is reason to believe that the child tried to do his best; and (4) if there are no extraordinary environmental factors which might have influenced the result.

When used for a comparison of large groups, tests are, of course, more reliable. The average intelligence, for instance, of country people can be compared with that of city dwellers. In large numbers, the errors which cannot be avoided in single cases will compensate one another, the more so the larger the numbers are. Inferences made from group tests only apply, of course, to the discriminative factor, i.e., in comparisons between country and town people, to the different social environment and its specific influence. They have little value unless the groups are carefully selected so that the discriminative element is isolated, without interference from other factors.

TESTS ON EMOTIONS

Among the physiological phenomena which are concomitant to emotions and affects, there are some which can easily be checked with exact methods, namely blood pressure, pulse rate, and respiration. It is, therefore, possible to prove emotional excitement in an individual by sudden variations in the curves registering these three functions. Recently this technic has been used in criminal practice, employing an apparatus designed for registration of those three curves ("lie detector"). Since some emotional reaction usually goes along with lying, it could be shown that every conscious lie of the subject under observation is accompanied by a sudden rise of the curves of blood pressure and pulse rate and by irregularity of the respiration curve. Obviously this method, interesting as it is, can hardly give sufficient evidence of the guilt of a person incriminated. A variation of these curves *may* be, but must not abso-

lutely be, due to the particular emotion evoked by the question, and this cannot be read from the curves, which only register emotion and nothing else. On the other hand, a person who is firmly set on hiding the truth may have enough self-control not to give himself away even under the lie detector.

Another technic, similar to the former, is known under the name of the *psychogalvanic reflex method*. In this method, the electric action currents of the body are registered, the electrodes being applied to the person's skin. The strength of the current is measured in milliamperes with a galvanometer. With every emotion produced in the subject tested, the galvanic current increases temporarily. This is probably due to the fact that emotion causes increased perspiration and that the moisture of the skin is in an inverse ratio to its electric resistance. When the resistance is lowered, the current increases.

PROJECTIVE TESTS

All those tests in which psychological contents, including persistent attitudes and patterns of behavior, are thought to project themselves in test results are called projective tests. They are used for experimental personality studies. We know that character can be described as the sum total of fixed habits of response to typical experiences, or stimuli, which have been developed through early conditioning. Hence it must be possible to establish by observation certain constant correlations between objective, measurable functions on the one hand and certain character traits or attitudes, on the other. As a typical example of these methods, scientific *graphology* has to be mentioned which has been developed, mainly by German authors (Klages, Becher), to an almost exact technic. Graphology only considers the handwriting proper with all its details, regardless of the content of the sentences written. Klages

distinguishes the following qualities in handwriting: regularity and evenness, distribution, speed and heaviness, breadth, angle of incidence, "pastiness," consistency, connectedness, variety and tendency, initial stress, crossing out and dynamic distribution. All these qualities are, to some extent, measurable, whereas the general quality of "form level," a value concept which is much emphasized by Klages, can only be felt, not measured.

Another, more recent method of characterological investigation, the *Rorschach* test, goes somewhat beyond the scope of character diagnosis, inasfar as it is applied to testing mental functions, moods, and temperaments as well. When ink blots are made on a sheet of paper and the sheet is folded, the wet blots are reprinted on the opposite half of the sheet so that symmetrical figures of various contours and various darknesses are formed. These figures, or parts of them, may remind the person looking at them of certain objects, such as butterflies, heads of animals, plants, human figures, and landscapes. The particular kind of interpretation which an individual gives to these ink blot figures has been found to be a valuable clue for the diagnosis of his mental and emotional attitudes. By standardizing a set of ten ink blot figures, some of them in various colors, a method of scoring the responses has been devised according to whether the subject mostly interprets wholes or details, whether shapes or colors are more emphasized in his interpretations, whether they are primarily determined by differences of dark and light, etc. This way, a rather complex system of "Rorschach diagnostics" has been developed. Preference for colors, for example, is considered as significant for extraverts, preference for shapes for introverts. The findings seem to check fairly well with direct observation and the results of other testing methods.

A more recent test, the *Thematic Apperception test*

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(TAT, or Murray Picture test), consists of a series of 20 pictures depicting potentially emotional situations. These situations, however, are not unequivocal: in interpreting them, the subject has to make use of his imagination. In doing so, he may express attitudes, feelings, and "complexes" which he would not have expressed otherwise.

THE METHOD OF QUESTIONNAIRES

The use of questionnaires for character study has gained considerable importance, partly because those questionnaires in which every question has to be answered with "Yes" or "No" furnish material which readily yields to scoring. Comparatively simple problems, such as the distinction between introverts and extraverts, can apparently be approached with these methods. The ambition of this method, however, goes further: questionnaires have been made the bases of "personality studies."

One of the recent questionnaire methods which is about to gain practical importance is the *Minnesota Multiphasic Personality Inventory*. It consists of more than 500 questions which have to be answered with "Yes" or "No" or "Cannot say." By way of an ingenuous scoring system, a scoring curve is obtained which may show abnormally high subscores for items such as "hysteria," "psychopathic deviate," or "schizophrenic." With limitations, the shape of the curve rather than the single scores seems to be of diagnostic importance.

ANALYTIC-INTERPRETATIVE METHODS

Purposiveness and meaning are the basic categories of psychological processes, including consciousness, or awareness, as one psychological function among others. Whether or not

psychological processes are subject to consciousness depends upon the conative pattern to which they belong. We are able to eliminate consciousness in a given case if it better suits our purposes. Of course, psychology found it hard to admit that there could be any such thing as an unconscious psychic process, but this objection is obviated if we rephrase our problem to state that introspection is not the only source of psychic material. Freud was able to prove that there are psychic contents which are not characterized as such by awareness but by their effectiveness in determining behavior. The quality of consciousness is given, according to Freud, only to part of a person's psyche, viz., that which is incorporated in the "ego." Those parts which are immediately in the spotlight of attention are "conscious" in the stricter sense, whereas ideas or memories which are, at present, in the background but are available at any time are called "preconscious" by Freud. *Unconscious* contents are, according to Freud, only those which have never been conscious and those which are not available because we do not want to remember or because we want to forget them.

Our previous statements about memories of recent, past, and remote events need, therefore, to be supplemented. We mentioned (see page 83) that memory traces, once they have become "past," are, for the most part, forgotten after they have been available for some time, together with the configurational pattern to which they belong. Only a few of them are selected to be turned into the "currency" of timeless, remote traces. Purposeful forgetting in the sense of Freud refers to recent and to past events as well as to remote ones. Every one of us is able to estimate rather exactly the capacity of his memory. He knows what he "ought to" remember. He is puzzled when he cannot remember whom he met this morning in the streetcar, although he knows he met someone. He tries to find an ex-

planation for the fact that, right now, he fails to remember the telephone number of a friend which used to be familiar to him or the name of the street where he used to live as a child, which usually belongs to that stock of timeless traces which are always available. Memory, which is usually a fairly reliable mechanism—reliable in accordance with individual standards—can be *blocked* at times. The question arises, What accounts for the blockage?

UNCONSCIOUS TENDENCIES

According to what has been said above, the general explanation offers itself that I forgot, say, my friend's telephone number because *I wanted to forget it*. In this case, forgetting is an active process and like every action is to be explained by its motive, or purpose. Suppose it was the number of a friend who owes me some money, and I decided to call him up in order to remind him of his debt. I hate to do that. Therefore, I would rather not call him up, although I ought to. Of course, I could have decided not to do anything. But this would probably have been contradicted by my reason; I need the money myself, and, after all, he promised to pay me long ago. Thus the trick of making a sensible decision and at the same time preventing myself from carrying it out serves two purposes: (1) it makes it possible for me not to do what I really do not want to do, though I ought to do it; (2) it relieves me from responsibility, since I do not feel responsible for my poor memory, whereas I would have had to blame myself for not doing the sensible thing.

From this example it may be learned that, in order to serve its purpose, both the content that I ought to remember, and the tricky and purposeful mechanism of forgetting must be unconscious. In this case only is it possible to reconcile two

different aims which otherwise would have been incompatible: to make the right decision, which is a matter of conscience, and to do the wrong thing, which I actually prefer. Obviously, consciousness and conscience, those two words so similar to each other, are also in some way related as to their meaning. Our conscience holds us responsible only for what we do consciously. Therefore, the only way open of doing things for which we would have to blame ourselves is to do them unconsciously.

This is what we are doing almost every day. We fail to recognize a person whom we meet but whom we do not like, whereas we recognize those we like. We forget more easily our debt to others than their debts to us. When a salesman or a waiter makes a mistake in his account, the bill usually turns out to be too high, very seldom too low. We are always exactly on time for a date which we gladly look forward to, but we may be late for or entirely forget about an appointment which is unpleasant.

"Distraction" is a hazy state of mind in which we are most likely to do things under the direction of unconscious impulses. It may occur that an unfaithful husband calls his wife by the name of his paramour. A visitor may unconsciously express his desire to come back soon again by leaving his hat in your room, so that he has to come back. Mistakes and slips of the tongue may sometimes express one's true intentions in a rather humorous way, as in the case of the lady who repeated the physician's permission given to her husband, "to eat whatever he wanted" with these words, "so he can eat whatever I want."

In all these cases and in many similar ones the interpretation given to them may, or may not, be true. It would be all wrong to suppose that everybody who forgets another's name does not like, or wants to offend, that person. The interpreta-

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tions given above are meant to be examples of cases in which they were probably valid. They always need to be verified by other data pointing in the same direction, and only the coincidence of all of them makes an interpretation valid. Sometimes the fact that the person himself readily admits the impulse which seemed to be expressed by an error may bring the interpretation to evidence.

INTERPRETATION OF DREAMS

We mentioned already that the somewhat diminished mental acuity of a distracted mind often offers an opportunity for hidden impulses to express themselves by errors. The same holds for tiredness, drunkenness, and similar slightly abnormal conditions. Naturally, another mental activity which is entirely healthy and nevertheless abnormal in a sense, that of dreaming, falls under the same category. In fact, the interpretation of dreams has been developed along the same line into an elaborate technic. The credit for this is entirely owed to Freud. His theory is based upon his assumption that the dream invariably expresses forbidden impulses. The censorship exerted by conscience, while weakened during sleep, is still strong enough to distort the dream and to make it hard to understand. Many dreams, it is true, are immediately understandable, in case one knows the dreaming person and his present problems so well that one can guess what he might dream about. On the other hand, without that knowledge, dream interpretation is only possible if additional material is supplied by the subject. The way of obtaining his material constitutes the technic of dream interpretation.

It is entirely based upon the purposive structure of the human mind. When discussing associations in the second chapter of this book, we mentioned the fact that the associative

mechanism is not quite so mechanical as it seems to be. Among numerous associations which are possible in a given instance, the ego selects a particular one. There is, then, a dynamic factor or determining tendency responsible for the selection. This determining tendency must be, in some way, related to certain trends existing in the person. Thus, it must be possible to infer from a series of responses their common determining tendency, if there is any, which accounts for these particular responses in this particular instance. Freud's method of dream interpretation is based on these principles, which he put forwards under the denomination of "psychic determinism." This means that associations, memories, and other responses never occur at random or owing to some hypothetical cerebral process, but that they are strictly determined by psychic factors of a dynamic character, i.e., by tendencies which may or may not be conscious. Since the person himself cannot, by definition, tell us anything about his unconscious trends, a way of discovering them is needed. This way offers itself through associations which, when they are determined by one dynamic factor, are likely to overlap with one another in a group of elements close to the factor mentioned. Freud takes it for granted that whenever a person is asked to concentrate on a particular part of a dream those (unconscious) tendencies which had been at work when the dream was dreamed are likely to be active. Everything, then, which comes into the person's mind while concentrating on that part of the dream is likely to be close to the latent dream content. Thus additional material is gathered which is just as much related to the latent dream content as the dream itself. The relation may be quite superficial, as, for instance, merely by sound, or indirect. In addition, its meaning is not always clear, or there may not be any relation at all, because some other tendencies have interfered. But with a sufficient number of associations one usually

succeeds in interpreting the dream, piece by piece, eventually integrating the whole.

Since many tendencies symbolically expressed in the dream are of a kind which the person does not like to admit to himself, it is not surprising that the person, who somehow has a hazy knowledge of what is going on within himself, offers resistance against the interpretation of his dream. This resistance is often felt by a blockage of his associations; his mind goes entirely blank whenever he fixes his attention on the dream. Or in other cases the associations he produces are more determined by his resistance than by the dream content. Resistance, however, can be overcome.

Dream interpretation offers not only scientific interest but is also much used in the psychiatric treatment of neuroses. Those unconscious trends expressed in the dream language are likely to be the same which also account for the patient's neurosis, and therefore the interpretation of the dream may help in understanding the neurosis.

ASSOCIATION TEST

The same method of "free association" is used for the interpretation of errors, forgetting, etc., such as those quoted earlier, and of fantasies and daydreams which are, of course, much easier to understand than the distorted dream language. The psychoanalytic method of psychiatric treatment consists entirely of interpretations with the free-association method. In this case, the purpose of the procedure is not primarily to understand dreams, errors, etc., but to discover those unconscious trends and purposes which determine a person's attitude and behavior. To this end, *experimental methods* can be used to produce material for interpretation, in addition to those spontaneous productions. One of them is the association test of

C. G. Jung. It uses a standard list of a hundred words, chosen from all fields of everyday life. The subject is asked to answer immediately to every word spoken to him with the first word that comes into his mind. Usually, the associative responses are the most obvious ones, such as "book, reading," "water, thirsty," "father, children." The time elapsed between the stimulus word and the response—called "reaction time"—is measured with a stop watch. Thus, the person's average reaction time can easily be established. The entire procedure consists of the subject's response to the hundred words of the standard list with a notation of the reaction time and the reaction words. When finished, it is done over again and the subject is asked to respond with the same words as before, if he remembers them, which is usually the case. Among the one hundred reactions obtained this way, there are usually several which differ from the rest by certain characteristics, as, for example, prolonged reaction time, out-of-the-way reaction, emotionally tinged response words, repetition of the same word, failure to respond at all, or failure to recall the first response at the repetition, with errors in memory. Sometimes a response goes together with some emotional reaction, such as blushing, stuttering, or giggling; at other times, perseveration occurs, i.e., a series of responses is evidently associated between themselves rather than to the respective stimulus words. The test can be combined with the psychogalvanic reflex method described above, and a sudden increase of the action current together with certain responses is noted. All these peculiarities are called "complex signs" and are considered as evoked by those stimulus words. Afterwards the free association method can be used for the interpretation of the complex responses.

Looking over the psychodiagnostic methods described in this chapter, we are bound to admit that every one of them is valuable. All of them, however, fall short of the aim of measur-

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ing a person's purposive pattern or his personality as a whole. But it may be that at our present level of knowledge measurement is not to be made the main issue. What needs to be done is to *understand human action at the personal level in its own terms*, i.e., centered as it is around the functional unit, "individual and community," and directed toward the realization of values. All those biological methods of observation and experimentation designed to study the human apparatus of cognition and action, his emotional and instinctual mechanisms, his patterned habits and attitudes which we call his character are subservient to this one end of research: knowledge of the person in his relationship to the universe of values. Self-evaluation and evaluation of nonpersonal values are the essentials of human life as it is. Whatever biological elements exist in human personality obtain their meaning only from their character as instruments or materials for human value-directed activity.

Under this aspect, the most careful study of those subservient functions is worth while and more than justified. But the student of psychology should not forget that supreme emphasis has to be put on the highest integration on the personal level: Man as a responsible individual in his permanent and indestructible relationship to the community.

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