

**AN OUTLINE  
OF  
PSYCHOLOGY**

**JAMESON**

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OUTLINE  
No. 1**

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OF  
PSYCHOLOGY

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By H. LYSTER JAMESON, D.Sc.

Completely revised by  
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## FOREWORD

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**A**N *Outline of Psychology* was first published in December, 1921. By 1933 it had been reprinted seven times. As the demand for the book still continues unabated, this new and very considerably revised edition has been printed.

The Trade Union, Labour and Co-operative Movements cannot afford to neglect psychology. Advertisers make use of it daily in the advertising columns of the press to sell their goods—they frequently misuse it for that end. A Movement such as the Labour Movement which sets out to establish a new social order can no more neglect psychology than it can neglect economics or history.

The *Plebs* Text Book Committee was responsible for the first edition of the book—the draft of which was the work of the late Dr. Lyster Jameson. Dr. Jameson was well known to *Plebs* readers by his pen-name of "Nordicus." He died when the second edition was in the press on February 26th, 1922.

The present edition of the book has been extensively revised by Edward Conze, Ph.D., also well-known to *Plebs* readers. Thanks are also due to Eden and Cedar Paul for their revision work on this and previous editions, to F. J. Adkins, M.A., who carefully read the revised MS., and to J. F. Horrabin for a number of additional illustrations.

Other books in the Outline series are *An Outline of Finance* by Arthur Woodburn, *An Outline of Economic Geography* by J. F. Horrabin, and *An Outline of Economics* (revised by W. T. Colyer).

J. P. M. MILLAR,  
General Secretary,

National Council of Labour Colleges,  
15 South Hill Park Gardens,

6th February, 1938.

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# AN OUTLINE OF PSYCHOLOGY

## CHAPTER I

### INTRODUCTION TO PSYCHOLOGY

#### § 1

*Economics is the study of man's present relationship to the environment created by the material conditions of production.*

*History is the study of the past interactions between man and that environment. Psychology is the study of the ways in which man reacts to that environment. Man's reaction is effected*

*through a definite mechanism. The better we understand that mechanism, as it works in the individual and in the group, the better shall we be able, by our own conscious action, to adapt ourselves to the economic changes which are taking place in society, to concentrate our efforts into those channels which will lead to results beneficial to our class, and to avoid wasting our energy in unproductive directions.*

The student in the Independent Working-Class Education movement learns to interpret the social, political, legal, cultural, and religious institutions of society in the light of the *Materialist Conception of History*. According to this conception, these institutions, and the changes in them which make up human history, are the results of man's reaction to his economic environment. Man's ideals and aspirations, his beliefs, hopes and fears, are determined by the methods under which, for the time being, he gets his living. Economic influences mould his character and opinions, but often without his knowing it.

*The ways in which man reacts to his environment, and endeavours to act upon it, are called his behaviour.* It is the purpose of this book to introduce the student to the science of human behaviour, and to the study of the mechanism upon which be-



haviour depends. The mechanism of behaviour, the sum of the tendencies to act, and the underlying physical structures which determine these tendencies, are what we know as "human nature." There is a half-truth in what the enemies of socialism often say, that you cannot change human nature. Yet such an argument shirks the issue. How much of what is loosely called human nature is really the outcome of human nurture? *Essential* human nature has probably changed little during the last thirty thousand years. The mechanism of human nature is man's heritage from animal and sub-human ancestors, and could be changed only by selective breeding. But human behaviour can be changed, and does continually change, as man's economic environment changes. One group of impulses will be dominant in one form of society, another in another. The man who in feudal times found the pleasantest outlet for his "human nature" in robbery, murder, and rape, might, in modern capitalist society, satisfy the same tendencies by big business, imperialism, and keeping fancy women; the nature would be the same, the behaviour different, because the environment is different.

*The study of behaviour is called psychology.* Modern psychology is determinist. It finds that in human behaviour and human thought, as in the world of matter and energy, nothing happens without a cause, and that every happening, even such an apparently "chance" one as the particular number that springs to your mind when you are asked to think of a number, is the necessary outcome of what has gone before. It further teaches that *unconscious tendencies*, not reason, constitute the main motive force of human thought and action. Man is not at bottom a rational animal. He is a creature whose conduct is the outcome of an interaction between his material environment, on the one hand, and his instincts, his desires and his habits, on the other. Impulse, not conscious purpose, is the prime mover of action.

We shall find in the course of our studies that few people, and these only in limited fields of thought, are capable of unbiased reasoning. When they imagine that they have arrived at a conclusion as a result of reasoning, they have really arrived at it on non-rational or, as we often say, sentimental grounds; but the self-flattering habit of the human

mind is such that they unconsciously invent "reasons," which they honestly believe to be the real motives. *This process is called rationalisation.*

We shall find, further, that the human intellect is incapable of impartiality, except perhaps to a certain degree in matters of an abstract kind which do not touch personal inclinations and sentiments (e.g., mathematical study). The intellect is, before everything, an organ of partiality. It is an organ developed in the age-long struggle between man and his environment—developed for the express purpose of enabling him, out of the immense number of stimuli he receives, to single out and act upon those which have a relationship to his well-being, and to exclude and ignore those which have no such relationship, or a less obvious and urgent relationship.

Hence all the bourgeois talk about "impartiality" in education, where it is not conscious hypocrisy, is to be regarded as the outcome of that muddle-headedness and unconscious intellectual dishonesty which a decadent culture fosters and promotes.

## § 2

The behaviour of any man comprises (1) certain inborn responses (*reflexes*) which every individual performs without previous education, such as blinking when something touches the eye; (2) actions due to acquired *habit*, such as riding a bicycle; (3) complicated courses of action called *instinctive*, a sort of conscious automatism due to inborn tendencies, but much influenced by acquired experience, like seeking food, and escaping from danger; (4) actions which appear to involve a *choice* between alternatives, and which we tend to believe are due to free will. Man's behaviour also includes certain changes of bodily state, accompanied by feelings of a particular kind (e.g., rage), which are called *emotions*. These greatly influence action.

We shall see in the course of our studies that the actions, which unthinking persons tend to ascribe to free will, can be explained as the inevitable outcome of habits, or of systems of ideas, determined by the past experiences of the individual.

We shall learn that they are as wholly dependent upon what has gone before as the rising and setting of the sun.

Often the individual is not conscious of the nature of the particular habit or group of habits which determines his action. Thus, a devout believer in the existence of a personal god thinks that his belief is due to the convincing nature of the arguments which support it. In reality it is due to habits of mind acquired in childhood and fostered by the society in which he lives. Such habitual attitudes of mind, which unconsciously govern our actions, are called *complexes*.

Here is an example of a complex, and its rationalisation. Bernard Hart (*Psychology of Insanity*, p. 71) cites the case of a Sunday-school teacher who became an atheist.

He insisted that he had reached this standpoint after a long and careful study of the literature on the subject and, as a matter of fact, he really had acquired a remarkably wide knowledge of religious apologetics. He discoursed at length upon the evidence of Genesis, marshalling his arguments with considerable skill, and producing a coherent and well-reasoned case. Subsequent psychological analyses, however, revealed the real complex responsible for his atheism; the girl to whom he had been engaged had eloped with the most enthusiastic of his fellow Sunday-school teachers . . . . The causal complex, resentment against his successful rival, had expressed itself by a repudiation of the beliefs which had formerly constituted the principal bond between them. The arguments, the study and the quotations, were merely an elaborate rationalisation.

We must realise clearly, from the outset, how much these unconscious complexes govern our actions, even those we regard as based on argument. Our political convictions, our moral and ethical codes, our hobbies, our acceptance of existing conditions, our revolutionary zeal; the class-consciousness of the workers, and that of the capitalists; all these are ultimately founded on non-rational complexes which urge us on to the actions we perform.

Each one of us is governed by a number of such complexes, and we can all, by honest *introspection* (self-examination), find ourselves guilty of rationalisation in most of our doings. Very few of our beliefs, even our "scientific" beliefs, are based on impartial reasoning. Let the reader test it for himself.

This discovery will not disturb the Marxian. The basis of Marx's interpretation of history and economics, and of his forecast of economic evolution, may be stated in terms of the

biological fact that, in the case both of individuals and of societies, *conduct, ideals, aspirations, and institutions depend upon environmental influences and upon the inborn mechanisms by which men are forced to react to those influences in a particular way.*

## CHAPTER II

### THE INDIVIDUAL AT WORK

#### § 3

The living organism differs from dead matter by its method of reacting to its environment. It we watch a man at work, a cat hunting, a snail feeding, or a plant growing, we see each striving to attain a purpose, against a resistance offered by the environment. The purpose is not consciously realised in the lower types, and need not be consciously realised in man. *This striving is called conation.* The consciousness of it, in our own minds, we call *desire*.

The exact nature of conation is as yet unexplained in terms of chemistry and physics, but we have no reason to doubt that it will some day be brought into line with the known laws of matter and energy. This property of living matter has received various names. Some writers regard it as a physical phenomenon; then the term conation is the most appropriate one. Others, including those who adopt a spiritualistic standpoint, call it "desire" or "will." Some writers suggest that it is a special function of the peculiar energy-relations of the carbon atom and of carbon compounds in general; others regard it as involving a special form of energy termed "vital force." Those persons who are believers in the freedom of the will and in the existence of "vital force" tend to treat it as something outside the natural sequence of changes in the relations of matter and energy, as something which cannot be brought into line with natural knowledge. Whatever it is, conation is the ultimate motive force of all living action, including human behaviour.

Conation is not a desire for certain ends, but an impulse to certain kinds of activity.

Children run and shout, not because of any good which they expect to realise, but because of a direct impulse to running and shouting. Dogs bay at the moon, not because they consider it is to their advantage to do so, but because they feel an impulse to bark. It is not any purpose, but merely an impulse that prompts such action as eating, drinking, love-

## THE INDIVIDUAL AT WORK

7

making, quarrelling, boasting.—(Bertrand Russell, *Principles of Social Reconstruction*, pp. 13-4).

Conation must therefore be distinguished from the conscious and purposive pursuit of definitely foreseen happiness (*hedonism*), which some of the older psychologists regarded as the motive of action. The hedonist theory is the basis of the utilitarian theories of economics and ethics. It is contrary to the facts of every-day experience. Man is not a calculating machine.

A living body acts only if it has a *stimulus*. Psychology regards our mental life as a series of reactions to stimuli. A stimulus is any process inside or outside a person which disturbs the organism and "stimulates" to bodily and mental activity.

For instance, we feel the desire to eat. This is a mental process, a state of mind. What is the stimulus? The stimulus is the vigorous rhythmic contraction of the walls of our empty stomach and the desire to eat is the answer or reaction to this stimulus. Or, we have done a day's hard work, say in a factory. Then our muscles contain quantities of lactic acid. This lactic acid in our muscles is the stimulus for a series of reflexes which are concerned with going to sleep or to rest.

The sight of an audience may be a stimulus to produce a "dry mouth" in an inexperienced speaker. The sight of the STOP signal on the road is the stimulus to stop the car. The sight of a person may be the stimulus for love or anger. The sight of the Union Jack or the sound of the "International" in the street acts often as the stimulus for quite a number of bodily and mental reactions.

A stimulus sets in motion a chain of activities. This chain of activities ends if the stimulus is removed and does not operate any more. If our reaction to hunger is eating, eating fills the stomach, stops the vigorous contraction of the walls of the stomach, and thus removes the stimulus "hunger."

If we can remove a stimulus and at the same time survive and preserve our integrity, we are *adapted* to the stimulus. Adaptation, or the removal of stimuli, is the great goal of our minds. If we cannot remove the stimulus, we are unadapted and unhappy. So is the speaker who cannot remove from his mind the picture of the audience by concentrating his attention upon the subject-matter of his speech.

## § 4

Mental processes are not confined to human beings. In fact, wherever living beings adapt themselves, we find mental activities similar to those we observe in human beings. Life and mind are inseparable. There is no life without mind, and there is no mind without a living body. The mind is the most powerful weapon which living beings have got in their struggle for adaptation.

Many persons cannot imagine that a flea can have a mind. It is therefore quite useful to study the most simple animals which consist of one cell only and see whether they have got a mind, *i.e.*, whether mental processes can be observed in them. If so, all the other animals must—by implication—have one too.

Now it is quite obvious that, in order to live, these simple animals must respond to stimuli, and they discriminate between different stimuli. To changes in the environment (movement of water, presence of an enemy) they react through movements, *i.e.*, through changes in place or in shape. They withdraw themselves from most acids. Salts may increase the speed of their movement. They move towards oxygen bubbles in water. Light attracts many of them, while repelling other species. They further distinguish edible and inedible substances. In addition, food-urge and sex-urge operate already in these tiny animals.

What is more startling is that closer observation has disclosed that the actions of unicellular animals show the influence of former individual experience; in other words, that they can *learn*. Experience induces them to modify their behaviour. This can be illustrated by the study of a tiny unicellular animal called *Paramecium* by biologists (see Fig. 1). These are slipper-shaped animals, 1/125th of an inch long. They have round their bodies small "cilia"—independently mobile hairlike protrusions. The whiplike movements of these cilia propel the creature along and sweep particles of food into its mouth.

Jennings drew out a glass tube until it was so fine that not more than one *Paramecium* could get through it. This tube

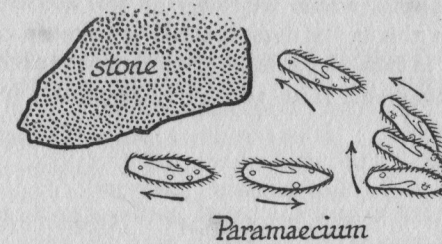


Fig. 1—Negative Re-action of *Paramecium*.

was filled with water up to a certain point and a single *Paramecium* was allowed to swim up the tube until the surface film was reached. The film acted as a mechanical stimulus. The animal darted backwards, rolled over towards its back side, and swam forward again. Since the tube was so narrow, this method which ordinarily, as illustrated in the figure, succeeds in avoiding obstacles, did not help. The animal again touched the surface film. *Paramecium* repeatedly went through the same performance. At last it tried something new, bent its body double, and in this way turned itself around completely. The number of unsuccessful attempts at turning round diminished as time went on. After much "experience," it doubled over almost immediately after striking the surface film. Surely this indicates the existence of an ability to learn.

Readers may think that this is an isolated instance. We therefore give another example, this time from the modified behaviour of *Stentor*, another microscopic creature (see Fig. 2). *Stentor* is fixed at its lower end to a substratum. It gets its food by creating currents in the water around it with the help of its cilia. Numerous carmine particles, which cannot serve as food to *Stentor*, are introduced into the water. The following series of reactions follow: (1) *Stentor* for a short time sweeps the particles into its mouth; (2) It bends to one side, and repeats this movement several times at short intervals; (3) It reverses the action of the cilia about the mouth. The particles, instead of being ingested, are driven away. This reversal is repeated two or three times. (4) It contracts its whole body. (5) It contracts its body violently and swims

away. McDougall, whom we follow in this account, sums up by saying that this is "at least a striking instance of variation of movement in face of constant stimulation; and each of the successive movements is an adaptative reaction" (page 66).

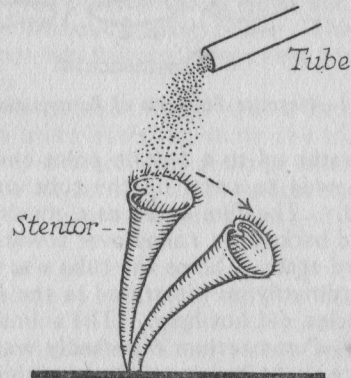


Fig. 2—Stentor Avoiding Carmine Particles.

In this way, during the last thirty years, biologists have found in these animals numerous kinds of behaviour which we can describe as "mental."

All our mental life, up to the highest spheres of conscious thought, can be understood as an adaptation to stimuli. We either adapt ourselves to our environment, or we adapt our environment to ourselves. We find ourselves thrown into a hostile world. Stimuli hit us from all angles. Changes in our body and in our social environment disturb the repose of our minds and compel us to feel, or think, or want, or act. The human mind is a product of both nature and society. Like our bodies it is the complicated descendant of our unicellular ancestors.

## § 5

The outlook on life which modern civilisation inherits from medieval theology and Hebrew tradition, sometimes leads to the statement that "man is meant (by God) to do so and so"; or to the question, "What are we here for?" Such views are termed "teleological."

If, instead of asking what is the purpose of life, we ask *what is the end to which all living organisms can be seen to be striving*, the answer is "greater control of the environment." The living organism, be it plant or insect, fish or man, is ever striving to attain a state of rest and security in an environment that is ceaselessly changing. Each change in the environment has to be met by active striving: the success of that striving, and the temporary conquest which it secures, is life; failure is death. Man, by the use of tools, has enormously increased his efficiency in conquering his environment. He conquers cold by clothing, housing, and fire; he conquers indigestible food, which he could not otherwise eat, by cooking; he turns to his use the winds and the rivers, and the chemical energy locked up in coal and oil; he accumulates knowledge of the nature and causes of the changes which take place in his environment, and this enables him to prepare for these changes. His conation, which is the essence of his life, urges him to resist and conquer the changes in the environment, to subdue it for the benefit of himself, his fellows, and posterity. For Marxians, the "purpose" of life is to fulfil the destiny to which conation urges man, the ever-increasing control of his environment.

## § 6

This urge of life, conation, causes man to perform those actions which make his history. Man, like all animals, seeks adaptation and security. When his security or sense of security is upset, he tries to restore it. Every change which disturbs him is a stimulus to action. Whether the ensuing action does or does not tend to remove the stimulus, depends on circumstances, some hereditary, some environmental. As man's economic environment becomes more

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Conception  
of History**

complex, it depends more and more on knowledge. The man with knowledge, seeing his allotment suffering from drought, and his food supply threatened, gives vent to his conation by watering the ground, and loosening the surface soil to delay evaporation; the savage without such knowledge will attribute the drought to a supernatural being, and his conation may take the useless form of prayer, incantation and sacrifice. Many of us are still a good deal like the savage.

Desire may be regarded as the mental state that accompanies this temporary stimulation of the body, a state that gives place to satisfaction when, through appropriate action, the stimulus is removed. Inasmuch as human actions arise largely from human dissatisfaction, human effort will (other things being equal) be greatest when human need is greatest.

The majority of men do not try to improve their economic environment so long as it is comfortable. Those who, while apparently in comfortable positions, do strive for a better social order are generally impelled by a sense of personal insecurity or weakness which is often unconscious, arising perhaps from some unacknowledged defect, such as physical infirmity (the *inferiority complex*). Hence the idea of revolutionary change does not appeal to comfortable, petty-bourgeois workmen. When unemployment and actual starvation descend upon them their conation is aroused. *It is for the class-conscious minority then to direct this urge into useful channels, so that it shall not waste itself in futile directions.* Herein we discern some of the most important psychological implications of the materialist conception of history.

Progress must not be looked upon as something immanent in man. What is immanent in man is rather a tremendous mental laziness which confronts all novelty with hostility. In order to conquer this inherent laziness, something from without must enter into him which shall draw him forcibly out of his customary existence, and this something is nothing supernatural but quite palpable—it is nothing else but a forced or voluntary change of environment.—(Muller-Lyer, *History of Social Development*, p. 308).

### CHAPTER III

#### THE BODY AS THE BASIS OF THE MIND

##### § 7

As in history, so in psychology, we adopt a materialist standpoint. For the purposes of psychology we may define materialism in the present-day sense as the **Materialism** view that all mental processes are dependent upon and connected with physical processes in our body.

To the Marxian, materialism is not an end, an ultimate truth, but a tactic, a method of thinking about and of investigating the events of human behaviour; a method which treats them as a necessary outcome of the chain of physical causation which we call "nature."

In animist and allied schools of thought, consciousness is regarded as something superior to and independent of changes in nerve tissue. By (philosophical) idealists, material phenomena are regarded as existing only in consciousness.

*Animism*, with its corollary that consciousness can be separated from matter and exist independently of matter, is favoured by those who draw satisfaction from the belief that there is an immortal soul which survives after death, and a supernatural being, with faculties resembling man's, who can be worshipped and propitiated.

##### § 8

The close connection of mind with body can be seen at a glance if we look at the action of *drugs* on our behaviour.

The eccentricities of behaviour induced by alcohol are familiar to all; chloroform and ether produce complete unconsciousness; curare causes paralysis of the motor (outgoing) impulses, while consciousness of receptor (incoming) impulses is unaffected; certain drugs promote sleep, others accelerate

or retard the heart, others excite the sexual instincts, others promote or inhibit the action of the digestive organs; while the toxin of tetanus and overdoses of strychnine reverse the reflexes, so that an impulse to flex a limb produces extension, and the more one tries to open one's mouth the more complete is the lockjaw. Similarly, the poisons produced, or other chemical or physical changes which take place in the body, in certain diseases, act upon the nervous system and entirely change the "character" and behaviour: thus consumption may cause an abnormal optimism or cheerfulness; diabetes, a pessimistic or cantankerous disposition; dyspepsia, profound depression; and the early stages of general paralysis, delusions of greatness, wealth and power.

## § 9

Emotions are accompanied by changes in our body. If we are angry, for instance, the liver liberates an excess of sugar into the blood-stream; the flow of the digestive juices is stopped: the blood contains more adrenalin than usual. The injection of adrenalin into the blood produces the symptoms of fear and anger.

Mander draws the practical conclusions when he says:—

"In a state of anger, the flow of the gastric juices is stopped. So when we are angry it is unwise to take a meal; if we do, we shall probably suffer from indigestion. Once our bodies are in this state of anger the organic condition does not subside until the excess energy has been discharged and the excess sugar used up. Of course, the best plan is to go out for a sharp walk, or to do some hard digging in the garden, and use it up that way. Otherwise we shall go about in this condition for perhaps several hours, and we may be tempted to work off our anger on the wrong person in order to relieve ourselves" (pp. 28-29).

Our body is involved in our emotions. Our body "trembles with fear" or with rage. We "choke with anger." Grief can affect the tear-gland, and cause weeping. Or it can lead to a depression of the corners of the mouth. Usually our hands and faces express our emotions most vividly and it is a great art, to be learned slowly, to conceal one's emotions, i.e., to repress partly the bodily processes which accompany emotion. On the other hand, we can read the emotions from

other persons' faces. Charles Darwin has made a classical study of the "Expression of Emotions in Man and Animals." The student will read this book with interest.

In states of emotion, further, the resistance of the skin to electrical currents is changed. A delicate galvanometer will therefore register by deflection of the needle the changes in our emotional responses. Emotions are usually connected with some "conation," with some striving or impulse to act. The deflection of the galvanometer is proportional to the degree of effort the emotion arouses in us. It is greatest when we feel pain, tension, shock, fear and excitement. In Fig. 3 we show how a galvanometer recorded emotional changes during an air-raid. This instrument can be used to track down lies in criminals. In many persons, lying is connected with some emotion or effort, and is therefore betrayed by a deflection of the needle. But, of course, there are effortless liars and with them the method breaks down. Fleet Street has, therefore, spent no sleepless nights yet about the galvanometer.

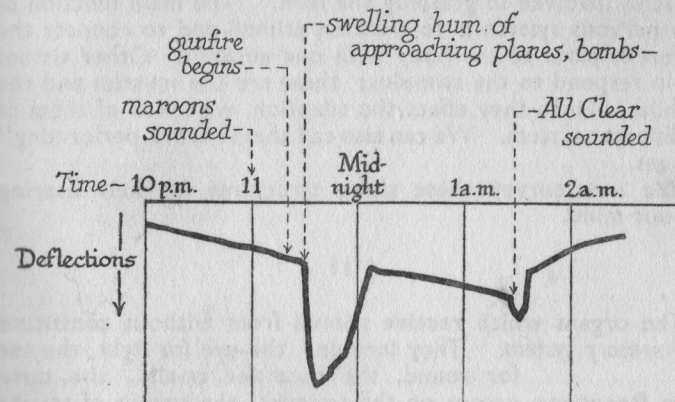


Fig. 3—Emotional changes during the air raid of Whitsunday, 19th June, 1918.

In states of emotion, also, our breathing changes. An apparatus can record the variations in the depth and speed of breathing, and the curves recorded vary with varying states of emotion.

## § 10

If we now proceed to a more thorough investigation of the physical basis of the mind, we can classify the body into two systems. Behaviour is, as we saw, adaptation to a stimulus. Adaptation, therefore, will involve three stages:—

**The Three Systems**

- (1) The reception of stimulus;
- (2) The transmission of the stimulus through the body;
- (3) The reaction to the stimulus.

Our body is made up of tissues. Some of the tissues specialise in receiving stimuli. We call them sense-organs. Others specialise in transmitting stimuli; they constitute what is called the nervous system. If we see a fork we want to use, the visual stimulus must be transmitted from the eye to the brain and from there to the muscles of the arm and to the other muscles involved in grasping the fork. The main function of the nervous system is to transmit stimuli and to connect the different parts of the body with one another. Other tissues again respond to the stimulus; these are the muscles and the glands. Since they effect the adaptation, we speak of them as an Effector system. We can also call them "work-performing" tissues.

We now survey these three structures in their bearing on our mind.

## § 11

The organs which receive stimuli from without constitute the *sensory system*. They include: the eye for light, the ear for sound, the nose for smell; the taste

**The Receptor System** organs on the tongue; the organs of touch; and the sense organs in the skin that detect heat, cold, and pain. In addition, there are

sense organs in our muscles, tendons, and joints, which serve to tell us what position our body is in. There are yet others in the viscera (stomach, intestine, bladder, etc.) which tell us when we have eaten something that we cannot digest, warn

us when we need to relieve nature, etc. The nervous system transmits the excitations, aroused by stimulation of the sense organs, along nerves to the spinal cord and brain, whence they are transmitted by other nerves to the various muscles, viscera, etc., which perform the appropriate responses.



## CHAPTER IV

### THE EFFECTOR SYSTEM

#### § 12

The main effectors are the *muscles* and the *glands*. There are two kinds of muscles, the striped and the smooth muscles.

**The Muscles** of the "hollow" viscera of our body—such as the stomach and intestines, the lungs, the arteries, the veins, etc. These organs are called "hollow" because they are always entirely or in part filled with foreign substances, like food, blood, air, etc. Smooth muscles, for instance, move the food along the alimentary canal. "In general, the smooth type of muscular tissue is to be found intimately involved in the maintenance—and in the disturbances—of vital processes of the more vegetative sort, e.g., alimentation, excretion, circulation" (Dashiell, p. 64).

The smooth muscles are not only important as work-performing organs. They are themselves a frequent source of stimuli for states and emotions. If the stomach is too full or too empty, the mental outlook is affected.

The *striped* (or striated) muscles are those organs which effect changes of position of all bodily parts and organs. Each of these muscles is composed of thread-like fibres, 3 to 4 cm.\* in length and 0.1 to 0.01 mm.\* in thickness. These fibres contract and expand, and thus move the parts of the body with the help of the bones. Most muscular action involves all the muscles of the body. The state in which the muscles are is of considerable importance for our well-being. Well-nourished and strong muscles keep us young and fresh.

Repeated stimulation of a muscle is followed by less and less contraction. Carbon dioxide, lactic acid, and other waste-products are formed and prevent the muscle from doing

\* Abbreviation for centimetre and millimetre respectively. The cm. is 2.5th of an inch; the millimetre, 1-25th of an inch. All students of science should familiarise themselves with the metric system of weights and measures.

### THE EFFECTOR SYSTEM

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further work. In the course of time, the blood-stream washes away the waste-products and the muscle can work again.

#### § 13

Glands are organs which are specialised to secrete or excrete various substances. We must distinguish between two kinds of glands, the ducted glands and the ductless glands.

**The Glands** ductless glands. The salivary glands and the tear glands are examples of ducted glands. They secrete saliva and tears through ducts.

Far more important for psychology are the ductless glands which have no special outlet. They secrete "hormones" (exciters) which are carried through the blood and lymph stream to all parts and tissues of the body. These hormones exercise a profound influence on our mental life.

Figure 4 shows the location of the principal ductless glands. Of these, the thyroid, adrenal, sex and thymus glands have the greatest psychological importance.

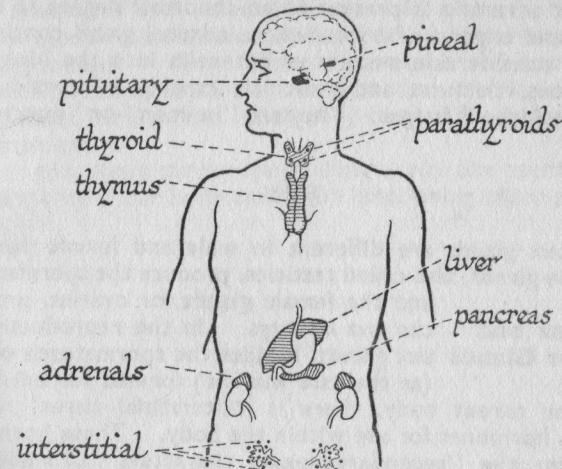


Fig. 4—The Principal Ductless Glands (after Dashiell).

## § 14

The hormones produced by the thyroid gland influence growth. Imperfect development of the thyroid gland, with consequent lack of these hormones, results

**The Thyroid and Adrenal Glands** in a dwarfish condition accompanied by partial idiocy (*cretinism*). This can be prevented in such cases by administering an extract of the thyroid glands of sheep, which provides the missing hormone. An overgrown thyroid is accompanied by a nervous disorder of an opposite kind, involving excitability, often culminating in mania.

This gland further governs the speed of our reactions. The thyroid hormones accelerate the mental and bodily processes. If a person secretes much thyroid hormone, he will be vivacious, restless, excitable and sensitive; if little only, he will be dull, stable and comfortable, crude, and clumsy, and have a tendency to fatness and scanty hair.

The adrenal gland is situated just above the kidney and secretes adrenalin, a chemical substance which can now be produced synthetically in the laboratory. In § 9 we already saw that adrenalin is present to an abnormal degree in states of fear and anger. Persons whose adrenal gland continually pours a considerable amount of adrenalin into the blood are pugnacious, thick-set and muscular, capable of considerable exertion without fatigue. They are "he-men" or "masculine" women.

## § 15

The sex glands are different in male and female persons. The male glands, also called testicles, produce the spermatozoa, and the female glands, or ovaries, produce the ova or eggs.

**The Sex and Thymus Glands** In the reproductive or sex glands, besides the spermatozoa or ova (as the case may be) formed for extrusion from the parent body, there is "interstitial tissue" which secretes hormones for use within the body. These hormones determine the "secondary sexual characters" of male and female persons. That is why men have more angular lines

of body and limbs, deeper voice, beard, etc. Women have more curved lines, a higher-pitched voice, no beard, etc. Also the different development of the mammary glands is a secondary sexual character.

If interstitial tissue of male rats is transplanted into female rats (whose ovaries have been removed), the female rats in their physique and behaviour become like male rats. Similarly, male rats can be induced to look and act like female rats.

It is very difficult to determine the *mental* secondary sexual characters in human beings. It has been said, for instance, that women are usually more passive than men. Granting the fact, we cannot jump to the conclusion that this greater "passivity" is due to the female sex hormones. It may also be the result of training and example. Time alone can show, in a new social environment, whether the passivity is inborn or acquired.

The drive towards sexual activity is caused by the presence of the sex hormones in the blood stream. These hormones are the main stimulus for sexual impulses, feelings, and actions.

The *thymus gland* acts as a brake upon the development of the sex glands. It secretes hormones which counteract the effects of the sex hormones. In most cases this gland is fully developed only in childhood. At puberty it usually degenerates and is replaced by fat. In some persons it does not degenerate. They remain undersexed and retain their childish forms and features. If in children the thymus gland degenerates earlier than usual, they show a precocious sexual development.

Even this short survey shows how much our mental life is at the mercy of our body and of the functioning of the glands.

## CHAPTER V

## THE NERVOUS SYSTEM

## § 16

The nervous system can bring any part of the body into relation with any other. It

**Survey** may be compared to a telephone system, the nerves being the wires, and the spinal cord and brain the exchange; with the difference that messages from a part of the body to the "exchange," and messages from the "exchange" to that part of the body, generally travel by separate "wires." But whereas

in the telephone system a subscriber can speak to only one person at a time, in the nervous system an incoming nerve fibre can be connected up with a number of outgoing fibres, so that a stimulus to one sense organ may throw a number of work-performing organs into action at the same time. Conversely, a number of impulses from different incoming fibres may combine to excite one outgoing impulse (as if a number of subscribers could speak by telephone to the same person at once). Unlike the telephone exchange, which merely

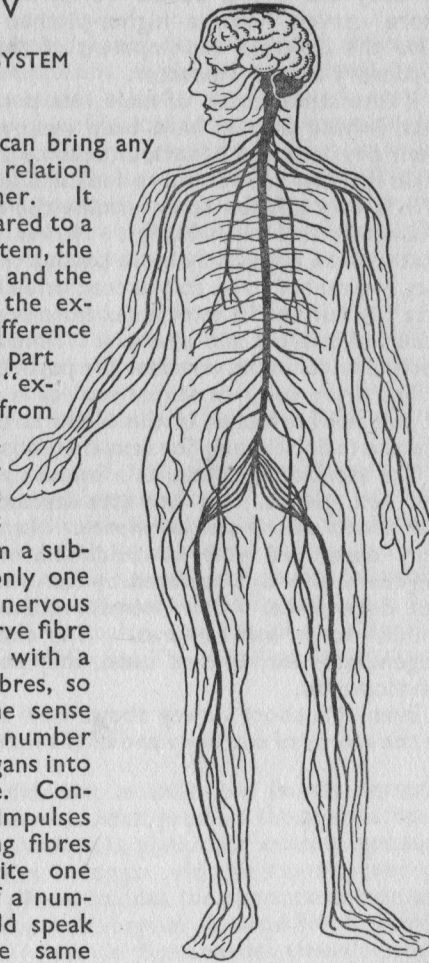


Fig. 5—The Human Nervous System.

transmits messages as directed by the callers, the nervous system includes a brain—which might be compared to a combined intelligence department and censor's office attached to the telephone exchange. The brain reviews the messages in transit, edits and censors them, and sees that they are passed on to those individuals who, experience has shown, will act most appropriately under the circumstances which the messages report.

In a fish, a frog, a bird, a dog, or a man the nervous system is composed of the following parts:—

- (1) A central axis, the *spinal cord*, which runs along the middle line of the back, protected by the bony arches of the spinal column.
- (2) An enlarged and specialised anterior portion of this central axis, the *brain*, which is enclosed in the skull.
- (3) A number of *incoming nerve fibres* which convey impulses from the sense organs and other parts of the body to spinal cord and brain.
- (4) A number of *outgoing nerve fibres* which convey impulses from spinal cord and brain to the muscles and other work-performing (effector) organs.
- (5) A semi-detached system of outgoing nerves called the *autonomic nervous system*.

## § 17

Like the rest of man's body, and of all animal bodies, the nervous system is built up of units called *cells*. The special name given to a nerve cell, together with the various extensions or "processes" now to be described, is *neuron* or *neurone* (Fig. 6).

A neurone consists of (1) a *cell body* with a *nucleus*; (2) a nerve fibre called the *axis cylinder process*, which conveys impulses from the cell body outwards; and (3) a number of branched tree-like processes called *dendrites*, which receive impulses from without and transmit them onwards through nerve fibres. The cell body, ranging from  $\frac{4}{1000}$  mm. to  $\frac{2}{10}$  mm. in diameter, nourishes the fibres. The dendrites may be given off directly from the cell body as in the diagram

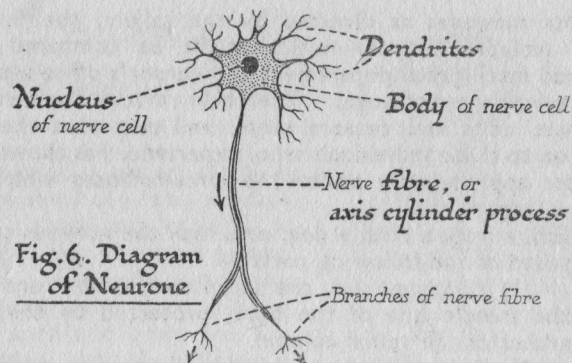


Fig. 6. Diagram of Neurone

or they may be connected with the cell body by a nerve fibre of greater or less length.

The nerves shown in Fig. 6 are bundles of such nerve fibres, some incoming, some outgoing. The spinal cord and brain are composed partly of the cell bodies of neurones, partly of tracts of nerve fibres connecting the various groups of nerve cells with one another—all held in a supporting framework of "connective tissue."

The nervous impulse or "message" can be transmitted one way only; in through the dendrites (which receive it from a sense organ or another neurone); and out through the nerve fibre, which passes it on to the dendrites of another neurone, or to a work-performing organ (muscle, gland, etc.). The arrows in the figure show the direction in which the nervous impulses travel along these "one-way streets."

A stimulus travels through a nerve at a speed of 100-125 metres per second. While it travels, electrical changes take place in the nerve, oxygen is consumed and carbon dioxide and heat are given off. Contrary to common opinion, nerves can scarcely under any circumstances grow tired. People speak of "nervous exhaustion" when they mean "mental fatigue," i.e., worry and anxiety. The mind of nervously exhausted persons is tired, but their nerves are not. The energy of a nerve is practically inexhaustible, since it restores its freshness continually from the fatty sheath which surrounds it.

## §. 18

The spinal cord is a column of nervous substance, continuous with the brain, and passing from the base of the skull to the lower end of the back (Fig. 5). There is a small canal running along the centre of it. **The Spinal Cord** (Fig. 7, central canal). When cut across it is seen to consist of a central mass of *grey matter* (composed of nerve cells) shaped like the letter H. In its continuity it is like an H-girder running through the cord from end to end. The remainder of the spinal cord consists of *white matter* (composed of nerve fibres). The fibres serve to connect one part of the cord with another, and with the brain.

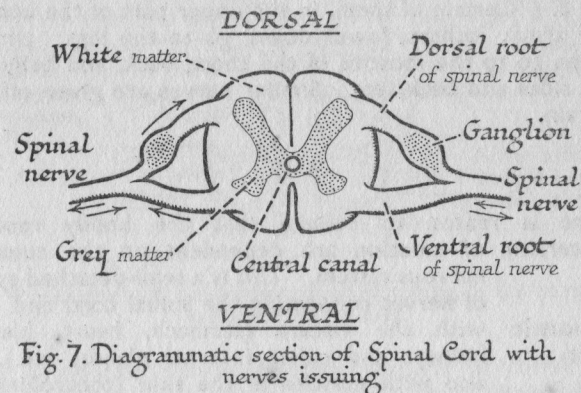


Fig. 7. Diagrammatic section of Spinal Cord with nerves issuing

From each segment, that is to say between each two vertebrae (the individual bones of the "backbone"), nerves (called the spinal nerves) are given off. These nerves are made up of (1) incoming fibres, and (2) outgoing fibres. The two kinds of fibres, which occur together in the nerves, separate before they enter or leave the spinal cord; the incoming fibres, those carrying messages from different parts of the body to the spinal cord, enter the cord by a root on the dorsal (next the back) side (Fig. 7, dorsal root); the outgoing fibres, those carrying messages from the spinal cord to the muscles, glands,

and other work-performing organs in different parts of the body, leave the cord by a root on the ventral (next the belly) side (Fig. 7, ventral root).

The arrows in Fig. 7 show the directions in which the various impulses travel. The outgoing nerves have their cell bodies in the grey matter of the spinal cord, and the fibre that leaves the cord ends in branches in the muscles or other organs. The incoming nerves come from sense organs, in the skin or elsewhere, and their cell bodies lie in a little swelling called a *ganglion* in the dorsal root of the spinal nerve (Fig. 7, ganglion). A fibre runs from the cell body in the ganglion into the spinal cord, where it breaks up into branches that enter into relations with other nerve cells.

These spinal nerves are seen branching all over the body in Fig. 8. Certain of them, in the upper part of the body, go to the arms; others, lower down, go to the legs; those in between go to the muscles of the chest, back, and belly, skin of the sides and back, etc. Similar nerves are given off from the brain.

## § 19

There is reason to believe that the bodily reactions characteristic of emotion are dependent on the *autonomic nervous system*. This is a semi-detached system of nerves connecting the spinal cord and brain with the viscera (stomach, heart, bladder, kidneys and other internal glands, etc.), and also with muscles in the skin (controlling the little blood-vessels concerned in blushing or going pale), with the sweat glands, and with the muscles controlling the movements of the hairs (e.g., in great fright).

The cell bodies of the neurones of this system are outside the spinal cord. They form a paired chain of little ganglia, lying along the ventral side of the spine; from these ganglia nerve fibres pass to the various organs mentioned above. Certain nerve cells in the spinal cord send bundles of nerve fibres to the autonomic ganglia, where they form synapses or joints with the nerve cells. The ganglia are also connected with each other by bundles of nerve fibres.

The operations which this system regulates are entirely independent of the "will," i.e., independent of conscious voluntary control. These operations are the bedrock functions necessary for the carrying on of life, such as the digestion and absorption of food, the circulation of blood, the elimination of waste, etc. They are too important to be subject to "the caprice of an ignorant will." They are automatic, or, as we say in speaking of machinery, "fool-proof."

The relation of the autonomic nervous system to the spinal nerves is shown diagrammatically in Fig. 8.

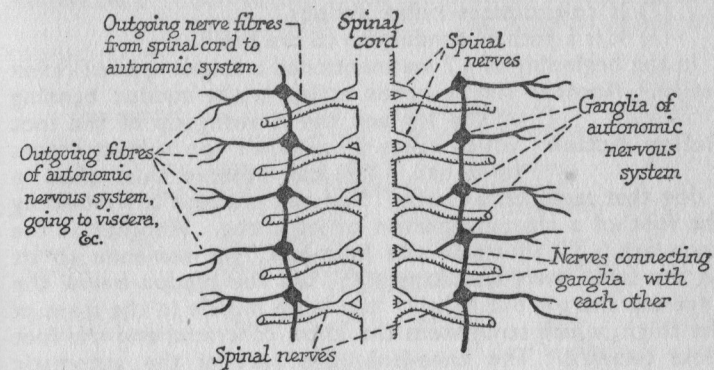


Fig. 8 - Diagram of autonomic nervous system & its connexion with the spinal cord

The autonomic nervous system consists of three parts, anterior, middle, and posterior—or in man, upper, middle and lower. The first of these, situated in the head, is especially concerned with the reflexes of the act of feeding and with the regulation of the heart's beat. The middle section, usually spoken of as the *sympathetic*, is largely concerned in the emotions of fear and of anger. Such an emotion as fear is accompanied by a nervous discharge from the central nervous system through the autonomic nervous system, a discharge which rouses the viscera and other organs to activity. The lowest or hindmost section contains important parts of the nervous mechanisms which control the passing of urine and faeces; also of the mechanism controlling the sexual act.

## CHAPTER VI

### REFLEX ACTION

#### § 20

The spinal cord has three functions:—

- (1) It is a centre for reflex actions (see end of § 10).
- (2) It co-ordinates reflex actions.
- (3) It is a path of conduction to the brain.

In the beginning of § 2 we mentioned a simple type of reflex action. Another simple reflex action is the sudden bending of the leg and the drawing up of the foot which takes place when the subject treads on a nail. You can observe this reflex in a dog that steps on a thorn. You can produce it by tickling the foot of a sleeping person or of a dog. Another is the knee-jerk. To illustrate the knee-jerk, get someone to sit on the table, with feet dangling; tap the tendon below the knee-cap sharply but lightly; the large muscle in the front of the thigh, which straightens the knee, contracts, and the foot kicks forward. The knee-jerk is a part of the automatic mechanism that enables us to stand upright, and to walk steadily.

Other examples are: the narrowing of the pupil of the eye when a strong light is turned on it (this serves to protect the delicate mechanism of the eye from too much light); sneezing when an irritating substance enters the nose; coughing when such a substance enters, or accumulates in, the air tubes of the lungs.

In each of the above actions we distinguish:

- (1) A *stimulus*: that is to say some action on the individual from without (e.g., pricking the foot); this stimulus is received by a sense organ.
- (2) A *nervous impulse*: transmitted by nerve fibres from the sense organ to the central nervous system (spinal cord or brain) and thence by other nerve fibres to the organ which performs the response (e.g., a muscle).

## REFLEX ACTION

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- (3) A *response*: in the case of the injured foot, the contraction of certain muscles in the leg, which withdraw the foot.

#### § 21

A nervous mechanism known as the *reflex arc* constitutes the physical basis of reflex action, each element that we have recognised in the reflex action having its appropriate material substratum. The description of the reflex arc must be studied in connection with Fig. 9. The simplest reflex arc consists of:—

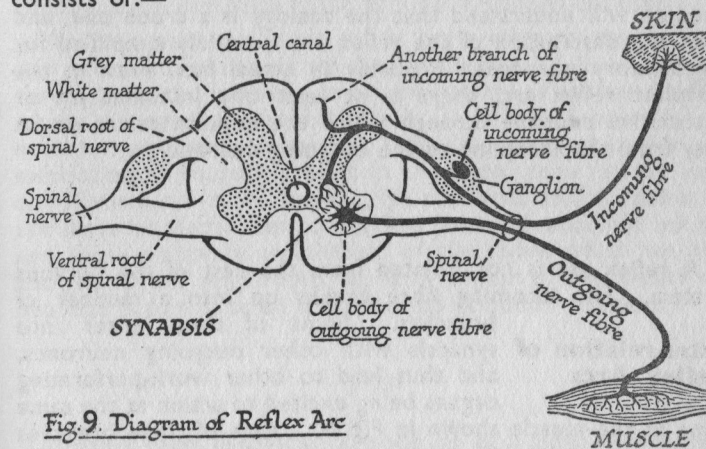


Fig. 9. Diagram of Reflex Arc

- (1) A *sense organ* (in Fig. 9, skin) that receives the stimulus from without.
- (2) An *incoming nerve fibre* transmitting the impulse to the spinal cord (or the brain). This enters the spinal cord by the dorsal root.
- (3) A *synapsis*, where some of the branches into which this incoming nerve fibre breaks up in the spinal cord enter into relationship with the dendrites of a nerve cell in the front part of the grey matter of the spinal cord.

(4) An *outgoing nerve fibre*, the axis cylinder process of the nerve cell mentioned in 3. This leaves the spinal cord by the ventral root. Along it passes the stimulus, transmitted across the synapsis. Through the fibre the stimulus reaches

(5) The muscle, gland, or other *work-performing organ*. Excited to action by the reflected stimulus, this organ now makes the appropriate response.

It will be obvious why this is called a reflex action, and the mechanism a reflex arc. The stimulus is conceived of as being reflected from the spinal cord much as a ball is reflected (rebounds) from a wall, or a ray of light from a mirror. The student will understand that the analogy is a crude one, and that the description of the reflex arc is unduly simplified for explanatory purposes. Probably in actual fact, even in the simplest reflex arc, there is at least one intermediate or associative neurone through which the impulse passes on its way from the incoming to the outgoing neurone.

#### § 22

A reflex arc is not isolated from the rest of the nervous system. The incoming fibre breaks up into a number of branches. Some of these enter into synapsis with other outgoing neurones, and thus lead to other work-performing organs being excited to action at the same time as the muscle shown in Fig. 9. One of these branches is seen to pass into the white matter on the dorsal side of the cord, on its way to a synapsis elsewhere. In bending the leg and drawing up the foot it is necessary, not only that certain muscles should contract, but also that certain others on the opposite side of the limb should relax. Some of the fibres into which the incoming nerve breaks up form synapses with neurones along which impulses pass causing these opposing muscles to relax (inhibition). If this did not happen the foot would not move, the two sets of muscles would be pulling against one another (as in cramp); just as you cannot pull down a flag on a flagstaff until you have loosened the rope

#### Inter-relation of Reflex Arcs

which hoists it. Other branches connect with arcs through which movements of other parts of the body are brought about; or with arcs which, passing through the brain, are concerned in the initiation of actions based on habit or experience, or involving what appear to be deliberate acts. Thus an injury to the foot by a tinctack may lead, not only to the bending of the leg and the withdrawal of the foot, but to movement of the other leg and the body to maintain balance; to a movement of the arm and the hand towards the foot, to pull out the tinctack; to an activation of the mechanism of voice, resulting in a cry; of the mechanism of speech, resulting in an oath, etc. All these may follow the stimulation of one little group of sense organs in the foot.

We have seen that each reflex has a material mechanism, the reflex arc, which, if we draw a diagram of it or make a model, takes the form of a particular pattern of neurones along which the nervous impulse travels. American neurologists have adopted the convenient term *neurone pattern* for an association of neurones, be it in the spinal cord (in the case of reflexes), or in the brain. We can most usefully think of the material mechanisms underlying instincts, acquired habits, and those elaborate associations of the above which we call complexes and sentiments, as being either of the nature of neurone patterns, or of muscular and glandular reactions.

#### § 23

In some cases behaviour is made up of a chain of reflexes, in which each consummated action provides the stimulus for the next. Take, for example, the actions performed by an infant, when placed to its mother's breast. Here:—

#### The Reflex Chain

- (1) Contact of infant's mouth with nipple produces closure of lips and gums around it.
- (2) This produces sucking movements by muscles of mouth.
- (3) Consequent flow of milk into mouth acts as stimulus for swallowing movement in throat.

(4) Passage of milk into gullet stimulates gullet to contract in waves from above downwards, so passing milk to stomach.

(5) Entry of milk into stomach stimulates gland cells to secrete digestive juices, and so on.

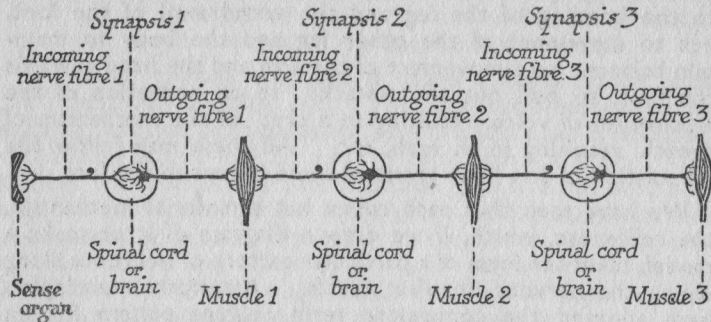


Fig.10-Diagram of Reflex Chain

The mechanism of such a reflex chain is illustrated diagrammatically in Fig. 10. For simplicity in each step only a single incoming and a single outgoing nerve fibre, and a single muscle cell, are shown. Of course, in reality, even in the simplest chain of reflexes, there is a great number of each. Stimulation of a sense organ (on left of figure) by something happening in the world outside the organism sets up impulses which travel along nerve fibres (incoming nerve fibre 1) to the central nervous system (spinal cord or brain), which pass across (synapsis 1) to outgoing nerve fibres (outgoing nerve fibre 1) by which they are conveyed to certain muscles (muscle 1) which they excite to action. When these muscles contract, sense organs in them (and in the joints which they move) send impulses by other incoming nerves (incoming nerve fibre 2) back to the spinal cord or brain, and these impulses pass out by other outgoing nerves (outgoing nerve fibre 2) to a fresh set of muscles (muscle 2) which, excited by these impulses, perform the second step in the chain. In like manner the completion of this action starts a similar set of impulses, through

incoming nerve fibre 3, to the spinal cord, whence they pass by outgoing nerve fibre 3 to muscle 3, which they excite to perform the third step in the chain—and so on. For simplicity the three arcs are shown in the same straight line, and the spinal cord or the brain is indicated by three separate circles. It would be more correct to represent the spinal cord or the brain by one circle, and the three arcs as loops each of which would have its synapsis in that circle.

Later on, through experience (*habit*), groups of reflexes become associated to form complex acquired habits, quite different from their original forms. Take, for instance, the behaviour of a man eating. The fundamental reflexes involved are those we have studied in the infant, with the addition of those by means of which the same infant, when a little older, will seize objects and convey them to its mouth; but in the grown man they are complicated by all sorts of secondary movements, a special way of holding knife and fork, of lifting glass, etc., which have become habits, and which differ for different people according to the environment in which they have been brought up.

In the above case we have a chain of consecutive actions, co-operating to a common purpose. Many of our acquired habits, like dressing and undressing, riding a bicycle, etc., are similar chains of complex groups of reflexes, the order of which has been acquired by practice.

We learn to perform a new feat, such as playing a game or driving a motor, largely by trying different natural reflexes, rejecting those that are unsuitable, and forming well-established habits out of the successful ones. The difference between the bungling beginner and the skilled craftsman depends upon the fact that the former still uses unsuitable reflexes, whereas by long practice the latter has eliminated these and has perfected the *integration of the suitable reflexes*.



## CHAPTER VII

### THE BRAIN

#### § 24

The brain is the great controlling centre of the nervous system. It is the specialised anterior part of the central column of nervous substance, and it passes into the spinal cord through a pear-shaped bulb, the *medulla*. The central canal of the spinal cord is continued forward into the brain, where it widens out to form cavities called *ventricles*. Like the spinal cord the brain is made up of—(1) grey matter, and (2) white matter, connecting the various areas of grey matter with each other, and with the spinal cord.

The structure of the brain is excessively complicated. Here we need give only such a general outline as is necessary for an understanding of the part it plays as the organ controlling intelligent behaviour.

The mammalian brain consists of:—

(1) A *basal brain-stem*, the continuation forward of the spinal cord, certain parts of which are thickened into enormous strands of white matter and bosses of grey matter; this stem gives off nerves to the eyes, nose, and ears, to the skin and muscles of the face, and to other parts.

(2) A pair of hollow lateral outgrowths from the front part of the brain-stem, known as the *cerebral hemispheres*.

(3) An upgrowth on the hinder part of the brain-stem, known as the *cerebellum*.

The other outgrowths of the brain-stem need not be mentioned here. The relations of these parts are shown diagrammatically in Fig. 11.

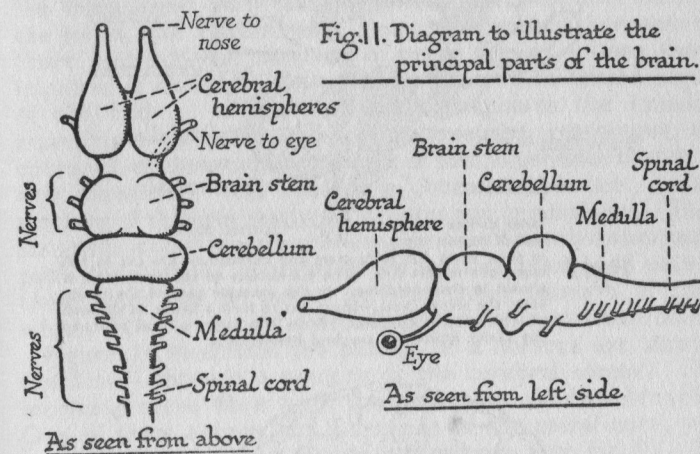
The brain of a lowly vertebrate, such as a fish or a frog, departs but little from this plan. The chief differences are that the anterior end is prolonged into a pair of lobes con-

## THE BRAIN

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cerned with the sense of smell (*olfactory lobes*) which are quite small in man; and that the middle portion of the brain-stem bears two large lobes, called the *optic lobes* (represented in man by four little swellings).

The essential parts of the brain are connected with each other, and with the spinal cord, by numerous tracts of fibres. Each of these parts has a special group of functions to perform. The brain-stem contains numerous groups of nerve cells (*centres*) whose processes form elaborate systems of synapses between incoming and outgoing systems of nerve fibres, thus permitting of highly complicated actions of an unconscious kind.



The cerebral hemispheres consist of an outer layer of grey matter, called the *cortex*, and an inner lining of white matter connecting the various parts of the cortex with each other and with the rest of the brain. (The student should note that whereas in the spinal cord the grey matter forms a column which lies in the middle of the white matter, in the cerebral hemispheres the grey matter is outside the white matter, like the bark of a tree. Hence, the name "cortex").

All the complicated structures of the human brain can be regarded as elaborations of the ground plan shown in Fig. 11.

The points that most concern us, to enable us to deduce the human brain from this figure, are: first, that in *man* the cerebral hemispheres are of enormous size, overlying the whole brain-stem and cerebellum, so that the latter are invisible from above; and secondly, that the brain-stem itself is bent or folded in a peculiar manner (see Fig. 12). Moreover, to increase the area of the cortex (and consequently the capacity

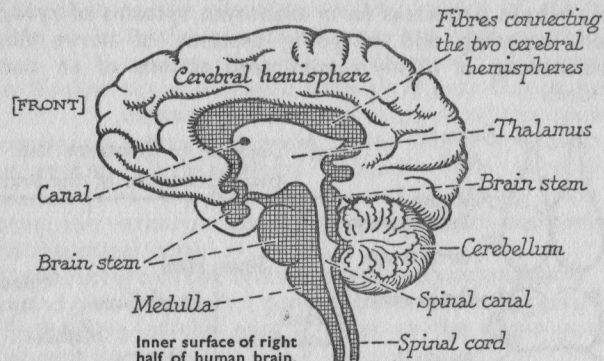


Fig. 12 Inner surface of right half of human brain, as seen when the brain-stem and cerebellum are cut in half along the middle line. The cut surface of the brain-stem is shown in cross-hatching. In the anterior part of the brain-stem the spinal canal widens out to form a cavity, in the wall of which is the thalamus. From this cavity a canal passes to the cavity inside the cerebral hemisphere.

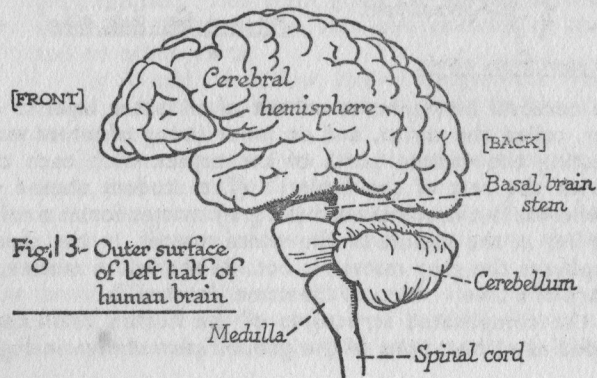


Fig. 13- Outer surface of left half of human brain

for communication between different associations of nerve cells) it is folded into "convolutions" (like a sheet of paper crumpled up, or a walnut kernel). (See Fig. 13).

### § 25

Upon the cerebral hemispheres converge the nerve fibres which convey impressions from the eye, the nose, and the ear; the sense organs by means of which we explore the more distant parts of our environment; as well as the fibres coming (via the spinal cord and the hinder part of the brain-stem) from sense organs in the skin, the muscles, the joints, the viscera, etc. From the cerebral hemispheres there pass out vast numbers of nerve fibres. Along these, impulses of excitation or inhibition proceed to all the organs of the body. In the cerebral hemispheres the impulses travelling over reflex arcs are intercepted, rearranged, encouraged, or diverted, in the light of past experience of associative memory. This itself is a process dependent on the working of the grey matter of the cerebral hemispheres. Their structure is so elaborate that the number of possible alternative paths for nervous impulses is unthinkably great, and each of these paths can be linked up with other patterns of paths which, if thrown into the circuit, can alter the resultant action.

Figure 14 illustrates the passage of a nervous arc through the brain—through a synapsis in the cerebral cortex. The incoming nerve fibre from the skin gives off two branches. One of these enters into a synapsis in the spinal cord, with an outgoing nerve to a muscle. (Compare with Fig. 9). The other branch of the incoming fibre runs up the cord, in the white matter, and forms, in the hinder part of the brain-stem (medulla), a synapsis with another nerve cell (intermediate neurone), which in its turn forms a synapsis with another nerve cell in the front part of the brain-stem (thalamus). From this nerve cell a fibre passes into the cerebral cortex, there to enter into relations with numerous other neurones. One of these is seen, sending an outgoing fibre (outgoing fibre from cortex) down the cord, to form a synapsis with the outgoing fibre to a muscle. Thus we have two arcs: a direct one through the

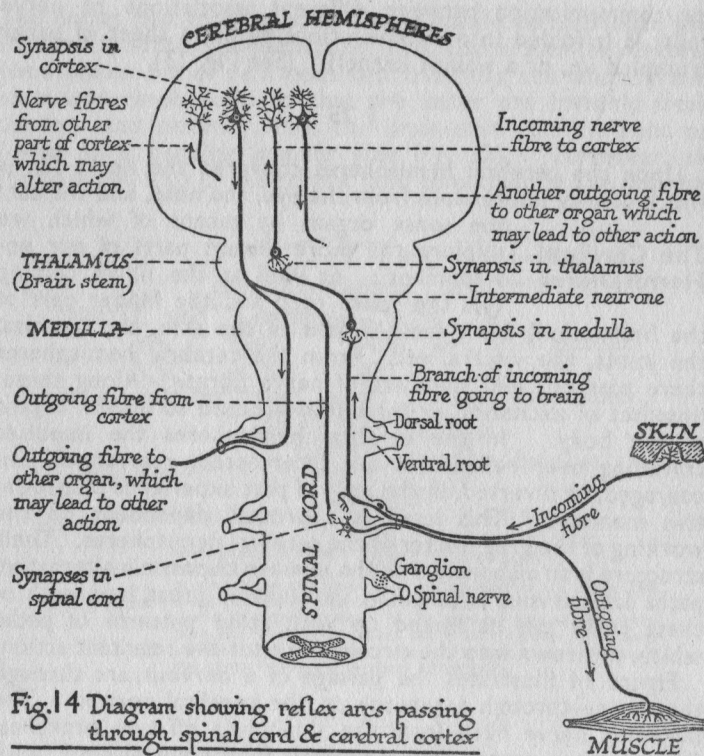


Fig. 14 Diagram showing reflex arcs passing through spinal cord & cerebral cortex

cord; and an indirect one through the brain. (As in the case of Fig. 9, the picture is extremely simplified. At each synapsis other arcs than those figured are connected with the system).

In the cerebral hemisphere the dendrites of the cell body of the outgoing fibre are seen entering into synapsis with nerve fibres from other parts of the cortex. These fibres may link up with groups of nerve fibres concerned with memories of past events, and this may modify the reflex action. Again in the cerebral hemisphere, the branches of the incoming neurone are seen entering into synapsis with another outgoing nerve fibre passing to other organs than those figured; this

may lead to other action. The student should recall the case of the man who performs various complicated actions because he has trodden on a tinctack (§ 22); and should try to picture, in the light of the diagram, the mechanism underlying such actions. The diagram shows that the left cerebral hemisphere controls the muscles of the right side of the body, and conversely.

It will be seen that there is a direct path across the cord; and an indirect path up the cord, through the cerebral cortex, and down the cord to the outgoing nerves. In the purely spinal reflex the former is followed. Where the latter is followed, the cerebral hemispheres can modify action: that is to say, the large variety of alternative paths which the brain contains are as it were brought into competition for the impulse; and the nature of the response is influenced by the qualities impressed upon the cerebral substance by previous activities (memory or experience). This introduces a wide range of control, and provides for great variability of action.

As we ascend in the animal scale we find an increase in the number of alternative nerve paths. The number is enormously greater in man than in the highest apes. The much larger brain of man consists of a mass of such alternative paths.

When the brain is involved in the response, the nature of that response depends upon the varying degrees of resistance to the passage of nervous impulses along different paths. These variations, in turn, mainly depend upon the changes which have been produced in these paths by the passage of previous impulses; in other words by the mechanism of associative memory (habit).

Where numerous alternative paths are possible, some making for action in one direction and some for action in another, there is what we may speak of as a competition between rival arcs for the flow of nervous impulses; and where no one path is much freer than another, and fresh nervous elements keep being linked on, we may have delayed response or hesitation. Deliberation may be regarded as the subjective consciousness of this delay in the flow of nervous impulses. Owing to the competition between different groups of nerve paths the response is delayed. The stimulus

does not lead promptly to action in any direction. When at last action ensues, there is a feeling of satisfaction, which we believe to be the outcome of our having spontaneously "willed" the action.

## § 26

The cerebellum is an organ which, without the intervention of consciousness, controls and co-ordinates the reflex movements and postures of the body.

**The Function of the Brain** The hemispheres contain the mechanism of associative memory which renders possible memory, thought, judgment, reason and the formation of habits. Associative memory is the function by means of which we associate what is happening in the present with something which we have experienced on a previous occasion.

The nervous tissues of the hemispheres further restrain (inhibit) the simpler automatic responses of reflex action. The brain is a storehouse of experience, and this experience modifies response to stimulus. Consider the actions of one who checks the impulse to cough during a lecture. An irritant in the air passages excites a reflex impulse to cough. Memories stored in the brain, memories of annoyance previously caused by coughing on similar occasions, are awakened by the stimulus, and take the form of activity in other nerve tracts in the cerebral hemispheres. The activity in these alternative paths inhibits the working of the cough reflex.

## § 27

The cerebral hemispheres can be removed from an animal by a skilful operation. Such an animal is spoken of as *decerebrated*.

**Effect of Removal of Cerebral Hemispheres** In the frog, in which the cerebral hemispheres, and the capacity for intelligent action, are relatively small, decerebration does not appear, to superficial observation, to make much difference. Most of the normal reflex actions are performed, even such a complex one as stalking and catching flies. It is only where the possi-

bility of a choice between alternatives is present that the difference is obvious. Thus, when a decerebrated frog and a normal frog were put under separate glass jars, each with an equal number of flies, the decerebrated frog caught all the flies before the normal one did, because the latter tried to get out, while the former blindly followed its feeding reflexes.

On the other hand, in birds, dogs, monkeys, etc., the change following on decerebration is profound. They are reduced to a mental level lower than that of a decerebrated frog, because they are more dependent on intelligence (associative memory) and less on machine-like reflexes.

In the decerebrated dog, the complex reactions in which associative memory plays a role are lacking, while the simple reactions that depend solely on inherited conditions remain.

## CHAPTER VIII

### THE CONDITIONED RESPONSE

#### § 28

From the moment of birth, we already exhibit certain reactions (responses) to certain stimuli. If, for instance, you stroke the sole of an infant's foot, the toes will make a closing or gripping movement—the great toe is drawn upwards and the others downwards. This is the famous Babinsky reflex, which originated at a time when our ancestors were habitual tree-climbers. This reflex usually disappears in the first year, but others are retained throughout life. New-born infants reach for objects and grasp a rod. If their movements are hampered, they show rage. When stroked, tickled or patted, or when gently rocked, they gurgle and coo, and at a somewhat later age they smile in response to these stimuli. A bitter taste produces a grimace of disgust. When the cheek is touched near the mouth, the head is turned. These and other innate reactions to stimuli are called unconditioned reactions or responses.

As we grow up, the range of stimuli which mean something to us and the number of reactions which we can perform grows considerably. Man's acquired nature is added to his original nature. The mechanism by which we mainly learn new behaviour to new stimuli is called the conditioned response.

Let us compare an unconditioned and a conditioned fear reaction. Fear is inborn, but originally it operates only over a small range of stimuli. Babies show from the outset a reaction of fear to the following two stimuli:—

(1) Loss of balance or equilibrium, or removal of support, e.g., if a baby is dropped from the hands of one person into the hands of another.

### THE CONDITIONED RESPONSE

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(2) A sudden, loud noise. Even in a new-born child this causes a sudden twitching which in milder cases is confined to the face, and in more extreme cases affects the body and is accompanied by a scream.

Adults are afraid of far more than that. How does the increase in the objects which they fear come about?

The dog without cerebral hemispheres sleeps and wakes. It moves spontaneously—that is, without visible external stimulus. The only abnormal feature in the progressive movements of the dog without cerebral hemispheres was its extreme restlessness. When not asleep, it moved about in the cage unceasingly, and this perhaps accounts for the fact that such animals show a tendency to lose flesh. The postures peculiar to dogs in urinating and defaecation were still assumed by these dogs. The reactions to sensory stimuli were normal in so far as no associative memory was necessary. Meat and milk were devoured greedily, but if made bitter with quinine they were rejected. The dog growled and snapped if its paw was pinched. If its foot was placed in cold water it was removed at once. If one paw was injured the dog was still able to go on three legs. If it was asleep it could be waked by blowing a horn in the next room. If in a dark room, it closed its eyes when a strong light was suddenly allowed to strike it. It seemed more wide-awake and restless when it was hungry and more quiet after it had been fed. . . . To make the dog eat, it was only necessary to hold the plate up to its nose, so that the nose came in contact with the meat. . . . The dog could still bark and howl. But everything requiring associative memory was gone. The dog was not able to seek its food. It recognised neither its master nor its playmates. It could hear, but could not discriminate between scolding and petting. It was impossible for it to get itself out of any uncomfortable situation. The period of heat was no longer noticeable.—(Loeb, *Comparative Physiology of the Brain and Psychology*, pp. 246-8).

Children born without cerebral hemispheres are on the same mental level as the decerebrated dog, or even lower, and they die soon.

When the cerebellum is removed (the cerebral hemispheres being left) the animal's condition is very different. It retains its intelligence and memory, but cannot co-ordinate its movements. It cannot walk straight, makes "bad shots" when trying to seize its food, and so forth. In time these symptoms may disappear, as though the cerebral hemispheres had learned to correct and compensate the deficiency.

Let us show, say a cat, to an infant. The infant plays with the cat, and finds the occupation pleasing. While it is playing, a psychologist, behind the back of the child, strikes a heavy

steel bar on an iron plate. A sudden loud noise—creating unconditioned fear—is produced. The American, Watson, did this repeatedly with an eleven-months-old child. The result was that the child became afraid of cats. A new stimulus (cat) for fear has been created. We speak here of conditioned fear. We can represent this process in the form of a diagram:

Stimulus 1; cat.	Reaction 1; playing.
Linked up with	
Stimulus 2;	(Unconditioned) reaction 2;
sudden loud noise.	fear.

After some repetition, stimulus 1 can take the place of stimulus 2, and we get:

Stimulus 1; cat.	(Conditioned) reaction 2; fear.
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If a cat, after five trials of this kind, was shown to the infant, the latter shrank from the cat and crawled away.

Later on, the child could be reconditioned by giving it chocolates whenever a cat was near, until in the end the stimulus "cat" was linked up for the child with pleasant experiences and therefore it began to like cats again.

Dashiell gives an account of a similar example :

"A boy was given examination and treatment before and after the tonsils were cut out by a white-coated shiny-instrument-wielding physician; for a year and more thereafter he was terrorised by the mere sight of a barber wearing his white coat and manipulating his nickelled clippers and scissors. This fear reaction was eventually overcome by a barber who set a bowl of goldfish near the child, directing his highly interested attention to them, and saying 'fish,' meanwhile working upon the boy's hair unobtrusively and casually. Later the child, upon hearing 'fish' or 'hair-cut' or 'Dayton's' (the barber's shop) spoken aloud, would smile, and with a hand describe circular gestures imitative of the swimming of the goldfish."—(*Fundamentals of Objective Psychology*, page 179.)

### § 29

The conditioned response was discovered by the Russian scientist Pavlov. He experimented with dogs.

**How a Conditioned Response is formed** Dogs react to food (stimulus 1) by an inborn and unconditioned reaction, the secretion of saliva—their mouth waters. Pavlov took a dog and,

whenever he gave food to it, he rang a bell. The sound of the bell (stimulus 2) was in this way repeatedly linked up with stimulus 1, *i.e.*, food. We can show this in a diagram:

Stimulus 1,	Reaction,
Food.	Flow of saliva.
Linked up with	
Stimulus 2,	
Sound of bell.	

After repeating this again and again, Pavlov rang the bell without giving food, *i.e.*, he applied stimulus 2 alone. The dog now reacted to the sound of the bell by the flow of saliva. A conditioned response had been formed, a response to a new stimulus.

In the form of a diagram:

Stimulus 2,	Reaction,
Sound of bell.	Flow of saliva.

In this way, all kinds of new reactions and habits can be induced in dogs, and also in human beings.

Generally speaking, a conditioned response is formed if two stimuli are repeatedly presented together, and, as a result, one stimulus can take the place of the other.

The conditioned response was known to the older psychologists under the name of "association of ideas." Ideas are associated if one idea "reminds us" of another; if they are connected, or fused into one. Thus a locomotive may remind us of the South Coast by "association of ideas." Repetition strengthens associations.

The visual image of a face (idea 1) may suggest the name of the owner of the face (idea 2). This is an association of ideas. Only sometimes does the process need reinforcement by conscious effort, *i.e.*, in those cases where it does not take place smoothly (as in illness or old age).

### § 30

The conditioned response is the basis of all learning, education, and training. Education consists in encouraging or

### The Importance of Conditioned Responses

discouraging certain actions of children by linking them with pleasant or unpleasant stimuli. Showing and withdrawal of affection in the family and social approval and disapproval in society at large are the most powerful factors in education. In addition, physical punishment and the infliction of pain is often applied as a stimulus.

Advertisements and effective political propaganda mostly do not appeal to our reason but to our ability to form conditioned responses. It is by being repeated together that two stimuli, or two ideas, are linked together. Incessant repetition therefore is one of the secrets of propaganda of all kinds. "Beer is best." No arguments, but simply the assertion, repeated indefinitely. The people who spend money on that sort of thing know well that in the long run this new "truth" must inevitably soak into the minds of millions. Hitler says in his book that by incessant repetition one can make people believe anything, and his success proves that there is much truth in his statement. The more frequently a man repeats a thing, the more likely he is to be believed—irrespective of whether his statement is true or not.

The British ruling class realises this. The late Lord Fisher says in a letter to the *Times* (15/12/19) on the shortcomings of the Admiralty:

"All my arguments failed till I hit on a poster—COME OVER FOR THE WEEK-END! Now, it's fixed up! What is a poster? It's reiteration! Reiteration is the secret of conviction! Repetition is the soul of journalism! Advertisement is both! It is the soul of business! Keep on saying 'Sack the Lot,' and we shall be rid of them."

Socialists will bear in mind that this kind advice can be used not only for sacking admirals, and that it can be made very useful for nobler ends than either the noble lord or Adolf Hitler had in mind.

If a manufacturer advertises cigarettes he often puts a very nice-looking girl on the advertisement. Obviously it is not the girl who is for sale but the cigarettes; and the girl has nothing whatever to do with the cigarettes. The purpose is to form an association between this particular brand of cigarettes and the pleasant feelings aroused in the average male by the

sight of a pretty girl. The unappealing stimulus (cigarettes of a certain brand) fuses together with the pleasant stimulus (girl); the pleasantness of the stimulus "girl" flows, as it were, over to the stimulus "cigarette" and thus adds to its attractiveness. If this process is repeated often enough, the manufacturer manages to excite a slight sexual emotion at the sight of his cigarettes. A study of any newspaper shows how universally sexual emotions are used to create favourable conditioned responses to certain goods. Also in war propaganda this kind of appeal is widespread (film stars sitting on guns, etc.).

## CHAPTER IX

### THE FORMATION OF HABITS

#### § 31

Unconditioned responses are performed without previous experience. They are part of the individual's inborn stock-in-trade of responses.

**Habit** Conditioned responses have to be individually acquired or learned. A conditioned response, or a series of conditioned responses which is learned thoroughly, retained and reproduced automatically when the appropriate stimulus occurs, is called a *habit*. In the widest sense it includes, not only well-established habits, like riding a bicycle, which we come to perform automatically, and such phenomena as the "drink habit," the "drug habit," etc.; but also most of the uncertain and imperfectly established associations of responses which we perform when trying to deal with an unaccustomed situation.

All acquired methods of routinist action and routinist response to stimuli, our acquired mental attitudes towards things, our complexes, are of the nature of habits.

Watch a man riding a bicycle, or operating a machine in the workshop. He performs the most elaborate and delicately adjusted combinations of movements of body, arms, and legs. These combinations of movements do not come naturally to him when he starts to learn, but have to be acquired by practice. In the end they become so thoroughly "habitual" that they are performed, without the necessity of thought, unconsciously.

Almost any action that you can think of resolves itself into such acquired habits. The fact that you can read this book depends on the habit of eye and brain which enables you to associate certain sequences of impressions received by your eye with certain words and experiences in your mind. The fact that you are studying psychology is the result of influences which, acting on you in the past, have led to the formation of

### THE FORMATION OF HABITS

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your particular habits of mind. The formation of these particular habits is dependent on the existence of the appropriate inborn mechanism. An individual whose intelligence is below a certain level, as is that of some of the duller people we meet in everyday life, is incapable of forming the mental associations necessary for the development of an interest in the question of how and why we act as we do (psychology).

#### § 32

In man, if a certain succession of stimuli and reactions recurs somewhat infrequently, the memory may be incomplete and defective. Thus a beginner learning to ride a bicycle, or to operate a typewriter, is clumsy, hesitant, and slow in his responses; the habits are not firmly established, and

#### The Fixation of Habits

inappropriate responses may come into conflict with them. But when a particular succession of stimuli and reactions has occurred over and over again, the path for the impulses becomes so well marked that, the proper stimulus being applied, the accustomed response prevails over all other actions. This is illustrated by the familiar story of the ex-soldier who was carrying his dinner in a plate when a practical joker shouted "Attention!" So thoroughly had the man learned his drill that his heels came together, his hands shot down, and he dropped his mutton and potatoes in the gutter. The standing to attention was effected with as little conscious control as in the case of the reflex withdrawing of the hand on touching a hot stove.

A habitual operation, whether an action or a line of thought, becomes so stamped on the personality that any departure from it is painful, and is sedulously avoided.

Educability, the capacity to form habits, depends on associative memory. Where the associative mechanism is simple, as in the frog, the individual can learn little. Where it is complex, as in man, secondary association so modifies and regroups the original responses and tendencies that he can adapt himself to all kinds of changes, so that his behaviour (habits) varies enormously according to the environment in which he lives.



## § 33

Intelligent action and the complex acts of reason and "will" may be explained in terms of the conflicts of habits. For a simple case, we may take that of a man who has the habit of catching a certain train every day, and who one morning arrives just as the train is beginning to move out of the station. Habit will impel him to try to board the train. "But if it occurs to him that he may fall or get killed, then there is a conflict, and it has to be decided which idea he will follow. If the first idea wins he will run after the train, if the second one wins he will stop." (Goddard).

The factors which determine the result of this conflict are:—

(1) The number of experiences and ideas (habits) that are associated with the impulse to board the train. The more such ideas there are, the more numerous the possibilities of alternative action.

(2) The frequency with which he has previously acted. Thus, other things being equal, a man who has frequently boarded the moving train will be more likely to decide to board it this time than one who has seldom ventured to do so; the "habit" will be well established.

(3) How recently he has acted one way or the other; the tendency being, where an alternative is involved, to be guided, other things being equal, by the more recent experience. Thus, a man who seldom ventured, but had successfully done so yesterday, would be more likely to board the train to-day; whereas one who had frequently boarded moving trains, but had recently witnessed a serious accident resulting from such an action, would be likely to refrain from the attempt.

(4) The emotional accompaniment, i.e. the pleasantness or unpleasantness accompanying either line of action. The overflow of nerve action from the autonomic system (emotion) may be of a pleasant or unpleasant nature. The former would be the case when the action involved the satisfaction of some strong desire; to keep an appointment with a lover, to be present at an occasion which gratifies personal ambition, etc. The latter would be the

case if the action involved fear of personal injury, or if the appointment to be kept involved a task of a distasteful nature. In these cases the emotionally tinged habit-systems that we call complexes influence the decision.

In such instances, and in the far more complex acts of choice we are sometimes called upon to make, there is as much reason to believe that everything is "determined" as in the conditioned reflexes which Pavlov induced in the dog.

When two conflicting habits nearly balance each other, *indecision* results. We can think of the nervous impulses as flowing first into one neurone pattern, then into the other, according as each is reinforced by fresh memories (associations) of past events.

## § 34

The higher animals are creatures of habit. Dogs, horses, poultry, etc., tend to follow a regular routine, and anything which upsets their habits—e.g., failure to take a dog for a walk at the usual time, a change in the feeding hour for poultry, etc.—upsets their whole behaviour. We all know of the horse which automatically stops at the "pubs" where his master is in the habit of refreshing himself.

Every man's behaviour, under any given combination of circumstances, depends largely on habit. This applies, not only to habitual ways of acting, but also to habitual lines of thought and points of view. The actions, ideas, and institutions of any society are the expression of the particular habits of action and habits of thought that environment has induced. This is merely a statement of the principle of economic determinism in terms of psychology.

Most of our deep-seated habits are acquired in youth, and "education" is mainly the acquisition or inculcation of habits. Habit, writes William James, is

"the enormous flywheel of society, its most precious conservative agent. It alone is what keeps us all within the bounds of ordinance and saves the children of fortune from the envious uprisings of the poor. It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein."—(*Psychology*, p. 143).

Habits become more and more fixed as one grows older. It is the force of habit which makes any effort to convert elderly people—those “walking bundles of habits” (James)—to the idea of a new order of things so hopeless. Their hatred of change and their hostility to progress are the expression of the real discomfort which departure from habit involves. *In times of rapid and revolutionary change it is to the young, and not to the old, that we must look for that adaptability to changing circumstances which is necessary for efficient leadership.*

## CHAPTER X

## INSTINCTIVE ACTION

## § 35

Where human beings display an inborn tendency to adopt a particular course of behaviour in particular circumstances, their actions are said to be *instinctive*. “Instinctive action” is simply another word for “unconditioned reaction.” Similar tendencies are observed in other animals. The simpler instinctive actions intergrade with those dependent upon inborn reflex chains (such as the infantile feeding reflexes). The more elaborate instinctive actions become modified in the course of life to form all sorts of habits and ideas. In such cases, the co-operation of conscious, intelligent choice may be necessary to the proper functioning of the “instinct.”

Let us first consider instinctive action in the lower animals. Take the behaviour of a nervous horse which shies at an unfamiliar object, of a dog with a bone, and so forth. Such behaviour reactions, termed instinctive, do not appear to involve any knowledge on the animal's part of the purposes which its behaviour serves. Similarly, man performs many instinctive actions without any conscious realisation of purpose. Most human beings are to-day aware that the act which satisfies the sexual impulse serves also to propagate the species, but some primitive peoples have no such knowledge. The members of certain primitive races are still unaware to-day that the birth of children is the outcome of the sexual act.

Consider the behaviour of a child frightened by thunder or any sudden loud noise. It behaves in a way that we associate with the emotion of fear. It stops in whatever action it is performing, its facial expression changes, it may cry out, it rushes to its mother and tries to hide in the folds of her dress. The child has no rational conception of any hurtful power, and no idea that by hiding it is more likely to escape. It

simply obeys a blind instinct. This is the instinct of escape, or flight. The impulse to escape induced by a loud noise is inborn. The particular line of behaviour the impulse leads to (e.g., whether the child rushes to its mother, or buries its head under the bedclothes, or screams for its mother to come to it) is acquired; it depends, that is to say, on the habits that have been formed by the child in response to past experiences.

Instinctive actions generally tend to the well-being of the individual or the species; they are performed, on their first occurrence, without previous experience or education; they are performed without consciousness of the end to be obtained or of the relationship between this end and the means set to work for its attainment; they are similarly performed by all the members of a species or other more or less restricted group of animals; in the higher vertebrates, and especially in man, they are subject to modification on subsequent performance under the guidance of experience (associative memory).

In man, intelligence so modifies behaviour that the instinctive basis of action may be difficult to trace. There is consequently much diversity of opinion as to the extent to which man's so-called instinctive reactions are due to inborn associations of reflexes, or to acquired habit.

The plasticity of man's instinctive tendencies, under different upbringings, is so great that a child exposed from birth to an environment totally unlike that which surrounds the normal child would probably grow up with modes of response entirely different from those that are often regarded as due to a hereditary instinctive mechanism. The basal hereditary tendencies (reflexes, emotions, etc.) would be there, but would be almost unrecognisable in their new combinations. Society could be radically transformed in a generation by changing the influences brought to bear on the young. Since 1917 this has been demonstrated in Soviet Russia.

### § 36

The evolution of the mechanism of behaviour in the animal kingdom early branched into two distinct lines: one, cul-

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minating in the insects, based on a highly complicated inborn mechanism of *stereotyped instincts*, with little capacity for the modification of behaviour in response to changes in the environment; the other, which produced the vertebrates and culminated in man, based on the capacity to form new habits by associative memory, and leading to *consciously intelligent behaviour*.

In the line of evolution culminating in the insects, progress resulted in the production of creatures perfectly adapted both in body and nervous organisation to perform without training a highly complex course of behaviour, in one particular kind of surroundings. The most perfect development of this is seen in the social insects, ants, bees, and wasps; but the mechanism which leads the common white butterfly, without previous experience, and without any knowledge of the purpose of her behaviour, to single out the cabbage plant, the natural food of the caterpillar, as the right place to lay her eggs, or that which directs the female blow-fly to a piece of carrion for the same purpose, and hundreds of similar examples familiar to every observant person, are scarcely less remarkable.

In insects these instincts involve the development of inherited mechanisms which in their action possess much of the fatality and inevitability of our own inborn reflex actions, but which are highly specialised to perform extraordinarily complicated operations of a particular kind in a limited field.

The line of evolution which culminated in man followed the course of progressively perfecting, during millions of years, a nervous organ (the cerebral hemispheres) whose function it is to integrate man's reflexes and instincts into habits, so that they work as a highly versatile organisation, capable of dealing with a great many different kinds of environment and changes in the environment. The result is that man can adapt himself to life in the arctic regions or in the tropics, to a diet of meat or a diet of vegetables: he can get his living as a hunter, a pastoralist, a cultivator of the soil, a worker in industry, or a parasite on the labour of others.

Ants have evolved into distinct species with fixed instincts which lead to behaviour superficially resembling these various

forms of human economic activity. Thus, there are species of ants which lead a nomadic predatory existence; others which keep certain insects (plant lice) as men keep cows, and for the same reason; others which cultivate the plants (fungi), on which they feed, in underground gardens; others which steal the young (larvae) of other ants, and rear them to serve as slaves in their own nests; others which live as parasites in the nests of other kinds of ants. But, whereas the human activities above referred to depend on elaborate associations of habits acquired by each individual during his lifetime in response to a particular environment, the activities of each species of ant are the result of an inborn mechanism peculiar to that species capable of reacting only to a special environment.

Thus a dairy farmer could learn to be a market gardener, and a rich idler could be forced to work. But a "cow-keeping" species of ant, deprived of access to the particular plant lice on which it depends, would die, even if surrounded by the conditions under which a fungus-cultivating species lives. It could no more take to fungus cultivation than a typewriter could be turned into a sewing machine. And similarly, a parasitic species of ant could never learn to work for its living. So rigid are these instincts that in captivity the legionary ant (which when on the march recognises the path by the scent left by those ants which have gone before) will form a column round a glass jar, and march in a circle for days! The instincts of insects are infallible so long as the circumstances are unchanged; but, being to all intents and purposes incapable of individual learning, an ant could not survive a change of circumstances by means of a change of habits, as man can.

*To man a change of environment means new worlds to conquer. To the ant it would mean extinction.*

We thus have to distinguish between the fixed instinctive behaviour of the lower animals, which reaches its highest development in the social insects; and the behaviour of man, based upon a highly plastic and versatile associative mechanism, capable of adapting itself to every change in the economic environment. The distinction is of fundamental importance. Some sociologists appeal to biological conceptions in order to justify the existing social order. Such writers emphasise unduly the biological aspects of human social relationships.

They tend, on the other hand, to minimise the degree to which human activities normally arise out of the responses which man's versatile intelligence makes to the economic environment. *The highly developed adaptability of the human species, and man's success in creating an economic environment of commodities, tools, and knowledge, have rendered mankind more and more independent of the direct working of the biologic laws which control the life and behaviour of other animals. Human society has, in great measure, passed from the biologic to the economic and social phase of evolution.*

## CHAPTER XI

### MAN'S PRIMARY WANTS

#### § 37

Man is an animal, and he is a social animal. Man's wants, therefore, grow partly out of his body, and partly out of society.

Certain wants are the consequence of Man's Organic Needs needs in the tissues of our body. We find, in fact, the following main tissue needs:—

1. Hunger, or the desire for food.
2. Sex, or the desire for reproduction and sexual pleasure.
3. Desire for comfort and warmth.
4. Desire for rest.
5. Desire for exercise.

The stimulus for hunger is the rapid and rhythmic contraction of the walls of an empty stomach. The stimulus for sex activity is the presence of sex hormones in our blood. Later on, in chapter XII, we shall deal more in detail with the sexual impulse.

The desire for food is essential to self-preservation. The sex desire is essential to species preservation. The way in which men gratify their hunger and the means by which they regulate their sexual impulses are at the root of all human history. "Food and sex are the great interests of the individual and of society" (Dashiell). No motives have played a more dramatic part in history.

Further, in order to survive, the human organism must maintain a fairly constant temperature of about 98.6 degrees Fahrenheit. This want, too, has been of prime importance for the development of civilisation. Where, owing to excessive cold, skin conditions are too unfavourable, as in the Arctic zones, civilisation never has grown beyond the most rudimentary beginnings. The icy cold freezes higher culture.

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Where, owing to great heat, skin conditions are too favourable, as in tropical countries, the human mind has also, on the whole, suffered from stagnation. It is mainly under moderately unfavourable skin conditions that civilised communities have been evolved. The body must, in the temperate zones, be covered with clothes and shelter must be found as a protection against wind and weather. The problems with which the fashioning of clothes and the building of shelter have confronted men have done much to enrich the human mind. The wearing of clothes led to a great number of taboos (prohibitions), especially as regards sexual life; and it had a profound influence on the repression of the sex instinct and the development of what we call morality. The building of shelter led in the long run to the congregation of people in cities with all that that means for our outlook on life. And this vast superstructure rests on one factor—on moderately unfavourable skin conditions.

We desire rest because muscular effort creates poison in the shape of lactic acid in our muscles, and a period of rest allows the blood stream to remove this paralysing toxin from the muscular tissues. Finally, we need exercise because our muscles would degenerate if they were not kept in movement. In addition, without exercise our blood circulation becomes sluggish and we feel unwell.

So much about our tissue needs.

#### § 38

The rest of our primary wants are in the main related to the social world in which we live. We can give, after Mander,

a table of the main wants we experience as a consequence of living in society. We want

- Man's Social Wants**
1. a sense of security,
  2. to be noticed or admired and to feel that we "matter" to somebody;
  3. to feel superior in some respect to others;
  4. companionship and fellow-feeling;
  5. to be like others of our own "set";
  6. to possess and to store up possessions.

1. The desire for security is greatly felt to-day. People want security in their jobs. They want protection from unemployment, slumps and wars. Lack of security creates anxiety. The desire for security is one of the most powerful drives behind the longing for Socialism.

2. In one respect or another, everybody is trying to gain some sense of his own importance. When people lived together in small villages it was much easier for almost everybody to be "somebody" in one respect or other. But modern industrial civilisation has hurled millions of people into the big towns and created a "nameless" mass. The individuals suffering from the feeling that they are "nonentities" have recourse to numerous devices by which to satisfy this craving for attention and recognition, to fulfil the *self-assertive impulse*. Young children already have a desire for self-display. We are annoyed if people "cut us dead"; if they overlook our very existence. We are irritated if somebody does not listen when we speak to him. Mander gives a good survey of some of the devices which people adopt in order to draw attention and admiration to themselves:—

"We may dress conspicuously or take pride in dressing well. We may strive to excel at tennis or football or bowls. We may join the ranks of those who are always writing signed letters on every possible pretext to the newspapers. Or this may be one of the unconscious factors in deciding us to become ministers of religion or actors or school-teachers or politicians. It may cause us in conversation always to talk too loudly. It may inspire us to stand on a soap-box holding forth about politics; or perhaps to stand under a lamp-post shouting about the state of our souls. We may buy a showy motor-car. Or we may tell everybody about our troubles and ailments. We may find secret delight in seeing our names mentioned in the newspaper. Or we may seek the limelight—more or less unconsciously—by becoming prominent persons in our Church, or in a political party or in a trade union or in Society. This is not a motive of which we need be ashamed. It is like every other primary motive or want—neither good nor bad in itself" (pp. 26 to 27).

In social life, this want leads to emulation and rivalry. James declares that nine-tenths of the work of the world is done by the instinct of emulation.

In civilised life certain aspects of emulation are unquestionably anti-social, and on this account many modern educationists deprecate the appeal to emulation as a motive. When a better civilisation, a classless civilisation, has been attained,

there may be less scope for this primitive instinct. But it is almost as primary as the sexual impulse; and where the manifestations of a primary instinct prove undesirable, sublimation (see below, § 44) is a healthier practice than repression. There is a friendly rivalry between kindred groups which may be of great value in promoting keenness: the sort of rivalry that is encouraged in Russia to-day. As far as education is concerned, the student should be encouraged in the endeavour to outdo his own past record, rather than in the endeavour to outshine his rival in the class.

3. The desire for superiority is the natural consequence of the fact that in the course of our lives, especially during childhood, we cannot help feeling inferior in some respects or other and that, therefore, we must "over-compensate." In a class society this desire feeds the social disease of snobbishness. People continually keep before their minds the supposed superiority they feel as regards people who are just a little lower in the social scale—in this way balancing the inferiority which they are taught to feel towards their "betters". In the working-class, snobbishness is not absent, and it is one of the major obstacles to unity of the workers in their struggle for Socialism. James Sexton gives a vivid account of the caste system found at the Liverpool docks some years ago:—

"The hand busheller of grain—now displaced by the elevator—looked with scorn upon the man who did the donkey work on the quay; the grain carrier who could easily sling a four bushel sack weighing a couple of hundredweights across his back and shoulders, and run along a swinging plank, thought himself the master workman of the ages; the stitcher of the bags used in the bulk salt trade, a veritable artist in his craft, had a most colossal contempt for the man who merely handled bags filled at the salt factory, whilst the tallyman who weighed and checked the bags considered himself the best and most important of all the casual dock labourers.'"

Modern conditions of production make this sort of superiority more and more difficult. But still the snobbish feeling crops up at the slightest provocation.

### § 39

4. The desire to be in the company of others is common to all animals which have adopted a gregarious or social habit

**Man's Social Wants** (contd)  
 of life (e.g., beavers, dogs, wolves, baboons, sheep, men, etc.). It is missing in solitary animals like cats and tigers. Human beings are unhappy when they are lonely and cannot satisfy this elementary desire. Later on we shall deal more in detail with the "herd instinct."

5. The herd is inclined to punish a person for being different and conspicuous. People, therefore, have the desire to avoid this punishment by conforming to the customs and fashions which are taken for granted in the group to which they belong, or to which they wish to belong. Already, very early, children imitate their parents. Breaches of the rules of the herd are ridiculed or, in more serious cases, reprehended as immoral. Most people are therefore anxious to avoid doing "what is not done." "To do the correct thing" has become a sort of obsession with certain strata of the British middle class. The innumerable and often almost invisible ties by which social customs—partly reasonable, partly unreasonable and partly neither—govern our lives with our own consent have been set forth brilliantly in Archibald Lyell's *The Future of Taboo*. Education, to a large extent, serves to create social uniformity. As Dr. O'Grady said, "We don't go to school to learn but to be soaked in the prejudices of our class, without which we would be useless and unhappy." The persons to whom Dr. O'Grady refers are at least brought up in the prejudices of their own class: the workers in those of an alien class.

A curious consequence of this desire for social uniformity is that if, for instance, we have opinions differing from those of the herd, we do not rest until we have persuaded others to feel and to think as we do. Only when an opinion is shared by many and has got the stamp of social approval by our "set" or "group" do we feel completely happy about it.

6. Acquisitiveness is the tendency to get and to keep things, over and above the immediate necessities of life. In conjunction with the fear of its non-realisation (the fear of poverty) it is the strongest driving force in capitalist society. It is perhaps based on primitive instinctive tendencies, such as reaching for and grasping objects, seeking for food and other necessities of life, etc. As we know it, it has much more of habit than of inborn tendency in it; for it is either not present,

or present only in very different forms, in certain primitive peoples; while in capitalist communities it takes the form of powerful complexes, embodying greed, ambition, covetousness, fear and hatred. As a constituent of envy, it plays an important part in the class-consciousness of the dispossessed proletariat and (coupled with fear) of the class-antagonism which the contemplation of the growing power of labour excites in the capitalists and their hangers-on.

#### § 40

Bourgeois scientists who are ignorant of dialectics usually overlook the fact that each of these social wants is coupled in our minds with its opposite.

**Opposite Wants are linked together.** We not only desire security. It is as natural for us to desire to take risks. Not everybody always desires security.

Life would be too boring if full and all-round security were achieved or indeed possible. Risk excites us by the prospect that things can just go wrong. Some people like to risk their lives, like Sir Malcolm Campbell and many professional warriors. Others prefer to gamble with their money; and usually this desire is so strong that it has to be curbed by legal restrictions. The healthy youth loves adventure. Modern traffic gives people an opportunity to enjoy risks in a small way—by driving recklessly, jumping on or off buses, etc. These are foolish things to do. But the world would be a dreary place if people had always been guided by the rule "Safety first." At least in phantasy all people enjoy risks—when identifying themselves with heroes in adventure stories, with acrobats in a circus, etc. In courtship it is largely the possibility of a rebuff which makes love-making interesting. The absence of this factor often makes married love rather dull.

Our inclination to take risks will, of course, be usually greater when we are young than when we are old. A political movement which is led by old people will tend to play for safety and to become over-cautious, with the result that in course of time it is superseded by younger and more virile

movements. If Socialism is to appeal to the younger generation it must not only speak about "security," but it must also stress the joy and thrill of taking the risk of a radical change.

The same urge for contrasts holds good for the other social wants. Many persons who are considered "important," at times have the irresistible urge to get out of this importance, and to be just "nonentities"—for a time. The desire for superiority over others is coupled with the joy with which many of us welcome superiority in others. Many people are on the look-out for somebody whom they can admire and acknowledge as their superior and leader. Obedience and hero-worship have their thrills as much as the sense of superiority. We shall deal with the socially-important problem of leadership later on.

After we have been much in company, we want—for a time—the opposite: to be alone. A man's mind is crippled if he cannot bear being alone.

To be sure, we want to be like others; but on the other hand complete equalisation and standardisation are resented by the mind as a fetter and a chain, and in some respects people try to be "different" from others; and they cherish these little differences.

Finally, acquisitiveness is coupled with the joy experienced in giving away and in making sacrifices. Capitalist society fosters acquisitiveness, and it usually cheats us of the joys which we experience when we can give something away.

#### § 41

Some of our desires have no proper adaptation to present-day society. For hundreds of thousands of years men lived as tribal hunters. This period of our history has left indelible marks on our minds. It has given us, for instance, the elementary desire to escape in face of danger: the desire to hurt and to be cruel. This old apparatus of instincts will in many respects not quite fit in with our present system of production and of social relations. By turning the men of one

tribe against the men of another tribe it proves a source of continual danger and instability.

The hunting instinct, although very strong, has become largely unconscious. Of course, the people who can afford it still gratify it and they have continued in all countries to satisfy this instinct by hunting animals. The fact that in England the artificial preservation of wild beasts for the chase is a perennial nuisance to those who are producing the food of the country, concerns them little. In town conditions however people cannot experience the thrill of hunting animals. They have, therefore, to substitute other hunts—for bargains, words (when solving cross-word puzzles), stamps, curios, etc. This instinct also becomes an ingredient of courtship. Further, the wish to pursue, catch, and capture has become an important drive behind intellectual pursuits. When the weasel hunts a rabbit it is completely absorbed in the task and disregards everything else. When a man pursues a problem and hunts for the solution, he may experience—if he is keen enough—a similar thrill, and the degree of his absorption can reach that of the weasel. He may forget everything else. This power of supreme concentration is transmitted to us from our hunting ancestors.

The great vogue of detective fiction is further evidence of the strength and universality of our hunting instincts. We love to become arm-chair sleuths.

Dangerous situations set in motion the desire to flee and to escape. These actions are intensified by the various changes characteristic of the emotion of fear (§ 28).

In some cases fright leads to immobility instead of to active efforts to escape. We see this in the "death-feigning" instinct of certain insects, birds and mammals. There is no conscious pretence. The immobility is the outcome of the working of a group of reflexes. In most cases it tends to promote survival, because a motionless body is less conspicuous than a moving body, and is therefore less likely to attract the attention of an enemy. Human beings "paralysed" or "frozen stiff" by fear exhibit the working of such reflexes.

Under the normal conditions of modern civilised life, the cruder manifestations of fear are not often obvious, but fear still remains a potent motive-power in human action. It is,



and has hitherto always been, the most conspicuous agent in the social discipline of human societies. Civilised nations, when environmental changes produce a crisis necessitating rigorous social discipline, find it necessary to revert to the cruder forms of the exploitation of physical fear; witness the adoption of the death penalty, "crucifixion," etc., as military punishments in war-time; and, in post-war days, the variegated brutality of Fascists and Nazis.

Fear can master and inhibit most other instincts, even the potent sexual instinct. On the other hand the maternal instinct of females often conquers fear (in defence of the young). A strongly organised complex, embodying what we call an ideal of conduct, may result in a display of physical or moral courage against which the emotion of fear is impotent (the behaviour of martyrs, etc.).

People who live by killing animals will develop a liking for cruelty. Man's cruelty is of twofold causation, in part a relic from ancestral hunters, and in part superimposed by modern conditions and purposive in relation to them.

William James contended that "man is the most ruthlessly ferocious of beasts." Much of the seemingly purposeless cruelty perpetrated during human history may well incline us to echo this assertion. Unquestionably, the deliberate infliction of pain is, for many persons, a pleasurable exercise of power. Much that is commonly stigmatised as cruelty is a perversion of the sex instinct. This perversion is technically known as *sadism*. Here, the causing of pain or the sight of blood is a direct satisfaction of the sexual impulse.

## CHAPTER XII

### THE SEXUAL IMPULSE

#### § 42

The biological function of the sexual instinct is to secure impregnation, *i.e.*, the fertilisation of the egg-cell or ovum, in those animals in which fertilisation is effected before the eggs are laid or at the moment of laying (frog, salmon).

**The Sexual Impulse**

This instinct causes animals of opposite sexes to recognise each other and attracts them towards each other at the time of pairing; it leads them to perform those acts (largely chains of reflex actions) which secure the fertilisation of the ova or egg-cells of the female by the spermatozoa or sperm-cells of the male. As a rule the male actively seeks the female; the female, often only after a period of avoidance, running away, etc., submits to the male. The sexual instinct in man is accompanied by an emotional state which McDougall terms lust. The word love, as commonly used, is a much more complex sentiment, comprising, in addition to lust (which may be repressed into the unconscious) much of the tender emotion normally associated with the parental instinct.

Physiologically it is probable that the sex instinct, which in the great majority of animals is a seasonal or intermittent one, is partly dependent on the effect, upon the nervous mechanism, of chemical substances (hormones) which are poured into the blood by the mature sexual organs at certain times.

The sexual instinct plays an important part in human institutions. It is selfish and in a sense anti-social. Its conflicts with the conventions of organised society are the basis of most of the romances, tragedies and comedies of life. It impels to great deeds to attract the chosen partner. Repressed and kept decorously in the subconscious, it gives their zest to many of our social pastimes.

There is no better example of the plasticity of man's instincts, of the extent to which the forms they take are due to accidentally or purposely formed habits, than the sublimations or perversions of the sexual instinct which are encountered in modern society. Among the sublimations we may include religious fervours, artistic and other creative aspirations, altruistic or propagandist zeal, etc.; among the perversions, such abnormal outlets as self-abuse, sodomy, sadism (gratification obtained through cruelty), masochism (gratification obtained by submitting to the infliction of cruelty), and the reversed forms of the instinct which produce the prude.

## § 43

Freud gives to the word "sex" a much wider connotation than that conventionally attached to it. Freud points out that the contact of certain parts of the body (not only the sex organs but many areas of the skin, e.g., mouth, breasts, arms, etc.) with objects, or the stroking of these parts, yields a pleasure which, though much less intense and specialised, is fundamentally of the same nature as sexual gratification—the latter being, as it were, a highly elaborated and specialised form of this reaction, chiefly confined to the sex organs and adjacent parts. He calls these areas erogenic zones. Examples of this satisfaction are seen in the mother's pleasure in suckling her child and in fondling it and folding it in her arms; and in the child's pleasure at being picked up in the arms, tickled, rocked, patted, etc. Compare also the cuddling of lovers; note, moreover, the pleasure derived by animals from being stroked and petted.

Fierce controversy rages (especially among those who have never studied Freud's works) around Freud's theory of the sexual basis of psychic phenomena. Many persons are shocked at the idea that sex plays a large role in their subconscious life. Among those who resist the theory most strongly are persons in whom the existence of a powerful but repressed sex complex, which dominates their whole life, is obvious even to the amateur unfamiliar with psychoanalytic methods.

For our immediate purposes the common-sense point of view is to recognise that, while biologically other instincts may be as primitive as sex, or even more so, the sexual instincts, being liable to be awakened by hormones from within and not, like fear and anger, dependent on stimuli from without (stimuli which are not often or intensively applied in civilised life) tend to take an unduly prominent place in civilised man. We may never have occasion to experience great fear or great anger; but sex is always with us.

## § 44

The name *sublimation* is given to the process by which the driving force behind an instinct, and especially the sex instinct, is diverted from the original ends of that instinct and applied to other ends, ends as a rule less out of harmony with the material and social environment.

Sublimation is essentially a human phenomenon and largely a consequence of the leisure which men have secured through increasing control of the natural environment. In the pre-human and early human stages, man's time and energy were required mostly for getting food and for defence against hostile surroundings. Even sexual relations probably played a part not much greater than they do in the life of wild birds and mammals. As conditions became easier, the demands hitherto made on the maintenance and defence instincts grew less urgent. Man was less often very hungry, very angry or very much frightened; and he had less need to spend all his time and energy in getting food, in fighting or in escaping from his enemies.

His conation, the restless striving to do something, to achieve something, then sought fresh outlets. No doubt one of these was sexual excess. The sex instinct was just as liable to be aroused as before, for the circumstances that awaken it are in great measure dependent on stimuli caused by secretions within the body. Thus an inordinate amount of sexual indulgence is characteristic of certain savage tribes and barbaric peoples to-day and is a familiar feature of civilised life.

But in any society of men it is necessary to put restraints on this instinct. In the primitive community, the jealousy of the elder men acted in this way, as well as the taboos and restrictions of tribal custom. In modern civilisation, all kinds of influences make for restriction of the circumstances under which this natural instinct can be gratified. The conation behind the instinct is therefore checked and must find an outlet through another channel.

The substitute may take almost any form, as we learn from the study of sex psychology and from the manifestations of hysteria and insanity. In primitive societies it may find an outlet in art, personal decoration, music, dancing, etc., or in religious ceremonies. The sexual basis is often obvious in these occupations, especially in self-adornment, dancing and religion. To leisure and to the need for finding a fresh outlet for conation we owe the gradual invention and improvement of tools and the development of handicrafts.

"But these utilitarian occupations by no means exhausted the field in which psychic energy could be employed. Of activities not directly utilitarian we have, on the one hand, the immense artistic developments of the ancient world—architecture, decoration, sculpture and painting, poetry and music; on the other, the development of abstract thought—geometry, mathematics and philosophy."—(Tansley, *The New Psychology*, p. 80).

Abstract thought, resulting, in the first instance, not in action but in increased knowledge how to act, is the highest product of this diversion of conation from the every-day needs of life into new channels.

#### § 45

Sublimation is, then, a characteristic of the social stage of evolution; a diversion to creative and cultural ends of the surplus energy no longer needed for biologic ends. It has been a great factor in the evolution of man's economic environment and in man's psychical reaction to that environment. It works in a circle—not a "vicious" circle, but a beneficent circle. Each discovery, each new thought, is capable of still further releasing

man from the necessity of devoting the bulk of his energies to the satisfaction of the needs of his animal existence. It gives him more leisure in which still further to extend his conquest of nature. Under the capitalist system most persons are robbed of this benefit, robbed of the natural outcome of their own and their forefathers' work. But this state of affairs will inevitably be terminated as a consequence of the impossibility of preventing the dispossessed from acquiring and using knowledge, however effectively they are excluded for the time from the ownership of the material products of their labour.

## CHAPTER XIII

### MAN'S FAMILY IMPULSES

#### § 46

In women, as in the females of many of the higher mammals and in not a few of the other vertebrata, the parental instinct at certain seasons dominates all the others, even mastering fear. In the higher animals the immature young have to be protected and cherished by the parents, and in especial by the mother, for a considerable period after birth. In the human species the period of immaturity is exceptionally long. The parental instinct is the expression of the biologic need for the existence of a behaviour which shall, in this respect, ensure the survival of the species. In the absence of the parental instinct, the species would die out in a generation. When the offspring is directly threatened with danger, this instinct often manifests itself in the form of pugnacity, which may then be displayed even by animals of a pacific type.

In the higher types of human being, feelings akin to the parental emotion are evoked by all weak and immature beings. It is thus at the root of many of our loftiest moral ideas and aspirations. It arouses the indignation which, often coupled with ferocity, is the basis of the desire for justice. In this extended form it probably enters into all altruistic conduct. The pampering of lap-dogs by idle rich women is largely a diversion of the parental instinct from its natural objects.

Watson warns us against the exaggerated idealisation of this instinct by some psychologists. On the one hand, parental prepossessions are formed in early life, under the influence of social opinion; on the other, women whose infants are unwelcome (either because they are illegitimate or because their advent limits the mother's freedom) may develop reactions towards their children that are anything but maternal. Here again we see the principle that *in man the capacity to form habits under the influence of the social or economic environment often*

### MAN'S FAMILY IMPULSES

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*tends to render inoperative such inborn behaviour tendencies as man has inherited from his ancestors during the biologic phase of human existence.*

#### § 47

All questions connected with *family* life, the relationships of the sexes, the marriage tie, the responsibilities of parents towards their children, and the respective rights and interests of the parent and the community in the child, are so intimately related to emotionally coloured attitudes of mind—to deep-seated complexes built up around the sexual, parental, acquisitive and other instincts—that writings on these subjects are often of little scientific value. Among subjects of controversy are the degree to which the parental instincts are the result respectively of inborn and of acquired tendencies; whether the inborn parental instincts of the father are weaker than those of the mother, or whether such differences as are observed are due to differences in habit arising out of the different parts which father and mother perform in economic and domestic life; whether man is by inborn nature more inconstant than woman, or whether the fact that, as a rule, the woman is disposed to stick to her husband, whereas many men have polygamous tendencies, is determined by the economic dependence of woman and the relative freedom of man. Whatever view we take as to the existence of hereditary factors (instincts) in these cases, we can satisfy ourselves by practical observation that any such instincts are easily suppressed and replaced by habits developed under the influence of the social and economic environment, public opinion, etc.

The *home* is a more profitable subject for speculation than family relationships are, for the home is essentially an economic institution, and is already undergoing profound changes. Large families have become rare. The domestic production of food and other necessities of life is now comparatively expensive. Women are coming to resent the needless drudgery and bondage that the individualist home entails. By the capitalist system and by changes in the modern outlook they

are to an increasing extent withdrawn from domestic activities. Practically universal is the tendency towards life in flats and tenement houses, in which to a considerable extent the arrangements for food and service are communalised. The separate homes of the workers are often supplied with meals from fried fish shops and other depots of ready-cooked food. These tendencies all point towards the replacement of the wasteful individualist system by some form of communal or collective catering.

We have referred to the disappearance of large families. Unquestionably the predominant factor in the transformation of the home at the present day is man's discovery of the means for family limitation or even for the complete avoidance of parenthood, the practice of birth control. The capitalist system handicaps the worker who has a large family and practically places a premium on childlessness.

Capitalists organised as competing imperialist States have, of course, an interest in the increase of population. In some countries, for instance in Germany, Italy and Japan, the possessing class urges that the proletariats of rival nations should compete in the breeding of cannon-fodder for future wars. The present policy of Soviet Russia is also to encourage a rapid growth in its population.

The changes above discussed will exercise a profound influence on the home and on the conditions under which people will, or will not, consent to bear and rear children. They will greatly modify the relative responsibility of parents and the community for the custody and education of children. Extensive reactions will doubtless take place as concerns the institution of marriage no less than as concerns the "parental instinct" and other family institutions, but these developments are too problematical to be discussed here.

## CHAPTER XIV

### REPRESSION

#### § 48

Man is born as an organism, with certain organic needs, but unaware of the world around him. By the time he is twenty, he has been shaped into a citizen. Life has been called a process of disillusionment. We start with multifarious wishes, but we soon find out that many of them must remain unfulfilled. Frustration is the central experience of life, and especially of social life.

#### **The Conflict between the Individual and Society**

(Cf. one of the most haunting of many haunting books by H. G. Wells, his recent work entitled *The Anatomy of Frustration*.) Many of our organic desires do not fit in with social conventions; they meet with social disapproval or punishment; and consequently the individual cannot satisfy but must repress them.

As a result of the conflict between our wants and the needs of society, many of our wants are repressed. In consequence, what a person appears to be and what a person actually is are two very different things. On the surface, he conforms to social demands. Below the surface, his unsatisfied wants are boiling and trying to come out, like steam out of a kettle. In order to see what human beings are actually like, one must observe them under conditions in which—during temporary anarchy or absence of law—they behave as they would like to; or we can follow them into the secret recesses of their day-dreams and fantasies. We cannot go into detail here. But these observations can be summed up in the words: scratch man's skin and underneath you'll find the animal.

There is a further reason for disappointment. "All children live in the happy delusion of omnipotence" (Ferenczi). The infant stretches out a hand toward the lamp or moon, expecting to seize it.

**Freud's pleasure principle**

"represents the primary, original form of mental activity and is characteristic of the earliest stages of human development. . . . Its main attributes are a tendency, on the one hand, to avoid pain and disagreeableness of whatever kind, and, on the other, a never-ceasing demand for immediate gratification of various desires of a distinctly primitive and lowly order."—(Ernest Jones, *Papers on Psychoanalysis*, p. 3).

The pleasure principle is "egocentric, selfish, personal and non-social." It plays the leading part in the behaviour of children and mental defectives; and in the more uninhibited mental states, such as dreams, wit, fantasy, insanity.

The higher mental processes arising from associative memory, from our experience of the realities of life and of the consequences of our actions, come into conflict with the pleasure principle, and form the basis of rational, as contrasted with instinctive, action. These processes are called by Freud the "reality principle." When the pleasure principle is in the ascendant, impulses which would tend to restrain it are repressed. The reality principle, which represents the forces of our social environment and our ability to appreciate them, acts as a check upon the pleasure principle.

Fantasy remains subject to the pleasure principle. Science is the kind of thought activity most successful in overcoming it. The co-operation of both (fantasy and science, imagination and judgment) is characteristic of the creative type of mind.

Freud and his followers refer the beginnings of mind to the period before birth, when the foetus is in complete equilibrium with its environment and is subject to no conflict with external reality. In this stage, if consciousness were present, the unborn child would experience the feeling of omnipotence, for all its wishes would be fulfilled as soon as they arose. The happy delusions of omnipotence which characterise the pleasure principle still remain a feature of child-life (prolonged by indulgent parents), and are followed by a stage in which the individual, when he performs certain acts and emits certain sounds, imagines that gratification will follow. This is the state of mind in a child which screams and kicks to get its own way. The condition recurs in adult life in varying degrees of crudity. Witness the magic rites of savages, the prayers of "civilised" human beings, etc.

In conflict with the hostile forces of the real world, the

growing individual gradually abandons his fantasies of omnipotence. But few succeed in liberating themselves entirely. The pleasure principle is ever on the watch to assert itself and to banish reality from our vision.

Our adaptation to reality, and especially to social reality, is paid for by the sacrifice of many of our desires and instincts. It involves restraint of immediate motor discharges; in other words, it involves repression.

## § 49.

Repression is necessary if organised society is to exist. The classical case is that of the sex urge. Society is so afraid of it that it has fenced it in by innumerable restrictions and taboos. If full vent were given to the sex urge, most energy would be dissipated in that way and little would be left for other purposes. The vast majority of human beings would be "wasters." After the revolution, Lenin had to oppose the exponents of the "glass of water theory" of sex life who claimed full sexual liberty for the Communists and who maintained that no more significance should be attached to the sexual act than to the drinking of a glass of water. Lenin's main argument was that it was the task of Communists to build up a classless society and that sexual restrictions were necessary in order to maintain the energy and drive necessary for this achievement. In a former period, strict repression of the sex instinct gave the Puritans the energy required for building up capitalism and extending its realm all over the world.

In capitalist countries, the sex instinct is repressed in three directions: (1) Owing to a great number of restrictions on mating, people cannot give full vent to it and many obstacles are put in the way of sexual satisfaction. (2) Education and religion tend to couple sexual desire with feelings of fear and guilt. (3) Few manifestations of the sex instinct are public, as regards either speech or action.

Although a certain amount of sexual repression is socially necessary, the method of repression in capitalist society is unscientific, and leads to much unhappiness and mental disorder. The emotions of fear and guilt poison the minds of millions.

## § 50

After a desire has been repressed, it does not vanish into the air. It tries to come out again. We can illustrate this by an example. Let us assume that a boss

**The Consequences of Repression** shouts at one of his employees. The employee is naturally annoyed, and would like to shout back. But he

suppresses his desire to tell the boss to shut up. In psychological terms, he represses his aggressiveness. But, though and because it could not manifest itself, the aggressiveness still lurks in his heart. He comes home, is "in a bad humour" and looks—more or less unconsciously—for an outlet for his aggressiveness. His wife is astonished to be suddenly shouted at, for no apparent reason. After that, he feels better, is relieved because the aggressiveness has—at least partly—come out. The wife, if the weaker of the two, may repress her anger and irritation for the moment, to vent it on the child later on. The child may, in turn, take vengeance on the cat.

A repressed desire continually seeks for a new outlet. Suppose that the maternal instinct is repressed through lack of its *proper object*, children. The instinct then looks for a new outlet, and for a *substitute object*. Cats, dogs, and parrots may serve as a substitute object for maternal care. In this case, however, the substitute object does not fully satisfy the original want, as witness the spinsterish attitude of the persons concerned.

The proper objects of the hunting instinct are animals. If, in big towns there are no animals to be hunted—except perhaps rats and flies—substitute objects are sought for; stamps and crossword puzzles furnish substitute objects and supply substitute satisfaction, as explained in § 41.

We have already shown to how large an extent sublimation is responsible for the upkeep of civilised life (§ 44). In addition, we may mention that play is an important outlet for unsatisfied instincts and desires.

There are various theories as to the nature of play, a mode of behaviour common to man and lower animals.

It is unnecessary to discuss these theories in detail. The satisfaction which organised games and sports yield originates,

according to Adler, from the desire for conquest or for possession, from the will-to-power. In vicarious trials of skill, like watching football, the individual, by a process called *personation*, puts himself in the place of the players, and enters into their triumphs and failures. A like personation is practised by a girl reading a novel when she identifies herself with the heroine, or by a lad at the cinema who pictures himself as the hero of a ganster film. The gratification derived from watching pageants, royal processions, etc., is also largely dependent on personation; the spectators imagine themselves in the place of the great ones who parade before them and receive their ovations.

In civilised society, organised games are used to work off the tensions originating from primitive instincts (in especial, pugnacity and the sex instinct) the unrestrained and unmodified manifestations of which would be embarrassing in a modern community.

Thus discouraged, the repressed contents of our mind crop up in those spheres of activity in which they are outside the direct observation of society. That is why the study of *dreams* has yielded so much knowledge of the unconscious. When we dream, we are alone, and consequently our minds are less repressed. Numerous repressed desires manifest themselves, although usually in a distorted form.

## § 51

The extent to which our mental life is unconscious—i.e., repressed—is usually underestimated, but it can be visualised clearly by realising the size of the social institutions which are built up by our repressed energies. The gigantic edifice of modern society is almost in its entirety a superstructure erected with the energy derived from the unconscious. This shows us indirectly that at least ninety per cent. of man's mental life is submerged in the unconscious. And because all the more serious work of society—production of goods, religion, art, science, politics, etc.—fails to satisfy the insatiable drives of human beings, we starve mentally without a certain

amount of amusement. A government which fails to give amusement to its citizens cannot survive for long.

The way in which for instance the cinema gives us a substitute satisfaction for repressed desires is a fascinating study. The sex instinct, the will-to-power, snobbishness, the joy of obeying, the love of adventure—all these and more find a regular outlet when we contemplate the screen. A socialist movement is psychologically sound only if it provides an outlet for all or most of our repressed instincts. In this respect the Bolshevik party is far more successful than the Social Democratic parties.

## CHAPTER XV

## THE UNCONSCIOUS

## § 52

We do not know what consciousness is, and will not therefore waste time attempting to define it. We experience it as the sum total of our sensations, emotions, **Consciousness** desires, memories and other psychic phenomena. We experience it only when we can recall some sensation, emotion, etc.; in other words, when the *associative memory* is working.

For each individual the only positive knowledge of consciousness is derived from introspection of his own mind. Since consciousness is a function of associative memory, it is reasonable to suppose that, when this exists in the animal, some germs of consciousness exist; and that the ancestry of man, if we could trace it back far enough through the animal kingdom, would show us a complete series of steps between apparently unconscious creatures and the highest human type.

We experience consciousness as a continuous stream of successive states of mind which are always changing, but are linked together as parts of one unbroken whole. Consciousness is not "impartial." It selects some and rejects others of the objects presented to it.

To awaken consciousness, a stimulus must have a certain intensity. If you tickle the flank of a sleeping dog gently, the stimulation will excite scratching movements, but the dog will remain asleep. Similarly you can tickle a sleeping person and produce reflex movements without arousing consciousness. There is, as it were, a step over which the stimulus must climb, to "enter the house occupied by the ego." This resistance is picturesquely called the *threshold*.



## § 53

The ordinary functions of the body, like breathing, can take place without our being aware of them. Most of the workings of the nervous mechanism on which our behaviour depends take place unconsciously.

**The Unconscious** Each of us has an immense store of unconscious memories, habits, complexes, etc., which play a large part in determining behaviour; and also a store of primitive inborn tendencies which operate without entering the field of consciousness. This part of the mechanism of behaviour is called the subconscious or unconscious. It is a sort of "hidden hand," constantly shaping our behaviour without our knowledge. Goddard illustrates the relation of the conscious to the unconscious by the analogy of the iceberg, of which nine-tenths are submerged, and only one-tenth is visible.

The unconscious is dominant when we perform activities which do not involve thought; it is always at work, influencing our actions without our knowledge. It takes complete charge when the rational and moral control of the mind is withdrawn, as in states of great emotion. It is regarded "as embodying the lower and more obviously brutal qualities of man," those which mattered most when man was in the biologic phase of his history.

"It is irrational, imitative, credulous, cowardly, cruel and lacks all individuality, will, and self-control. This personality takes the place of the normal personality during hypnosis and when the individual is one of an active crowd, as, for example, in riots, panics, lynchings, revivals, and so forth."—(Trotter, *Instincts of the Herd*, p. 26).

Into the unconscious are driven those thoughts and tendencies which convention forbids us to admit or acknowledge, for reasons of shame, self-esteem and the like. Especially is this the case with the sexual instincts, which, having in many cases to be severely repressed, often operate entirely in the unconscious, and pass the threshold of consciousness only in camouflaged and unrecognised forms, such as religious fervour, hysteria, insanity, etc. The enormous part the unconscious plays in human affairs, its responsibility for shaping character, its immense significance as a factor to be taken into

account in propaganda, constitute the special revelation of the New Psychology.

## § 54

Our knowledge of the unconscious sources of behaviour has been mainly derived from the method of investigating the mind known as *psychoanalysis*. This **Psychoanalysis** is a study of what we called just now the "submerged" nine-tenths of the mind, and of the effects of the unconscious on behaviour. It proceeds by the same scientific method as that by which the chemist and physicist study the relationships between material phenomena. It deals with the *phenomena* of consciousness without concern as to the ultimate *nature* of consciousness. (Owing to the limitations of language and the way in which psychoanalytical knowledge has come into being, we cannot avoid the seeming paradox of talking of the unconscious as a part of consciousness-in-the-widest-sense. At any rate the unconscious is a part, and perhaps the most important part, of the *mind*.) By conversation with, questions addressed to, and examination of the dreams of, the subject, the psychoanalyst is able to reveal (to himself, to the subject, and to others) the subconscious motives which underlie the behaviour and thoughts of the conscious personality.

## § 55

In many cases the habit or complex which is the determining factor in behaviour is buried in the unconscious, and not easily open to examination, much less to personal introspection. Especially is this so in cases where the emotions, instincts or experiences embodied in such a complex are of a kind incongruous with other complexes in the same individual. Such a case was the "complex" underlying the behaviour of the ex-Sunday-school teacher, described in § 2. This complex, embodying the painful experiences of thwarted sex, and anger towards a successful rival, was out of keeping with the habits he had acquired as member of a modern

civilised community. He could neither forcibly abduct the girl, nor assault or kill the man, as his savage ancestors would have done, and as the inborn nature inherited from those ancestors unconsciously prompted him to do. Consequently these feelings secured an outlet in attacks on the religious system which had been the former bond between himself and his rival; his actions were directed against that; and he rationalised these actions, that is to say, unconsciously invented other reasons to which he attributed them.

Sex complexes, built up around the powerful sexual instincts which are a necessary part of man's animal nature, are particularly liable to come into conflict with the conventions and restrictions of civilised life and to be repressed into the unconscious, there to influence our behaviour in all kinds of unexpected and unrecognised ways. Again, we may have complexes built up round such circumstances as a bodily ailment or defect, ill-health, weakness; or resulting from failure in life or subjection, or being "nagged" at; complexes the real cause of which we unconsciously strive to keep out of our minds as unflattering to us.

## CHAPTER XVI

### COMPLEXES, INTEREST AND ATTENTION

#### § 56

Complexes shape action in all the more complicated social conduct of man. They are the mechanism through which the forces of man's economic environment mould his behaviour; and in virtue of which the habits, the thoughts, the political, social and religious aspirations and institutions of a community of men are determined by the conditions under which they get their livelihood and reproduce their kind. They are built up out of the innate tendencies, reflexes, instincts, emotions, etc., which become grouped together and associated with experiences and ideas acquired by the individual through the action on him of his environment. They are, in normal individuals, constantly being modified by experience, that is to say, by the influence of the environment.

The more closely human behaviour is studied, the more clearly do we realise the enormous part played by complexes. A *complex* may be defined as "a system of connected ideas, with a strong emotional tone, and a tendency to produce actions of a certain definite character." (Trotter, p. 61). The word *constellation* is sometimes applied to a complex of which the subject is fully conscious, to distinguish it from a repressed or unconscious complex.

The collective outlook and aspirations of a group of persons, public opinion, class-consciousness, etc., are the expression of the dominant complexes of the individual members of the class or group.

To illustrate the way in which a complex influences the behaviour of the person in whom it is present, we may take the simple case of a man with a "hobby" for photography. If I have such a hobby, my flow of consciousness will be constantly liable to be affected by this complex.

"Scenes which would otherwise be indifferent to me will frequently arouse interest as possible material for a picture; if I peruse a newspaper an article upon photography will at once arrest my attention and when I meet my friends I shall probably seize every opportunity to turn the conversation to my favourite pursuit."—(Bernard Hart, p. 81).

On the other hand a person without the photography complex is likely to be bored stiff by my enthusiasm for the subject.

Where a complex is very powerful, so as to exclude all conflicting complexes, we speak of it as a "passion."

"If directed towards some present aim, we usually say that it 'destroys the will,' because it successfully resists the inhibitive actions of every other affective tendency (complex) with an aim in the future; while if its own aim be in the future towards an 'ideal' which may barely be attained even by the effort of a lifetime, we then say the individual is 'tenacious,' 'obstinate,' 'unyielding,' 'endowed with a will of iron,' because every other affective tendency with an immediate aim in view dashes itself against it in vain."—(Rignano, *Essays in Scientific Synthesis*, p. 125).

### § 57

Any strongly-established complex makes us receptive for stimuli which are in harmony with it. It shuts the door on incongruous images. Our mind would be over-crowded by the infinite number of stimuli, if it did not select among these stimuli. Our mind likes to dwell on stimuli which evoke *interest*.

We are interested in things only if in some way they satisfy our emotions and impulses, if they evoke some pleasant sentiments in us. A good golfer is more likely to be interested in golf than a bad one.

On the other hand, if some subject is associated with unpleasant experiences in our early life, we can take no interest in it. In this way, many persons take no interest in mathematics because in their school days this subject was the cause of feelings of inferiority and defeat. Some workers have no interest in economics because the study of this subject reminds them continually—largely unconsciously—of the experiences of degradation, fear and anxiety which they encounter in their economic life. They are far more likely to take interest in things which are free from unpleasant associations like cinemas,

football matches and pubs. In extreme cases there are people who can take no interest in anything whatsoever because of their all-round disappointment with the world. A dislike for "taking trouble" may also be an *active* cause of lack of interest.

We can have interest in something only if it *means* something to us. It is one of the worst curses of capitalism that it has robbed millions of any conceivable interest in their work. Millions are not exploited in the economic sense alone. They are also being starved mentally because they are deprived of that joy in work which comes from interest and from the feeling that one is creating something. A good deal of the neurosis which is observed among workers of the rationalised factories is due to this starvation of their minds by a deadening and monotonous job. (Henry de Man studies this subject exhaustively in his *Joy in Work*).

### § 58

Interest is one of the major factors in determining attention. We pay attention if we take up an attitude that will facilitate our response to some particular stimulus or **Attention** stimuli. There are some stimuli to which we attend without any appreciable effort, easily and automatically, when they appear.

In this case we speak of *involuntary* attention. It is mainly governed by spontaneous interest. Persons to whom motor-cycles mean something will pay far more attention to motor-cycles in the street than wireless fans would do. Of all the stimuli, those get most attention which mean most and appeal to some instinct or emotion. These emotional trends will produce what we may call "attention habits."

"In the middle of the night the physician will often hear the telephone or the door-bell although his wife will not; while on another night the wife will be awakened by the crying of one of the children, but the husband will sleep peacefully on. A telegrapher often nods at his desk, but let his particular call signal come over the wire and he is quickly attentive."—(Dashiell, *Fundamentals*, etc., page 291).

But interest is not the only factor that governs involuntary attention. Intense stimuli, such as loud noises, force themselves on a person's attention. It is one of the main tasks

of advertisers to find stimuli which arouse involuntary attention. Also socialist propagandists should devote more study to this question.

Attention is, of course, not a purely mental act. Like every other mental activity it is accompanied by bodily changes. The body adopts a certain posture. We adjust the receptor mechanism, the eye and the ear, etc., for the better sensing of the stimulus. Breathing and pulse are accelerated. The muscles contract, as can be seen clearly when watching a dog in front of a rat-hole. The muscles are so restrained in attention that in a class we rightly suppose that anybody shuffling the feet, drumming on the desk, stretching and yawning is inattentive. If the whole class is attentive, we say that "one could have heard a pin drop." No movement takes place and the muscles of the body are contracted.

In the above paragraphs we have treated interest as a function of the emotional strength of the instincts involved. As life became more complex in the course of evolution, and the number of stimuli to which the organism had to react became greater, situations arose, as they arise every day in our experience, in which it was essential for the survival of the organism that the reaction which takes place should not be a blind obedience to the most insistent instinct in the field but should follow an emotionally weaker instinct. This effect is secured in man and the higher animals through the mechanism of associative memory. These associations (experience that certain causes produce certain effects; acquired knowledge of public opinion; ideals or images of conduct which are built up from experience of the conduct of others; traditional knowledge imparted by education, etc.—in other words, the reality principle) unite with the "weaker" instinct to form a complex or a habitual line of thought which is prepotent over the emotionally stronger instinct. When such a complex holds the field against rival complexes and excludes them, we call the consciousness which accompanies the action *voluntary attention*. It is characterised by a sense of effort and by a feeling that we are exercising our wills; whereas interest and involuntary attention are accompanied by a pleasurable feeling and manifest themselves in behaviour by increased activity, eagerness, perhaps singing or whistling at work, etc.

## § 59

*The intellect is above all things an instrument of partiality.* Its function is to secure that those actions which are beneficial to the individual or the species shall be performed, and that those actions which are less beneficial shall be inhibited. In the sphere of consciousness its function is to secure that those images which are congruous with a desirable course of action shall be awakened, and that those which are incongruous shall be excluded. The congruity of an image with the end to which conation is directed, ease of association, determines the awakening of interest.

"When any strong emotional state whatever is upon us, the tendency is for no images but such as are congruous with it to come up. If others by chance offer themselves, they are instantly smothered and crowded out."—(James, *Psychology*, p. 451).

We are inevitably biased in all those questions which affect our personal conduct or the interests of our social group. The dangerous form of bias is narrow-mindedness. Narrow-minded people are so little certain of their convictions that they do not dare to expose them to the test of facts. They are intolerant, and easily made angry or "shocked." We should try to acquire a broadminded bias which is so sure of itself that it can hear the reasons and facts of its honest opponent with equanimity.

## CHAPTER XVII

### DEVICES OF THE UNCONSCIOUS

#### § 60

We have already seen that when an unconscious complex influences action, the mind invents reasons to which it attributes that action. We have called this process *rationalisation*. In consequence of the process of rationalisation, a man who has a powerful dominating complex is logic-proof. The arguments or reasons

#### **Rationalisation of Unconscious Impulses**

with which he supports his own view seem to him unanswerable. But, most of all, he believes that those arguments are the reasons why he thinks as he does. He is apt to be angry if told that his attitude is irrational, based on a complex the dominant features of which are his brute instincts and emotions, and that he has (unwittingly) adopted or invented his "reasons" to flatter his illusion that he is a rational being.

The party politician's verdict on any measure is determined by his habitual system of ideas, by his *political complex*. He fits his opinions to this complex independently of the merits or demerits of the case. Arguments in support of his outlook seem convincing; arguments unfavourable to it appear worthless. He continues to think that he reaches his conclusions by reasoning, whereas in reality he follows the urge of party bias and is the victim of rationalisation.

In the war of 1914-1918, when emotions of fear and hate with their conative accompaniments were extraordinarily intense, there was prevalent in each country an utterly non-rational attitude towards the problem: Who began the war? and towards the question as to which of the belligerents were to blame. On these matters, most people were armour-proofed against argument. The members of every nation were confident that their own cause was just, and that the enemy's motives were atrocious. As Trotter puts it, "each side defended its cause with arguments perfectly convincing to itself

### DEVICES OF THE UNCONSCIOUS

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and wholly without effect on the enemy." Such were the salient characteristics of the war complex.

#### § 61

Instances of rationalisation abound in private and social life. In thousands of cases we find a discrepancy between the real and the pretended motives of a person.

#### **Examples of Rationalisation**

Rationalisation is a result of a person's incurable desire to appear more respectable and unselfish than he or she is. A woman likes dancing; she may pretend that she dances for the sake of exercise; actually, dancing serves as a masked gratification of the sex instinct. A man plays cards and insists on playing for money; his reason is that he wants to keep the game serious; as a matter of fact he hopes to win money. A middle-class individual has an accession of wealth; his wife tells everybody that their son will now go to Oxford "because a Varsity training is quite necessary to secure a position of any worth." This may be true, but in addition she had a second motive which she confesses only to herself and her husband. To speak of "John being up at Oxford" would greatly impress Lady Mountthistle, "with whom we must now really become acquainted." Charitable work may be occasionally due to a sincere desire to help the poor. Often a person pretends to care for the poor but actually aims at social superiority or at basking in the unctuous righteousness of doing good. The charity is swank. Parents often illtreat their children because "it is good for them." They often add, when punishing: "It hurts me more than it does you." As a matter of fact, they punish to give vent to their repressed anger about their poverty and the restraint in which they live or about some difficulty connected with their business.

Of special interest to socialists are the rationalisations of social groups, which we may call *camouflage*.

In warfare, guns, ships and tanks are disguised by obscuring their outline with splashes of various colours; smoke screens are also used. Camouflage in propaganda is one of the most powerful and effective weapons in wars between nations or classes.

Karl Marx was one of the first to draw attention to the prevalence of camouflage in social life. He calls it "ideology," and he regards as "ideological" all those ideas which veil to social groups the real motive powers which lead them to think and to act as they do. Marx found that social groups, when fighting for their material interests, rarely state them openly and prefer to conceal them, invoking abstract ideals like Nature, Reason, the Good, the Right, Justice, Democracy, Freedom, Religion and Civilisation. Marx claimed that throughout history men had deceived themselves about the real motives of their actions. The materialist conception of history\* for the first time tore off the veil of false pretences with which men used to cover their actions. By propounding this theory Marx placed the study of society on a sound scientific basis and revealed material interests as the true spring of the actions and thoughts of social groups and classes. Marx refused to be duped by the high-sounding talk which usually accompanies the making of history. He showed that only if it never loses sight of the material interests behind such talk can the working class reach a correct interpretation of social events, and that a correct interpretation is the indispensable condition for a working-class victory.

Most people, in their desire to appear better than they are and to conform to the moral standards accepted in their social circle, justify selfish actions to themselves and to others by a pretence of disinterestedness and self-denial. Modern psychology has made it amply clear that the motives we believe we have, have usually only a loose connection with the real forces that actually cause our thoughts, feelings and actions. During the last thirty years the efforts of psychologists have for the most part been devoted to trying to devise ways of looking behind the mask with which people unconsciously cover their real motives. Only in this way can the study of the human mind be put on a scientific basis. (See above, Chap. XV, The Unconscious).

It is a matter of common observation that people who want something pretend not to want it for themselves but in the interests of some social group or of some high-sounding ideal.

\* See *Marxism and History*, 1/1 post free.

In the 19th century it was a common practice to say "religion" when one meant "cotton." Defeated in the General Election of 1935, the Macdonalds demanded safe seats, not for themselves and their own benefit, but for the good of their country. If capitalists want tariffs or subsidies from the Government, they profess to desire these privileges, not for themselves and for their own profit, but for their workers, for the good of Britain, and in order to relieve unemployment. The armament manufacturer's desire for profits is cloaked in concern for the safety of his country. As Undershaft says in Shaw's *Major Barbara*:

"When I want anything to keep my dividends up you will discover that my want is a national need. . . . And in return you shall have the support and applause of my newspapers and the delight of imagining that you are a great statesman."

Now, G.B.S. cannot help picturing people as cynics. As a matter of fact, however, it is only through complete disappointment with life that people become cynics. Most individuals are not completely disappointed and retain a certain amount of faith in humanity. Conscious hypocrisy is comparatively rare. Contrary to popular belief, few people are capable of permanently pretending to have certain views and moral standards, while being conscious all the time of their utter lack of belief in them. The majority of people are honest in their hypocrisy. Pretending has become so much a part of their nature that they do it without any effort and without the consciousness of being hypocritical.

A "disinterested" attitude is usually taken up—quite spontaneously—just by those imperialists who prosper most. To hide one's true intentions and to conceal one's true motives is in fact an indispensable element of the imperialist game.

Consider the war of 1914-18. No informed person doubts that it was an imperialist war. On the side of Britain, the following *material interests* were involved—Germany's threat to India by the Bagdad railway; German naval rearmament; German goods driving English goods from the world's markets; and finally Germany's threat to establish herself on the Belgian coast. But the statesmen of the British Empire drew a veil of *unselfish motives* over these material interests, and the masses of the Empire "fell for" their deceit. They

marched "to defend poor little Belgium," "to make the world safe for democracy," "to defeat German militarism," "to safeguard the sanctity of treaties," and "to establish peace on earth."

Who now, twenty years later, in full view of all the results of the war, does not fully agree with the words which John Bright spoke in 1878:

"It is a painful and terrible thing to think how easy it is to stir up a nation to war. Take any decent history of this country, from the time of William III. until now—for two centuries, or nearly so—and you will find that wars are always supported by a class of arguments which, after the war is over, the people find were arguments they should not have listened to."

Every historian must be struck by the regularity with which this sort of thing recurs throughout the history of imperialism. At different times the sauce with which wars are served up varies with the fashion of the time. But "unselfishness" and "idealism" invariably are the sauce's main ingredients.

We take our illustrations from the history of British imperialism because to English readers it is familiar and needs less explanation of historical details. When the British imperialists fought against Napoleon, they did so for "the deliverance of Europe." In the end the deliverance of Europe amounted to delivering it into the hands of Metternich. Forty years later, the Crimean War was fought in order to check an expansion by Russia into those Asiatic territories which Britain had reserved for herself. But Richard Cobden noted in a speech at the time (22nd Dec., 1854) that the real question had been "very much mixed up with magniloquent phraseology." He reports that people "spoke of our duties to mankind and the whole world," talked about their intention "to protect the liberties of all Europe and of the civilised world," and, in the best style of their Roman predecessors, pretended to fight for the defence "of our ancient ally" (Turkey).

#### § 62

Rationalisation is the most important of the various ways in which the mind solves the conflict between disharmonious

complexes or groups of complexes. Other methods of solution, however, demand consideration. One of them is termed *dissociation*. **Dissociation to solve Conflict of Complexes** When two incompatible complexes are present, a certain type of mind gets over the difficulty by avoiding all contact between them. The mind dissociates itself into "logic-tight compartments." No conflict arises; the beliefs and the facts live in separate compartments of the mind, and are never permitted to come face to face in the field of consciousness.

Complete consciousness involves the possibility of every state of mind being associated directly or indirectly with the rest. When a part of consciousness becomes detached from the rest we speak of the *dissociation of consciousness*. The dissociated part of consciousness may then lead an independent life unknown to the individual and cut off from his control.

The exploits of Woodrow Wilson in the war and at the Peace Conference, quite unnecessarily attributed by some to calculated hypocrisy, are a good example of the behaviour of a man in whom the logic-tight partition between a self-righteous "Christianity" complex and a "capitalist politics" complex led to the most amazing inconsistencies in behaviour. *Conscious* hypocrisy, we repeat, is rare.

In extreme cases dissociation splits the mind into two watertight compartments. In somnambulism and in pathological cases of "dual personality" or multiple personality there is such a discontinuity. The oft-quoted case of the Rev. Ansel Bourne may be cited as an example:

"On January 17th, 1887, the Rev. Ansel Bourne, an itinerant preacher, drew a considerable sum of money from a bank in Providence and then entered a tramcar. This was the last incident he remembered. He did not return home that day, and nothing was heard of him for two months. . . . On the morning of March 14th however, at Norristown, Pennsylvania, a man calling himself A. J. Brown, who had rented a small shop six weeks previously, stocked it with stationery, confectionery, fruit, and small articles, and carried on his quiet trade without seeming to anyone unnatural or eccentric, woke up in a fright and called in the people of the house to tell him where he was. He said that his name was Ansel Bourne, that he knew nothing of shopkeeping, and that the last thing he remembered—it seemed only yesterday—was drawing the money from the bank in Providence."—(Bernard Hart, p. 49).

Cases where there are frequent interchanges between the two "personalities," or even between several dissociated "personalities" in the same individual, are not uncommon. Some of the cases of "mediumship" exploited by spiritualists are examples of this kind. A person playing the piano, and at the same time thinking about something else, effects a temporary dissociation of consciousness. People whose minds work in "logic-tight compartments," like scientists who believe the creeds and superstitions of the churches, or religious people who are crooked in business or depraved in their sexual morals, effect such a dissociation between two rival systems of ideas (complexes) in their consciousness. Like Stevenson's Jekyll and Hyde, they have two distinct "personalities" or "souls," which are in charge of their behaviour at different times.

## § 63

The man with a repressed complex may adopt a course of action in the direction opposite to the urge of his complex, in order to conceal it. Instance the man who jokes  
**Sanity** to conceal sorrow; the soldier jesting and singing to mask fear as he goes into action; the shy man affecting boisterous geniality; or a woman whose sex complex, repressed by the exigencies of civilised life, manifests itself in an exaggerated prudery coupled with morbid interest in births, marriages, and scandals. The repressed complexes thus find indirect methods of influencing the personality. Certain well-known cases of celibate priests and bishops who delight to talk about the birth rate, women's dress, modern dances, etc., in their sermons, also illustrate this phenomenon. It is termed *inversion*.

The failure of any of the socially recognised methods of solving a conflict between incompatible complexes may result in *insanity*. The difference between the rationalisations, dissociations, and repressions, which occur in every normal person, and those which constitute insanity, is one of degree rather than kind.

We are disposed by our innate rationalising tendency and our unwillingness to acknowledge the instinctive and emo-

tional basis of most of our actions, to speak of insanity as "deranged reason"; whereas, really, the disturbances have their roots, not in the intellectual, but in the *emotional* (or instinctive) sphere. The ostensible derangement of reason is the secondary rationalisation of phenomena which in their origin are emotional and constitute the basis of the dominant complex.

There is a complete series of intermediate stages between the zealous party politician, or the religious crank who expects the world to be destroyed in a particular year, and the asylum inmate who, perfectly rational in other matters, believes himself to be the Kaiser, John D. Rockefeller, or the unpardonable sinner. Logic is futile as a weapon against the complexes of either class.

The whole difference is that the ideas of the one meet with social approval, whereas the ideas of the other meet with social disapproval. The lunatic of to-day may be the prophet of to-morrow. There is only one scientific definition of a "lunatic": A lunatic is a person who is put into a lunatic asylum, in other words, a person who is unable to fit into the existing system of society, and who is not disposed of by being put into a prison. Whether a person is a lunatic or not depends largely on his social position. A worker who under no circumstances can open a door is a lunatic. A rich man is not, because he can hire somebody to open doors for him.

The supreme social test of sanity is *conduct*, which in a class society means conduct that does not run athwart the interests of the ruling class. Under fascist auspices, however, rulers are uneasy about "dangerous" *thinking* as well as about "dangerous" *behaviour*. In any case, the student of psychology should always remember that sanity is relative and a question of control. "What is sanity but the control of our universal insanity?" (From the novel, *Now in November*). Let the student apply these considerations to himself as well as to others.

## § 64

In many cases the conflicts caused by the repressed impulses in the unconscious become so intense that the victim ex-



**Neurosis and  
Insanity**

periences difficulties in adjusting himself to the requirements of his social environment. In milder cases we then speak of a neurosis; in more severe cases, of insanity.

A neurotic usually shows four characteristics:

1. While the normal person takes reality into account when he acts, the neurotic is out of touch with reality; he is prone to lose sight of it, and he sometimes deliberately shuts his eyes to reality.

2. The neurotic is very much preoccupied with himself. Our mental health depends upon the capacity for forgetting ourselves in social life, and participation in great or small social movements and ideas.

3. His mental conflicts are especially painful. They take up much of his energy and he is unduly hampered by his repressed emotions and impulses.

4. Neurotics are specially liable to states of anxiety. It is often impossible to draw a sharp dividing line between neurosis and insanity. Some neurotic cases are on the border line of insanity and it may be difficult to decide where the one ends and the other begins.

## CHAPTER XVIII

## CHOICE AND FREEWILL

## § 65

In all the more complicated forms of behaviour (those termed intelligent, rational, voluntary and so forth), a mechanism is at work comparable to that described "Choice" in chapter IX, in the case of a man catching a train.

Take the following case. A man in love (*i.e.*, with a powerful sex complex ever ready to influence his behaviour) may find his mind so full of his beloved that he is unable to concentrate on his work, say the casting of accounts for an employer. There is a continuous conflict between the love complex (which has its roots deep down in the sex instinct and the tender emotion) on the one hand, and his "work" complex (perhaps a combination of mental habits involving ambition, desire for personal advancement, the instinct of craftsmanship, a habitual sense of duty, fear of "the sack," and the instincts of maintenance and self-defence, reinforced by memory of unemployment and hunger) on the other. If his "working" complex should triumph over the insistency of sex, a sense of effort may accompany the banishment of the emotionally coloured day-dreams about the girl and we speak of the subject as having "will" and "character." If the day dreams should prevail, we say he has a weak will, or that his will has failed him. In the latter case, as a result of a visit from the boss, a scolding, and perhaps a threat of dismissal, the emotion of fear might so reinforce the "work" complex that the man's vision of his sweetheart would be effectively banished from his mind for the rest of the working day. The choice is determined partly by the relative strengths of the two conflicting complexes, partly by the external influences of the moment which go to reinforce one or the other. If, instead of being rated by the boss, he caught sight of the girl through the window, the weight might be thrown on the

side of love instead of on the side of work or fear. This theme has been ably and picturesquely treated by Miles Malleon in a dramatic sketch entitled *The Little White Thought*, published in 1920.

A rather more complicated instance is that of a class-conscious worker, whose affection for wife and children conflicts with zeal for the revolutionary cause. Normal family instinct impels him to devote his leisure time to home, that he may help his wife in the arduous work of the house, may till an allotment to eke out the food supply, and in general play for safety. This conduct will earn the approval of the bulk of the human herd and will win the applause of such buttresses of capitalism as the organised churches. An opposite pull is exerted by the revolutionary complex, with its multiple claims on his time. At bottom, this likewise is based on non-rational and instinctive impulses, fortified by ideals of a better social order and by theories and knowledge as to how such a social order is to be brought about. It may lead him into courses which will involve privation and suffering for his nearest and dearest, unemployment for himself and great hardship for his wife and children should he be sent to gaol for his opinions. In such a case we can often watch the conflict of rival impulses throughout a long period, and can trace the gradual strengthening of one complex and the weakening of the other in response to changes in the environment. "Dangerous" men are often promoted by the master class, with the deliberate purpose of throwing the weight of greater comfort and security into the scale against the rebel complexes. We can all think of promising young rebels who have been "muzzled with gold."

Skilful analysis on these lines, in similar cases, will show us that there is no need to assume, and therefore no warrant for assuming, the existence of something called "will" superior to and independent of external influences and the motives to action arising out of a man's inborn temperament and acquired habits.

#### § 66

Because they feel that they have a certain power of choice and decision, many people infer that our actions spring from

#### Determinism and Free Will

something within us which is not a part of the chain of natural cause and effect, and which can initiate action independently of that chain. The delusion that the will is free or undetermined is also fostered by the form of self-deception which makes us think that actions resulting from emotionally-coloured complexes in the unconscious are the result of deliberate reasoning.

We stated at the outset that we adopted the determinist position as a working theory. It was unnecessary, we contended, to assume that the will is free, in order to explain, or to bring into line with our other knowledge, the facts of human behaviour and human thought. We could, therefore, afford to dispense with the freewill hypothesis.

Marxians do not pursue a policy of impartial inactivity until somebody arrives at absolute truth. They have to find effective working theories, and to apply these to practical life for the solution of urgent problems. A theory or hypothesis is not a "truth," the answer to some "divinely formulated world enigma," but a tool, a method, a tactic; a working diagram which helps us to understand part of our environment so that we can act upon that environment to our own advantage. For such a purpose it is needless to assume a free will; and as all objective study points to determinism in the realm of thought and action, we frankly accept determinism as a working theory.

"Chance has no more part in psychology than it has in physics. Every thought which flits through the mind, however casual or irrelevant it may seem to be, is the only thought which can possibly result from the various mental processes which preceded it."—(Hart, p. 60).

The word "will" as popularly used is a vague term covering several distinct qualities. These vary from individual to individual. Some of them depend on the hereditary nature of body and mind; others are acquired, with different degrees of success by different individuals, as the outcome of influences experienced during life. Among the inherited qualities are the intensity or otherwise of the conative trends, and the differing degrees to which different people feel the desire which accompanies the stimulation of an instinct. To the same category belongs the persistency of the conations or

desires. Thirdly, there is the effect of counter-influences. Thus pleasure and pain respectively strengthen and weaken conation in very different degrees in different persons. We call the people in whom they appear to have little effect upon conation "thick-skinned"; and those in whom they greatly diminish or inhibit it, "sensitive." The differences in the qualities of the inherited mechanism which makes associative memory possible is also a factor. One whose mental associations are deep and lasting but restricted in their range will be regarded as a person of "stronger will" than one whose mental associative mechanism is more impressionable and versatile. Persons of the former type tend to rigid habits of thought and action, habits which can be broken only by extensive environmental changes. The man who is least likely to succumb to temptation is, other things being equal, the man who has rigid habits of life and mind; the man who in choosing between his habitual line of action, and the claims urged upon him by an intruding impulse, not only follows the former without apparent or conscious effort, but is unable to conceive of anyone ever wanting to do otherwise.

*Reason and will are thus the static and dynamic aspects of the consciousness which accompanies action in which complexes built up largely around associations of conceptions (knowledge) triumph over complexes built up largely around associations of sensations (emotions).*

§ 67

A charge of inconsistency is sometimes directed against Marxians because they accept the M.C.H. (Materialist Conception of History) and at the same time advocate the deliberate use of the class struggle as the instrument for the overthrow of the capitalist system. This charge assumes that the acceptance of

determinism implies the acceptance of the doctrine that all human effort is futile. It confuses *determinism* with *fatalism*.

The materialist conception of history is the theory that the behaviour and thoughts of a society of men are determined by the material conditions under which, for the time being,

they get their living; and that these conditions are continually changing in an inevitable direction. At the same time the Marxian recognises the class struggle, the conscious striving of each class to increase its economic advantages, as the instrument by means of which revolutions, the transference of power from one class to another, are brought about. Now, say certain critics, here you have one theory which attributes the changes of history to the inevitable march of the economic process, and another which attributes them to the voluntary action of groups of men; you preach the former in theory, but advocate the latter in practice.

The confusion underlying this argument arises from the failure to grasp the full extent (connotation) of the "economic environment," as we see it. *The economic environment includes not only tools and material commodities: but also the knowledge how to use them and the theories and ideas with which man rationalises the material experiences of his daily life. Knowledge, theories, and ideas are tools. The multiplication table and the Darwinian theory are just as much tools as the foot-rule and the telescope.*

Without knowledge, an environment of tools is valueless. A motor car would be of no use to a tribe of wild Australian blacks. Their accumulated tribal knowledge would not include the knowledge of what to do with it. It would not therefore influence their behaviour and thoughts as the arrival of motors has changed the behaviour and thoughts of Europeans.

This environment—material, but involving also man's accumulated knowledge of how to use matter to his advantage—acts upon men and determines the habits of thought and action (complexes) which men form; these habits of thought, where they are fairly uniform in the members of a group or class, determine class-consciousness. The complexes the sum of which is class-consciousness direct the individual's unconscious strivings towards self-expansion into particular courses of action, certain of which constitute the class-struggle. What we call the will can thus be interpreted as the particular rationalisations that we associate with the actions by which, under this ever-present urge or drive of life (conation), we respond to our environment. *The object of Marxian education is to provide the knowledge which will secure that the habits of mind or complexes which we build up around this unconscious*

urge, and which determine the direction of its flow, shall be as nearly as possible true pictures, however imperfect, of our economic environment and our relations thereto.

The answer to the charge that, to be consistent, the Marxian should avoid effort and wait for things to happen, is that, in social and economic affairs many things happen only through the striving of man's living mechanism, by which he responds to changes in his environment. *The consistent determinist is not the man who denies the efficacy of this striving, but the one who endeavours, by acquiring knowledge, to bring his striving into harmony with the trend of economic events, and to avoid wasting it in unprofitable directions.*

The Marxian might even frankly admit the apparent inconsistency in his position; recognising the contradiction as a phase of the great master-contradiction of life, in which one part of matter appears to strive against the inevitable law of the degradation of energy. He would act in the present as if he believed his will to be free, but would criticise his own past actions, and lay his plans for future actions, on a basis which postulates determinism for the past, and recognises that, in the future, action, to be effective, must be in conformity with the necessary trend of economic and biologic events.

The difference between the inactive and indifferent fatalist (whose conation would however find another outlet somewhere, perhaps in boozing or betting or Bible-punching) and such a man, is the same as that between the monkish ascetic or Indian yogi and the man who follows Swinburne's call :—

To be man with thy might,  
To grow straight in the strength of thy spirit,  
and live out thy life as the light.

## CHAPTER XIX

## REASON

## § 68

Intelligence is the capacity to acquire and perfect new modes of adaptation through individual experience. It is the ability to learn from experience.

**Intelligence and Thoughtfulness** The word is also used to denote a person's ability to adapt himself to new situations. The more intelligent a person is, the more quickly does he adapt himself to new situations. A person is intelligent when mentally alert. This applies of course to animals as well as to human beings.

Intelligence, as we shall see, is inborn, but it can be diminished in the course of our lives by lack of encouragement.

There are people who, although not specially intelligent, usually do the right thing in an emergency. These are the thoughtful people who normally are not surprised by a new situation because they have thought out beforehand the possibilities and have previously decided how to act. A thoughtful person will, however, blunder and be unable to adapt himself rapidly if a situation arises which was entirely unforeseen—at least if he does not couple thoughtfulness with the gift of intelligence. Thoughtful persons are more steady and a greater asset to a movement than those who are so intelligent that they trust to their improvisations to get themselves out of tight corners—like Lloyd George during the Great War and the Peace negotiations of 1919.

## § 69

We think when we make inward experiments—imagining new situations and reacting mentally to them. Thinking often involves a reaction to "absent" stimuli. When we think, the object about which we think need not be spatially present. Most thinking is

based on what Binet calls *images*. The sensation produced by the sound of a shot leads to the mental image of a man firing a gun. The mind unconsciously completes an impression received by the senses; unwittingly it associates the impression with the memory of past sensations. This is *perception*. It involves two things: the stimulation of certain sense organs; and a reaction in the brain involving association, or associative memory.

When an image arises in the mind without the sense organs contributing fresh data, as when we "spontaneously" think of a man firing a gun, the process is termed *conception*. The recall to memory of such an image is *recollection*. When a perception involves a still larger contribution by the associative memory in proportion to the data contributed by the senses, we usually speak of *recognition*. I *perceive* the cat on the hearth; and, after some hesitation, I *recognise* a distant object as a cat. A *judgment* is the forming of an association between two images.

Goddard gives the following example of a judgment. On a winter morning white light reflected from all objects out of doors impinges on a child's eyes. He is told that the white something is called "snow." He forms a mental association between the sensation and the word; he has an image of snow. He has previously learned that various natural objects are cold; we say, therefore, that he has a concept (a remembered percept) of coldness. If, now, he handles some of the snow, a familiar type of stimulation is aroused by the passing of impulses from hand to brain. Through habit (associative memory) the concept "cold" is excited, and in the specific circumstances of the new experience this concept is immediately brought into connection with the concept "snow." The two concepts are henceforward so closely associated that for certain purposes they constitute one pattern. On the conscious side, this association is represented by the judgment "snow is cold." This is a direct association by contiguity. Further experience adds other judgments, as that "snow melts"; that "snow is frozen water"; that "snow falls in winter," etc.

In *illusion*, sensations received by the eye or other sense organ awaken images that have been linked with these sensations on a previous occasion but which are not parts of the

reality of which the sensations tell us. Hence an illusion is an incorrect judgment. For instance, if you cross two fingers and roll a pea or feel the bridge of your nose between them, mere sensation assures you that there are two peas or two noses. Such a mistake as hailing a stranger whom you take to be a friend because of the kind of hat or coat he is wearing, is of the same nature. Our rationalisations are simply complex illusions. The word *hallucination* is applied to a similar incorrect judgment in which the departure from reality is greater and more absurd; as when a patch of moonlight on the wall calls up the image of a "spook" or as in the visions of hypnotised persons or delirious patients.

In *imagination* the associative mechanism adds to the data of the senses by wide and elaborate associations. The most fantastic picture of an imaginary beast, angel, devil, or god, ever conceived by man, is simply a putting together of memories culled from various experiences (e.g., the Christian devil as pictured in old religious books, with a bat's wings, a bullock's hoofs, a goat's horns, a tail with a spear head at the end, etc.).

#### § 70

We reason when we arrive at a conclusion on the basis of facts and assumptions. Facts are facts only when tested and agreed upon by a number of persons. Reasoning is essentially a social activity, sterile without the co-operation of others. Reasoning is a slow process, whereas intelligence works rapidly. An intelligent man will often do the right thing but will be unable to give the reasons why.

#### § 71

We can distinguish two kinds of association—association by contiguity and association by similarity. In most cases the two ideas or stimuli of responses which are linked together in the association have been brought together under previous experiences, as "food" and the sound of a bell are brought together in the case of Pavlov's dog. This is

known as association by contiguity. It involves the direct association of two mental images or two actions or of an image and an action.

In the ordinary judgments of life we usually associate by contiguity; two whole images which have occurred together before are capable of recalling each other. A child which has seen a bottle uncorked by means of a corkscrew forms an association between the two leading to the generalisation—"A corkscrew will uncork a bottle."

When a dog or a horse learns to open a gate, the acquirement is the result of association by contiguity. A chance movement of the latch results in the gate opening and a direct association is formed between the act and the result. The animal profits by chance experience. This is quite different from the reasoning which adopts means to an end, with foresight of that end—the reasoning characteristic of man's higher mental operations—as when a man discovers how to work a new machine or tool by examining it and finding in it some point which it has in common with a machine or tool that he knows already.

Association by contiguity is the mental equipment of the "practical man," the "rule-of-thumb" craftsman. It is the basis of "commonsense."

### § 72

The words *reasoning* and *rational action* (including rationalisation) are generally applied to a more elaborate kind of intelligent action, which is practically confined to man (as contrasted with other animals). Reasoning involves a special kind of association in which two ideas not previously associated are brought together by the discovery of some point which they have in common. This is termed *association by similarity*.

All higher acts of reasoning depend on association by similarity. In association by similarity two images having some point in common are associated through that point. The common point must, in the mind of the reasoner, be separated

from the two images, or *abstracted*. The image which the reasoner separates off, which arrests his attention, is the attribute most useful to himself in the situation, as leading to action. *Reason consists in abstracting common elements out of concrete things.* (Dietzgen.) To abstract or identify a constituent part of an image we must have experienced that part elsewhere. We must have two images, each containing that part.

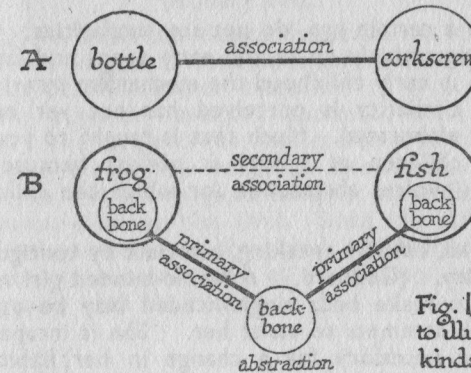


Fig. 15- Diagram to illustrate the two kinds of association

Fig. 15 illustrates diagrammatically the two kinds of association. The circles represent mental images; the lines represent associations of images. In A, two images, which have been associated in the past, become directly connected, so that if one is called up in memory, the other will also tend to be called up. In B we have two images, fish and frog, which have never been associated in the past. The mind abstracts or singles out a part of each of these images which is common to both, and forms from them the further image, backbone, by means of which it ever after associates fish and frog (subsequently bird, beast, man, etc.) as backboned animals, or vertebrates. The dotted line represents the secondary direct association, made possible by the primary or indirect association through similarity.

Think of other cases of reasoning by similarity. Think how you tackle a difficult problem such as repairing a machine

of which you have no previous experience; deciding which is the shortest way to get to a place where you have never been before; estimating the value of something offered you for sale; counting your change after a purchase, etc. You can trace this association by similarity, this abstraction of a common image, in each case.

## § 73

Children, below a certain age, do not see similarities; the capacity grows progressively up to the early teens and later. In early childhood the mechanism by which similarity is perceived has not yet been elaborated. Much that is taught to young children at school is useless because it involves abstraction for which the child is not yet ready.

The feeble-minded, broadly speaking, associate by contiguity but not by similarity. (Goddard.) A feeble-minded girl who has been taught to make beds single-handed may be quite helpless if someone attempts to assist her. She is incapable of the associations necessary for a change in her habitual procedure.

When a complex of sensations is experienced by a stupid man only such images are called up associatively as were connected before with the whole stimulating complex; in the intelligent man other complexes are called up associatively, complexes which are connected through association by similarity with elements of the stimulating complex.

Limited to association by contiguity, without reasoning or association by similarity, a man would never be able to do a job except in the particular way and with the particular tools adopted on the first occasion when he was taught to do it. We probably know not a few among our acquaintances whose power of forming associations does not extend much beyond this condition. They are the very dull people—people whose mental level is perhaps a reversion to the stage represented by our ancestors before they acquired the power of making tools—a living link between man and beast.

## § 74

The process of association by similarity often occurs in the subconscious. Thus the linking up of rationalisations with the repressed complexes which determine them may be completely concealed from our knowledge. We see the secondary association between two images but not the primary one.

Fig. 16 illustrates diagrammatically the kind of associations involved in such a rationalisation as that of the atheist ex-Sunday-school teacher instanced in § 2. The man has a strong pugnacity complex associated with the image of his rival. The image of his rival is also a part of the image embodying his former religious associations. The pugnacity complex and the religious complex are associated through the common element, the rival. Since this association is buried in the unconscious, the mind rationalises the action, *i.e.*, constructs another path of association, one linking up his pugnacity with his religion.

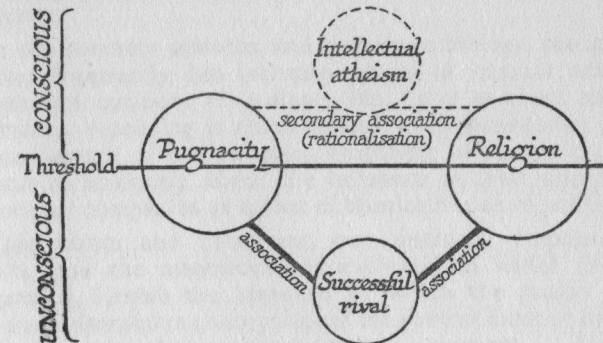


Fig. 16.

Our knowledge of the associations by similarity formed in the unconscious is largely due to the work of the psychoanalysts.

## § 75

Curiosity is accompanied by the emotion of wonder. It evinces itself in the desire and effort to investigate the object that excites it. We try to assimilate to past experiences any new experience; we try to make it fit into the "pattern" of what we know and to make it conform to our idea of what is "reasonable," i.e., what links on harmoniously with previous experience.

Curiosity and wonder may easily pass over into fear and flight. The conflict between these two instincts is familiar to everyone in horses, dogs, cattle, etc., when faced with something unusual.

## CHAPTER XX

## REASON (concluded)

## § 76

Reasoning and rationalisation shade into one another. Reasoning much biased by our unconscious desires is rationalisation; rationalisation informed with knowledge of the hidden forces at work in shaping our behaviour is reasoning. In perfectly rational action, if such a thing be possible, the individual is fully conscious of all his motives. Pure reasoning is most nearly reached in subjects like mathematics, for the inferences of these highly abstract topics are usually remote from the practical needs of daily life. The main motive for their study is the desire for pure knowledge—a form of curiosity.

In the concrete sciences, and notably in biology, the subject-matter frequently has intimate points of contact with the habits and outlooks of ordinary life; and in these sciences, therefore, reasoning is often tainted with unconscious desire. Indeed, much of the so-called reasoning of scientific men is almost as obviously under the influence of their unconscious emotional complexes as is that of theologians or of politicians.

Our wants and conations, our instincts, emotions and habits, and the associations (complexes) in which they are organised, furnish the standard by which the reason judges between alternative conceptions of the environment or between alternative reactions towards the environment. They are the channels through which conation asserts itself. Reasoning is an accompaniment, but not a cause, of action; it is the co-ordinating and harmonising agent, whose material basis is the mechanism of associative memory, in the highly specialised form it has attained in man.



## § 77

Reasoning is dependent on: (1) the inborn capacity to form associations (wisdom, sagacity); (2) the amount of experience accumulated by the individual (learning, knowledge). The combination of **Sagacity and Learning** produces the scholarly thinker; sagacity without learning produces the crank; learning without sagacity produces the pedant.

The degree to which a man is rational depends upon his capacity for forming associations (especially associations of the more complex kind); and upon his acquired knowledge or experience, that is to say, upon the extent to which his mind is stored with useful and well-organised associations (knowledge).

Given the necessary inborn capacity for forming associations, a man is most rational in dealing with matters on which he has most organised knowledge. Great scholars in particular branches of science in which their accumulated knowledge and skill make them world celebrities are often quite unreasonable when discussing matters, such as politics or economics, of which they have little knowledge. The behaviour of distinguished bourgeois intellectuals during a war or a crisis, the way in which their utterances in either camp are swayed by the respective national or class complexes—bourgeois or anti-bourgeois—shows to what an extent the power to reason is dependent on a wide knowledge of facts so organised as to outweigh in the associative complex the conation of the more emotionally-toned instincts.

## § 78

The rational man is the man who fearlessly tries to drag into the light all the mental elements contributing to his opinions; whose associations are numerous enough and sufficiently organised in systems to reinforce those tendencies which harmonise with the reality principle, with objective reality, and to inhibit those which appeal to the pleasure principle (the gratification of our

**The Criterion of Rational Behaviour**

instincts without regard to the consequences by which that gratification is followed in the world of reality).

The general decadence of bourgeois culture is probably connected with the failure of the reality principle and the gratification of the pleasure principle in the intellectual field. Bourgeois prophets must "prophesy smooth things" if they would not be hounded out of bourgeois society or killed by ridicule. The bourgeois environment determines the bourgeois outlook on life. Inability to face the facts of the present economic situation, and to visualise what its tendencies involve for them, will be one of the most potent factors in the coming downfall of the capitalist class. Latter-day bourgeois journalism, poetry, literature, art, drama, philosophy, science, and religion furnish ample evidence of this.

*The success of the proletariat in the class struggle will depend upon the extent to which proletarians are capable of facing unpleasant facts, and scrapping theories formulated in the days when socialism was in the utopian or pleasure-principle stage. It is the clinging to and rationalisation of these sentimental and emotional ideas that makes many of the reformist socialists far more dangerous enemies to the workers than are their declared foes.*

## § 79

The sum total of generalisations and associations concerning an object constitutes knowledge of that object.

Understanding is the power of knowing.

**Knowledge** The biological function or purpose of knowledge, as of all associative processes, is *action*; it enables us to recognise an object and to guide the instinctive action called up by the object.

The scientific method of investigation and thought is the antithesis of empirical judgment, which is the basis of most of the pseudo-sciences. In the main and primarily, the processes and tools we employ in scientific investigations are means for bringing to light similarities (and differences) imperceptible to our unaided senses or capacities.

## § 80

Language is an association between perceptions or images, whether of objects, actions, happenings, or feelings, on the

**Speech and Thought**

one hand; and certain sounds (speech), visual symbols (reading), or tactile sensations (writing), on the other. The basis of language is association. An experience or mental image, say the mental image of a dog, becomes associated with the sound of the word dog, with the sight of the written word dog, with the movements by means of which we pronounce and write the word dog, etc. In diseased conditions a person may lose the power of using one of them and retain the use of the others. The spoken word "dog" may then be meaningless, while the written word arouses the necessary association, or conversely.

Names enable us to communicate experiences to others. They facilitate thinking. They furnish short cuts in association; obviating the necessity of calling up each time all the attributes of the object or abstraction to which the name is applied. They are the distinctive labels we give to generalised images abstracted from the innumerable data offered by the external world.

Without some such mental shorthand as words provide most of our more elaborate mental associations would be impossible. A word is an abstract symbol; we can use it instead of having to recall all the particular associations in which the thing symbolised has occurred. *New words are invented to provide convenient symbols for new groupings or aspects of experience which we had not previously associated.* Thus the coining of new words occurs most frequently in subjects like the natural sciences, where new associations of experiences (knowledge) are constantly being effected. It is this faculty of words, enabling them to take the place of elaborate associations of experiences, which makes them a source of danger. Many persons use words without a clear image of what the words mean. Much so-called philosophy is merely empty words which represent no clearly-defined experiences at all.

Language and tool-making are the chief behaviour differences between man and beast.

Watson describes thought as silent language; the silent working of the speech mechanism, including the mechanism used in writing, drawing, etc. (in the deaf and dumb, the

mechanism behind the gesture language). These mechanisms, again, are linked up with those of other bodily actions.

We have said above that names facilitate thinking, by providing short cuts in the associative patterns. The nature of the associative mechanism is such that the sight of an object or action tends to call up the name of that object or action; and the name tends to call up the image of the object or action, or to instigate to the performance of the action. Both the spoken word and the thought are, in the first instance, induced by an external stimulus; but a thought thus induced can itself become the stimulus to action.

Children in early years "think aloud"; and earlier still, *i.e.*, before they begin to speak, they think without words. But the acquisition of the power of thinking without speaking one's thoughts is necessary in social life and is soon acquired. Folk who live much alone or who lose some of their inhibitions revert to the habit of thinking aloud or talking to themselves. Those who are reading, doing a sum, or thinking, can often be seen to frame words silently with their lips. Reading aloud was the usual method of reading in early times; silent reading is a relatively recent accomplishment. Thought is probably a very abbreviated form of speech. Is not thought instantaneous, like a lightning flash ("quick as thought"), while speech is the flash turned into sound: the rumbling and long-drawn-out thunder-roll? The revelations of the psychoanalysts show that the mind, and especially the unconscious mind, often "thinks" in symbols very remote from the reality.

According to this view, thought is not something different from the rest of the bodily processes but the working of a part of the ordinary nervous, glandular, and muscular equipment of man, the operation of which is accompanied in consciousness by a process which, to distinguish it from, say, feeling, we call "thought." Watson writes: "It is a constituent part of every adjustment process; a bodily process, like any other act"—(*Psychology from the Standpoint of a Behaviourist*, p. 325). This view is hotly criticised by certain psychologists, especially those with metaphysical leanings. To many it seems that the transfer of thought from the field

of metaphysical mysticism to that of common bodily action is a degradation.

"It is rather curious that explicit bodily acts of justice, mercy, kindness and sympathy have no stigmata attached to them because they are bodily acts, yet many scientists balk at admitting that thoughts of justice, mercy, and sympathy belong to the same category. . . . While it would not be admitted, it is probably true that even now thought, as it is generally conceived of by the scientific man, is his pigeon-hole and scapegoat for religious tendencies which even he himself may deny having."—Watson, p. 325).

We *think* when we encounter some obstacle or become conscious of a gap in our usual routine. When in winding your watch (with the minimum of conscious thought) you suddenly find that the winding stem goes round without the usual resistance, you at once become fully conscious; you *think*.

The speech mechanism serves two functions:—

- (1) It furnishes a means of communicating ideas to others by providing stimuli (e.g., the word "dog") which, without sight of the object itself, awaken in the brain the appropriate images.
- (2) It provides a sort of mental shorthand which, by substituting sign words for highly complex images, or associations of images, enormously facilitates the formation of those associations which are the basis of rational and voluntary action.

Reversing the old Bible phrase, "*In the beginning was the word,*" we say: "*In the beginning was the deed; next came the word that symbolises the deed; last of all, the thought of the deed.*" Even in human beings of a pre-eminently rational type, deed still takes precedence of word and thought.

## CHAPTER XXI

### INDIVIDUAL DIFFERENCES

#### § 81

Men differ in *temperament*. By temperament we mean the emotional aspects of a person's behaviour. The differences in temperament are illustrated by the contrasted types of persons with which we are familiar; the cool-headed and the emotional, the sensitive and the thick-skinned, the optimistic and the apprehensive, the placid and the impulsive, the well-balanced and the neurotic, etc.

Trotter broadly classifies temperaments as resistant or stable-minded on the one hand and unstable on the other. A stable-minded person solves a conflict of complexes by rationalisation or indifference. He is the type of "normal, sensible, reliable middle age, with its definite views, its resiliency to the depressing influence of facts, and its gift for forming the backbone of the State" (p. 55). Herd-suggestion, in this type, triumphs over experience. This is the class to which the management of the State is entrusted; it is nowhere better exemplified than in a certain type of labour leader which the capitalist press delights to hail as "sane and statesmanlike."

Trotter contends that the unstable type is increasing. It is intellectually the superior of the other: a type in which experience and herd-suggestion come into conflict. Its members are defective in "will" and "motive," or perhaps we should say they lack a needful complement of inertia; but thereby they gain in versatility, in that adaptability which has made man what he is. Its increase in the history of individual nations has probably been a factor in the recurrent collapse of civilisations which exist only through the passive submission of a majority to a governing class; its increase in modern society will probably be a potent factor in the develop-

ments which will result from the collapse of that society. Trotter does not consider to what extent these two types are respectively the expression of inborn qualities and of qualities induced by environment. The great increase in the number of "unstable" persons in times of stress suggests that environment must play a considerable part in arousing such manifestations.

### § 82

William James classifies two types which he names "tender-minded" and "tough-minded." These are approximately equivalent to what Jung speaks of as "introverts" and "extroverts." Generally speaking, such persons are regarded as having diametrically opposed types of mind, almost incapable of coming to an understanding with each other. This difference underlies the irreconcilable differences between philosophies—differences which are subjective, not objective. Much futile disputation, such as that in which materialists and metaphysicians vilify each others' methods, is merely the expression of the fundamental difference between the ways in which the two types respectively perceive and respond to their environments.

The two types may be blended in the same individual or either set of qualities may be developed almost to the practical exclusion of the other. But usually both tendencies are present in every one, although in varying degrees.

The *extrovert's* attention is directed largely to external objective factors and he will prefer muscular to merely mental action. He is not self-critical, makes social contacts easily, is fond of society and at ease in company. Extroverts readily and freely express their emotions in actions, words and gestures. Many business men, military, political and trade union leaders are extroverts. A salesman, above all, cannot be successful unless he is an extrovert. In philosophy, extroverts are inclined to empiricism, realism and materialism. They are interested in concrete facts; they are mostly non-religious and sceptical towards general ideas. Alcohol makes people temporarily extroverts, releases their inhibitions, renders them expansive.

The *introvert's* attention is largely directed to internal and subjective factors. He is inclined to contemplation, dreaming and thinking. Introverts hide their emotions and bottle them up. They prefer brooding and reflection to expression and action. They have difficulties in making social contacts, being shy and sensitive. They lead an intense inner life. Many philosophers, scientists, and artists are predominantly introverts. If introverts become theoreticians, they easily get lost in theories and general ideas. Opium makes people temporarily introverts, renders them secretive.

### § 83

Kretschmer discovered a close connection between physique and temperament. By increasing our knowledge of the inter-relations between body and mind, he has fortified the materialist conception of the mind. Kretschmer distinguishes three types of persons—(1) the asthenic type; (2) the pycnic type; (3) the athletic type.

Asthenic people are lean and thin and they often have an angular profile. Pycnics are stout, short, and thick-set. Athletics have strong muscles and an abundance of adrenalin (the hormone of the adrenal gland) circulating in their blood.

Asthenics are, on the whole, more inclined to be introverts. They are apt to be unsociable, reserved, slow in thought, tactless and shy. They have a greater amount of mental inertia, greater difficulties in accommodation to things and in changing from one thought, emotion, and occupation to another. The time-lag between stimulus and response is longer than among extroverts. Pycnics, on the whole, are more extroverted. They are apt to be sociable and cheerful, with a fertile imagination, being tactful, humorous and rather forward in social life.

Among noted public characters, Caesar, Calvin, Robespierre, Trotsky, G. B. Shaw and Dr. Goebbels are markedly asthenic. So was Cassius with his "lean and hungry look," if we can believe Shakespeare. Mirabeau, Danton, Zinovieff and H. G. Wells are typical pycnics. Pycnics abound among the members of local councils and the leaders of the Co-operative and Trade

Union movements. While pycnics are at the top in times of social stability—when routine is required—the “rule of the fat man” dramatically comes to an end in times of social unrest and the thin “fanatics” come to the top. In revolutionary times the pycnics, as in the case of Mirabeau, Danton and Zinovieff, are unreliable and usually corrupt.

In this connexion we can see clearly how the working of our mind is due to an interplay of organic and social factors. Some people have a pycnic organic or bodily constitution. They nevertheless are “introverts.” We can explain these apparent exceptions by the fact that social causes have counteracted the influence of their bodily constitution. People who have been thwarted and disappointed with life often become introverts, whether they be asthenics or pycnics. The Jews are a case in point. They are, on the whole, pycnic introverts. From their physique we should expect them to be predominantly extroverts. But centuries of repression have created an introvert strain. So we find that Jews, when a number of them are together (when, in other words, they feel at their ease), behave like extroverts. But when a few of them are dispersed among thousands of non-Jews, they become introverted.

Similarly, pycnic individuals who have had a trying childhood turn introvert. They can be found everywhere. Because the contact with their social environment (parents, brethren, teachers, bosses) disappointed them, they have withdrawn as far as possible from social contacts and are afraid of making them.

In big social movements, the introvert, when obsessed with a great idea, comes back again into the world, and this type of people is much in evidence wherever radical social changes are being made.

## § 84

Character is the sum total of the more permanent behaviour trends of the individual. Strong characters have a dominant motive that directs all conduct to a particular end; an image or ideal of conduct which is brought to the forefront of consciousness when-

ever the complex is aroused to activity. Every time that image prevails, by the law of habit it becomes better able to prevail again, till finally it dominates every conflict, however strong the emotional tone of the opposing impulses. Strength of character and persistence of motive are one and the same thing.

Of some persons we say that they have character, of others that they have none. Those persons who have “no character” are unstable and there is little permanent about them. The strong character, governed by the predominance of one interest or of one ruling passion, be it love of money, home, class or justice, has a marked ability for *inhibiting* motives contrary to the dominant complex. While a ruling passion implies vigorous purposiveness with regard to all situations affecting the dominant interest, it can be accompanied by instability of purpose and by incapacity for appropriate reactions to changing circumstances.

Strong characters usually show a preponderance of the self-regarding sentiment, and are kept on their path by lively feelings of dignity and pride.

Moral character is an expression of the relationships of an individual to his fellow men. It is largely the outcome of social environment, although different types of moral character may be partly dependent upon inborn racial qualities. There is some reason to suppose that certain races, notably those of Western Europe, have peculiarly strong antisocial and predatory instincts.

The consolidation of character around some sustained idea makes the great man. If dominant ideas and associations are primarily emotional, the type of the great religious teacher results. If the ideas and associations are reinforced by vast and profound rational knowledge—by memories, associations, and experiences organised in a scientific system—we have the type which exhibits genius for constructive statesmanship. Various other types are produced by different combinations.

## § 85

Personality is the sum total of a person's actions and tendencies. We can distinguish several layers in each personality.

**Personality** On the surface we have the way in which a person appears to other persons of his social environment. His fellow-men may describe him as a great fellow, as truthful, optimistic, a bit impulsive in his actions, etc. The "behaviourist" school of psychology confines its study to the external behaviour of people, to what can be observed about them from the outside.

We saw already that there is a great difference between what a person is and what he appears to be, owing to our desire to make our external appearance conform to the laws and standards of the society in which we live. (See Rose Macaulay's novel, *Keeping Up Appearances*). There is thus a second layer below the surface one, which is the way in which a person appears to himself or to herself. But because we are all more or less infatuated with ourselves, we do not get a true picture of our personality in this second layer. We appear in a more favourable or unfavourable light, just as our mood may be.

A real understanding of personality must derive from a study of the unconscious. The contents of the unconscious may leak out in dreams, in speech-blunders, in involuntary movements of the face, etc. But the unconscious constitutes the greater part of our actual personality. Psychoanalysts have succeeded in getting at the unconscious layer by the method of "free association." A person is encouraged to talk freely and express any idea which may come into his head. The free and uninhibited flow of these associations leads in many cases to the spot where the shoe pinches in the unconscious. Speech-blunders are of great interest if we want to estimate a man's personality. Very often he betrays himself in that way. The determined lady who in answer to a doctor's question about her husband's diet said: "He can eat and drink what I want," is a case in point. Freud has collected numerous instances of this kind—many of them less obvious than this one.

The capacity for grasping the strings of unconscious motivation (what is sometimes called "depth-psychology") is essential to the understanding of others—and ourselves.

## § 86

Psychology (and especially the results of psychoanalysis) points the way to the control of man's individual peculiarities to the best advantage. Many of the more emotional men in our movement are, however brilliant, inefficient for lack of self-knowledge. The Labour movement will take a step forward almost as important as the inauguration of Independent Working-Class Education when it provides the means, under the guidance of trained psychologists, for some of its leaders and propagandists to acquire self-knowledge with a view to making the best possible use of their talents. The "know thyself" of Thales is, in truth, the first, last, and greatest of the commandments. Translated into the wording of the New Psychology it may be effectively rephrased as: "know your own complexes and motives."

## CHAPTER XXII

### INDIVIDUAL DIFFERENCES (concluded)

#### § 87

All animals, man included, exhibit what biologists call *variation*—that is to say, individuals of the same species differ from one another by inborn nature in various characteristics, such as height, colour of hair, shape of skull and other parts of the body, liability to certain diseases, etc.

In the same way, men differ by inborn nature in the mechanisms which determine their responses to changes in their environment, and they differ in the efficiency of these responses.

We know, by careful measurement of large numbers of people, that, in a great many features, such for instance as stature, men or women vary about a mean; that is to say, there are a few very short and very tall individuals, considerable numbers of rather short and rather tall individuals, while most individuals are close to the medium stature, the "average height" of a male (or female) of their particular race.

Thus, Fig. 17, from Watson's *Heredity*, shows the results of measuring 8,585 British men. The vertical lines represent

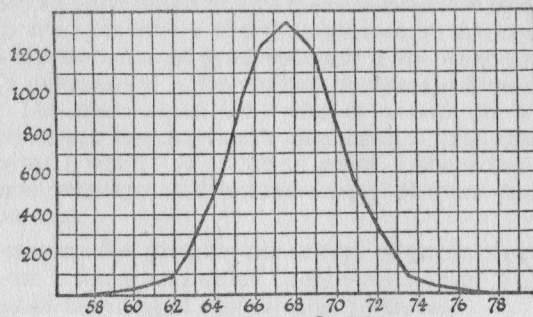


Fig. 17. (after Watson)

### INDIVIDUAL DIFFERENCES (concluded)

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differences of one inch in stature, the heights in inches being marked along the base; the horizontal lines, with the numbers marked up the left hand side, represent hundreds of individuals. Thus we see that, out of 8,585 men, over 1,300 were between 67 and 68 inches in height; while, as we depart further from this "average" height, on either side, the number of individuals of each particular stature gets less and less, till the number of very short men (below 60 inches) and the number of very tall men (above 76 inches) is insignificant.

#### § 88

There is a growing body of evidence that in the inborn qualities which make up intelligence (the capacity to learn, and still more to reason) there occur similar variations about a mean, in an unbroken series. It appears that intelligence ranges from that of idiots and imbeciles, whose mental capacity is so low that they have to

#### Varying Levels of Human Intelligence

be isolated in special institutions, through higher grade defectives, morons, and "ordinary folk," upwards to the rare creative geniuses in science, art, and public administration. A system of tests has been devised for measuring intelligence, based on the capacity to form associations and accomplish certain mental feats possible to the normal child at different ages. In the normal child, the associative mechanism of the cerebral hemispheres, which is extremely immature at the time of birth, develops steadily for a number of years. Thus it is found that work at school which is easy for a child of nine is quite beyond a child of seven; that the child of nine is incapable of forming as elaborate associations as the child of eleven; and so on.

At a certain age in every person the inborn mechanism of association reaches a stage beyond which it cannot progress. This stage determines the level of intelligence of that individual for the rest of life. Growth is then complete. The native intelligence cannot be increased, though by education it can be rendered more efficient within the range of its inborn capacity. In idiots and imbeciles, arrest takes place during the early years of childhood; in average individuals, somewhere

in the early teens; in the most brilliant geniuses it may not occur till twenty or later.

For purposes of the tabulation of adults we speak of the *mental age* of the individual. We classify intelligence according to the age in normal children at which that level is attained. Thus we speak of an idiot (perhaps forty years old) as being of "mental age three"; of an imbecile (perhaps twenty-five years old) as being of "mental age seven"; and so on. A *moron* is an adult who remains throughout life at the mental age of about twelve.

The U.S. Government subjected the 1,700,000 men drafted into the army during the late war to these tests, and tabulated the results. They are shown in Fig. 18.

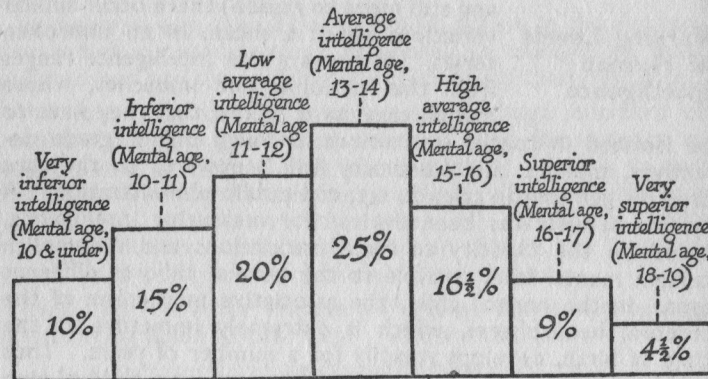


Fig. 18 (after Goddard)

The figure shows that intelligence varies about a mean in much the same way as stature varies. In this group of men (and probably in any similar group from any of the nations of Western Europe) the mean intelligence or mental level of the average man (the average voter in the democratic State) is that of a normal child between thirteen and fourteen years; 45 per cent. of the population are of a mental age of twelve years or under (including 10 per cent. who are at the mental level of a ten year old child or lower); the number of those

who reach the level of fifteen years and over is only 30 per cent.; and the number of individuals of really outstanding ability only 4½ per cent.

If we accept these figures as representative there is little hope that the majority of individuals in any nation, class, or group will be capable, when a crisis arises, of intelligently deciding what is the best course of action—even when their instincts and unconscious impulses urge them towards action of some kind. This is borne out by our experience that, in all crises, even where there is comparative unanimity as to aim (as in the late war), the dictatorship of a small minority is essential.

The experience of every proletarian propagandist when trying to influence his mates, and a consideration of the level of intelligence of many highly educated members of the ruling class, confirm the American figures.

### § 89

The fact that the level of intelligence of the majority of persons is as low as these figures indicate is of enormous importance in relation to theories of government. Still more important is it to those who are devising methods of government for critical and transitional periods such as that now before us. The democratic doctrine assumes that the vast majority of people are capable of forming such mental associations as are involved in realising the relations of cause and effect in the economic environment, and of appreciating theories which aim at ensuring greater harmony between man and that environment. But, in fact, a man of a mental age of say ten, or twelve, or even thirteen, can bring to the consideration of such a problem only the same mental tools as a child of the corresponding age; whom nobody, not even the most confirmed democrat, would think of entrusting with a voice in determining the course of action in a political or economic crisis.

As Eden and Cedar Paul have pointed out in *Creative Revolution*, the theory of democracy



"is based upon the belief that reason is the main motive force of human action, and that men in the mass are, if properly educated, always prepared to accept programs by reason of their justice, rationality and wisdom. It is a captivating theory; so captivating that it dominated progressive political thought for nearly a century; and the only serious objection to it is that it is not true" (p. 36). . . . "The basis of the democratic theory of progress is the belief that man is an essentially rational being; the belief that the actions of the average man are guided by rational considerations; the belief that by ratiocination you can effect a fundamental change in the goals towards which Tom, Dick, and Harry direct their respective energies. The modern psychologist knows better. He knows that, broadly speaking, Tom, Dick, and Harry direct their course through life under the influence of subconscious urges, and that the chief use to which they put their intelligence is to rationalise to their own satisfaction all that they undertake. They find reasons for what they want to do. Within limits they can be moulded by education during the plastic period of youth. In adult life they can be greatly influenced by revolutionary changes in the familiar environment. . . . But they cannot, in the mass, be much affected by such arguments as are put before them in a parliamentary campaign."—(p. 142).

## § 90

A fierce controversy has raged concerning the relative importance of inborn tendencies and acquired habits in the making of the individual. The controversialists are usually dominated by emotional preferences of a non-rational character, which they rationalise to their own satisfaction as political, social, and biological theories. Conservatives usually stress the hereditary factors. Persons who want to achieve some change put the emphasis on environment. We dwelt earlier on the respective influence of "nature" and "nurture" on human beings.

It goes without saying that traits common to almost all members of the species are inherited. In this way almost all people are born with a similar bodily constitution—two arms, two legs, one stomach, etc.—and with certain reflexes, like the blinking reflex of the eye. But how much of the individual differences is due to heredity and how much is due to environment?

This problem is best approached by the study of "identical twins." There are two kinds of twins—"fraternal" and "identical." Fraternal twins develop from two eggs (or ova),

identical twins from one egg (or ovum). Since heredity, consists in the transmission of traits through sperm and egg and since both identical twins come from the compound formed by one sperm and one egg, they must inherit, both of them, the same traits. Identical twins of same sex are, therefore, extraordinarily alike. They are like one person walking about in two halves. The lines in the palms of their hands are the same and this fact is used as the most common test for identical twins.

When we take identical twins at the age of, say, 20 their weight and the length of their heads are the same in more than 90 per cent. of the cases. Their intelligence is the same in 92 per cent. of the cases and this, in conjunction with the fact that it is the same only in 63 per cent. of fraternal twins, shows that intelligence is largely due to heredity. By means of mathematical calculations which are too elaborate and complicated to reproduce here, the conclusion has been reached that, as regards intelligence, heredity is about five times as important as environment. Identical twins start with the same hereditary endowment and with the same amount of intelligence. Differences in the environment create a divergence in only 8 per cent. of the cases. Our susceptibility to certain types of mental disorder and insanity is also transmitted by heredity.

The structure of the inborn mechanism imposes fixed limits upon the degree to which intelligence and skill can be cultivated. Nevertheless, *there is hardly any limit to the extent to which the behaviour of the average individual can be moulded by environmental forces* (education, economic surroundings, etc.), provided these forces are sufficiently intense. In the present system of society many people are unable to make use of their inherited intelligence. Many of our machines are built to be handled by persons of low intelligence, and are said to be "fool-proof." A girl may possess a high innate intelligence. But when put into a cotton mill to look after the looms, her intelligence may find little scope for exercise, and so becomes blunted in the course of time. The drudgery of uninspiring housework is also detrimental to intelligence—though considerable intelligence, and a liking for the job, are requisite for doing housework really well.

No amount of education will make a dull person intelligent or transform a mediocrity into a creative genius. For high intelligence, or for genius, a special inborn mechanism is requisite. In a changed educational environment, however, the dullest person (short of idiocy) can be fitted for a useful function in the community, while the mediocrity can be equipped with sufficient knowledge to enable him to co-operate in bringing about a new order.

## CHAPTER XXIII

## THE HERD

## § 91

The life of a solitary or non-social animal, like the tiger or the fox, consists in doing what it wants to do without regard to the effect of its behaviour on others

**The Herd** of its kind (excepting its mate and offspring).

**Instinct** But, in the course of evolution, certain species of animals have succeeded in surviving in the struggle for existence by associating in herds or packs for purposes of mutual protection and co-operation. Sheep, antelopes, cattle, etc., find safety in numbers. Wolves and wild dogs hunt in packs. Baboons forage in troops, which send out scouts, post sentries, and co-operate in turning over heavy stones for the insects, etc., under them. Rooks and other gregarious birds exercise collective vigilance, and even take turns at sentry duty. *Gregariousness* enables a number of individuals to act as one, with consequent increase of efficiency. Social animals are those animals which have developed instincts promoting behaviour compatible with social life.

Among gregarious animals the main object is not the survival of the individual, but of the community; while at the same time the organisation of the individuals into a community or herd confers additional security upon each individual.

In the individual, gregarious traits would be favoured in the process of natural selection, as making for survival. The sheep that was not impelled by instinct to keep with the others would be more liable than they to be eaten; the wolf that refused to co-operate with the pack, and hunted on its own, would have less chance of getting a meal or getting frequent meals.

In man, the herd instinct manifests itself by pleasure in company, in being one of a crowd; by dread of loneliness or of intellectual isolation; by desire to conform to the opinion of the herd, fear of being thought eccentric, dislike of ridicule.

When the social group is in danger, the gregarious instinct increases. After the outbreak of war in August 1914, manifestations of the herd instinct were conspicuous. Notably, increased gregariousness; desire for the company of and contact with the crowd; credulity of the wildest rumours, suspicion of foreigners, readiness to believe the worst of the enemy and to reject any accusation of wrongdoing by our own side; above all, the prevalence (except among those who foresaw the rich spoils which the war would yield them, and laid themselves out to take advantage of it) of fine altruistic tendencies and a desire for service and sacrifice on behalf of what was believed to be the common good.

The intelligence of the herd stands at a lower level than that of the average intelligence of its members. Impulsiveness and credulity have free rein.

Social relationships, the relationships between the individual and the herd, have much in common with the relationships between the individual and its mate (sexual relationships) and with those between the individual and its offspring (family relationships). We may conceive that, biologically speaking, social relationships are an outgrowth of sexual relationships and family relationships—that the herd instinct is an elaboration of the sexual instinct and the family instinct.

There are certain fishes in which no pairing takes place. Egg-cells and sperm-cells are discharged promiscuously into the water. In these animals there is no attraction between the sexes; at the spawning season they congregate in dense shoals, the proximity of the individual specimens resulting in the maximum percentage of fertilisation in the egg-cells. Here the reproductive instinct takes the form of gregariousness, so that in this case at least we have a definite relationship between the sexual impulse and the herd impulse.

#### § 92

Underlying the herd instinct, in addition to mere gregariousness, there is an extremely important faculty known as *suggestibility*. The sight of other persons engaged in any action, or the sound of the spoken words denoting that action, is a

stimulus inciting to its performance. According to Charles Baudouin, autosuggestion is the vital factor in all suggestion. In his view the influence of what is done or said by others is of secondary importance.

By the deliberate use of suggestion and autosuggestion even the automatic vegetative functions of the body, the "involuntary" functions, can be influenced. In this way suggestion and autosuggestion play an important part in the cure of disease. The method is deliberately employed in a scientific way by persons who have made a special study of it; it is half-consciously employed in all medical treatment; and it is the fundamental element of such religious cults as Christian Science. By proper training, any intelligent person can learn to make deliberate use of this faculty of autosuggestibility, with results of enormous value alike in matters of health and education.

The phenomenon of suggestibility is especially conspicuous in gregarious animals. The term panic is used to denote collective fear spreading from individual to individual by suggestion. It is familiar in human beings, and it can be objectively studied in a flock of sheep or a herd of cattle. Again, the sight of birds on the ground will, apparently by suggestion, induce other birds to alight.

We are constitutionally prone to accept with conviction propositions suggested by other individuals of the same herd or group. Under the influence of suggestion, an opinion held by the herd, whether a religious belief, a political formula, a view as to the "cause" of a war, or a conviction as to the utter moral depravity of every member of an enemy nation, becomes incorporated in a complex, and is accepted as an unchallenged truth. Henceforward, any attempt to throw doubt on it arouses resentment. Adverse experience is disregarded. In this connection, McDougall's definition of suggestion (otherwise inadequate) is worth quoting. It is, he writes, "a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance" (p. 97). If this definition of suggestion be correct, the overwhelming majority of our convictions must be due to suggestion.

## § 93

The herd instinct determines the ethical code of the average man and woman, furnishing them with those beliefs and opinions which are not the outcome of special knowledge or deliberate reflection. The ordinary man, writes Bernard Hart, "carries out certain rules of life because his fellow-men carry out these same rules; he believes certain things because he lives in an environment where those things are believed by everyone around him" (p. 134).

We quoted William James to the effect that habit was the cement of society. Even more important in this connection is the influence of herd suggestion. Trotter writes:

"That a creature of strong appetites and luxurious desires should come to tolerate uncomplainingly his empty belly, his chattering teeth, his naked limbs, and his hard bed, is miracle enough. What are we to say of a force which, when he is told by the full-fed and well-warmed that his state is the more blessed, can make him answer: 'How beautiful! How true!?' In the face of so effectual a negation, not merely of experience and commonsense but also of actual hunger and privation, it is not possible to set any limits to the power of the herd over the individual" (p. 115).

Governing classes have at all times found in the suggestibility of human beings the most potent means for the maintenance of dominion and the enforcement of passive acceptance of exploitation. Of late, the capitalist press, a pre-eminent organ of class domination, has become the main vehicle of the suggestions that influence the masses for the benefit of the owners of the means of production.

"With untiring insistence and by the daily attraction of the public attention through the use of smart catch-phrases which sum up his point of view (it would be more true to say the point of view of his capitalistic masters) in an effective manner, the journalist perseveres in his work—the culture of fungoid ideas; he knows that his phrases will stick in the popular mind, and when they become familiar enough there, will in most cases function quite as usefully there, from his point of view, as consciously-formed thoughts."—(Watts, *Abnormal Psychology*, p. 50).

We all know that the capitalist press, when a strike is imminent or when a strike ballot is taking place, spreads reports that the workers will not come out, that the branches of the union are opposed to the strike or (if a strike is in pro-

gress) that those on strike are returning to work. This propaganda influences many of the duller and less class-conscious members of the rank and file. Precisely because they are not class-conscious, their minds are "open" to the suggestions of the enemies of their class. In like manner the influence of the churches is mainly dependent upon suggestion. Education works through suggestion. Children are peculiarly suggestible. The Jesuits are credited with saying "Give us a child till it is seven years old and you may do what you like with it afterwards." The Bolshevik's main weapon in undermining the influence of religion is the banning of all religious instruction up to 20 years of age. In Germany the masses were successfully prepared for the last war by the junker-militarist control of State education; for the next war the Germans are being diligently prepared by Nazi propaganda.

Suggestion is the basis of propaganda. The orator who stirs thousands of sane men by skilfully manipulated catchwords, and the revivalist preacher who moves them to tears and brings them trooping to the "penitent form," are exploiters of suggestibility. The degree to which the effects are lasting depends on the nature of the chief complexes dominant in the individual to whom the appeal is made; which in their turn have been induced by the influences of individual environment. It is these complexes that the leader must study if he wants lasting results. Propaganda which makes no appeal to a deeply-rooted subconscious complex has no lasting effect. Consider how little influence sermons have on the week-day conduct of the churchgoer. Socialist propaganda which appeals to the complexes induced in the worker by unemployment and privation resulting from the capitalist system falls on good ground. *In proportion as such propaganda ceases to rely on herd suggestibility alone, and aims at directing the irrational impulses arising from deep-seated emotional complexes into rational channels—at the informing of desire with knowledge—in that degree propaganda ceases to be mere propaganda and becomes education.*

The anti-German propaganda carried on in this country throughout the recent war achieved signal success because of its appeals to the powerful complexes of fear and hatred.

On the other hand, anti-Russian propaganda, although supported by almost unlimited funds and carried on with the aid of systematic lying to an extent probably unprecedented in history, failed to arouse a mass desire for a war against Soviet Russia. This time the appeal was too remote from the fundamental complexes of the average British newspaper reader. The Councils of Action, working through organised Labour to prevent war with Russia, were more representative of British feeling.

On our own side, suggestion (especially autosuggestion) is a powerful force. The Marxist confidently believes in the breakdown of capitalism and in the coming of socialism. This belief gives strength of purpose, propagandist zeal, uncompromising steadfastness, invincible optimism. In these respects the Marxian "faith," as its critics justly declare, is akin to the faith which has characterised the great religious movements of history. *But the faith of the Marxian differs profoundly from religious faith; the latter is based only on desire and tradition; the former is grounded on the scientific analysis of objective reality.* The champions of religion have always had to reinforce themselves with visions of a future existence which could not be tested by the realities of this life. The "faith" of the Marxian, on the other hand, is rooted in material knowledge, in scientific analysis of the tendencies inherent in events. In so far as it continues to take its stand upon material science and to maintain an alert-minded receptivity to any new facts that reality may reveal, it will remain infinitely superior to any religious faith. Marxism will enable us to realise in practice what Augustine, the Christian Father, longed for, namely, an intelligent union of the will of man with the infinite "will"—which Augustine, of course, termed God: his name for what we mean by the working of the eternal system of natural causation.

The rationalistic and knowledge-seeking class-consciousness of the Marxian constitutes a new factor. *Social evolution is becoming self-conscious.* Man has begun to co-operate with the forces which are sweeping him along towards a new order of things. This fact distinguishes the present revolution from any of its predecessors.

## § 94

The workings of the herd instinct signally exemplify the domination of man by non-rational impulses. The mob mind is sub-human. The herd instinct makes for stability, but if left to itself it makes for re-  
**Irrationality of the Herd** action rather than for progress. Innovations which threaten to upset the existing sense of security are resented. By carefully choosing the best times and methods for presenting the case for new things and new ideas, the propagandist must endeavour to overcome the instinctive hatred of new things and of new ideas which is a leading characteristic of the herd.

## § 95

"Herd" and "crowd" are overlapping concepts but it is essential to distinguish between them.

Tansley describes the *herd* as "any social organisation to which a man is conscious that he belongs, and to the suggestions arising from which his mind is susceptible" (p. 204). He describes a *crowd* as "the actual physical aggregation of a number of human beings actuated by common impulses and emotions" (p. 205).

The behaviour of the herd is determined by complexes formed by the influence of a common environment and reinforced by suggestion. An example of the herd was the British nation in war. Fear and hatred of Germany as a land peopled by economic rivals provided the material setting in which a war complex could grow. Information as to German brutalities in Belgium, enhanced and exaggerated by purposeful lying, and the fear of like treatment if Germany got a footing in England, accentuated this complex. Propaganda intensified it. Hypocritical rationalisations of British motives—such as "fighting for freedom and democracy" and the "rights of small nations"—reinforced the crude fear-and-hate complex, and to a degree infused it with nobler sentiments. As a result, the war complex became the leading constituent of the national herd instinct.

The behaviour of a crowd depends much more on momentary suggestion. The influence of such a passing suggestion is seen in its most intense form when a fire breaks out in a theatre or other place of public assembly. In the consequent panic men and women stampede madly and trample each other to death. It is seen also when persons brought together in a crowd by a common impulse perform some unpremeditated act, under the verbal suggestion, or practical leadership, of one or a few individuals; as in lynchings, religious revivals, etc. The crowd is non-rational. Its intelligence is

"limited to the bare recognition of objects or symbols which excite its affects and impulses. The rational powers of the individuals comprising it are in abeyance when once its instincts are excited. . . . Everyone who has even once been a member of an active excited crowd—not an individual included in it by chance and holding aloof from its emotions—but a member, sharing its emotions and impulses, knows well what its psychical characteristics are—the sense of wild enthusiasm, of unrestrained satisfaction of instinct, and of irresistible intoxicating power."—(Tansley, p. 205).

The results of herd and crowd psychology have been amply used for reactionary purposes. It has been argued that the mind of individuals *always* deteriorates when individuals congregate in social groups. The most valuable human being would, according to this reasoning, be the person who keeps aloof from the mass. It further would follow that society would be governed best by people who keep their mental and moral faculties intact by refusing to merge in a social group. But if man's intellectual faculties are blinded and his emotional impulses barbarised by his merging in the mass—democracy must be sheer nonsense. Society should be handed over to a set of "superior" individuals—the rule of an aristocracy or of a fascist gang seems the best possible government!

The results of a crowd psychology which was elaborated by bourgeois scientists can easily be made to "prove" the inferiority of the masses, because these scientists started their researches in the expectation that they would find nothing to commend in the masses. Socialists must, therefore, be careful to discriminate in bourgeois social psychology between facts and class bias.

By ceasing to be a mere individual and joining the working-class movement the worker enriches his mind, far from

impoverishing it. Not all social groups have the same effect on the minds of individuals. Some improve, others deteriorate it. Lynching mobs lower the individual's mental level and bring out the worst that there is in human nature. Participation in great and constructive social movements usually raises a person's mental level. To quote one of Conze's remarks on the subject:—

"To assemble people means to excite them. But do excited people always lose their heads; can they not also be excited to greatness? In moments of great collective exaltation and enthusiasm, which mark the summits of history, the average individual is raised far beyond his normal stature. He acquires new dignity. He reaches a clear-sighted vision of the necessities of his society which he may not be able to express in words, but to which he may give expression in songs, symbols, and actions, which transform the face of history. Most of what mankind has achieved, and most of what it has transmitted to us, it owes largely to those moments of collective exaltation and enthusiasm."—(*The Scientific Method of Thinking*, page 64).

## CHAPTER XXIV

### IMPULSES AND SOCIAL BEHAVIOUR

#### § 96

*Self-assertion* is accompanied by the emotion of pride or elation. It is seen in the males of polygamous birds, like the victorious gamecock crowing on the farm-yard dunghill, and in the self-satisfied mien of a dog that has performed a clever feat. **Self-assertion and Submissiveness** It moves the young man to swank before the girls or his mates. It underlies the sense of class superiority in the aristocrat and the bourgeois. It is likewise the basis of the sense of satisfaction that characterises the class-conscious proletarian. It is especially aroused in the presence of spectators, or by the approval or applause of one's fellows, and is therefore essentially social in its operation.

Self-assertion extends from a man's person to his possessions, family, tribe, country, etc. In these spheres it is exemplified in family pride, *esprit-de-corps*, etc.; and in patriotism (in so far as patriotism is anything more than the outcome of suggestion).

Much of the beneficence and charity of the rich and the powerful is performed in order to gratify the desire for self-approval, and in order to minister to the sense of power which the humble gratitude of the poor evokes.

The same tendency underlies those forms of conduct to which the epithet "moral" is especially applied. The essential factor here consists of complexes embodying a standard of conduct in which the opinion of the herd has been replaced by a principle, a theory of life, or an ideal, based upon education, experience, or reasoned thought (all functions of associative memory). These complexes are rationalised as "morality," "good form," etc.

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*Submissiveness* is the opposite of self-assertion. It is seen in the behaviour of a puppy in the presence of a big dog, or of a "cowed" dog towards its master. Also in the timid man who cringes before a bullying employer, and in the sycophancy and boot-licking which are manifested towards the rich, princes, etc. The dog shrinks with head and tail down, or rolls on to its back. The man is sheepish; his back is bent, his hands may perform washing movements, his whole bearing is apologetic or hangdog.

In social animals, such behaviour makes for survival in cases where pugnacity or self-assertion against impossible odds would lead to certain death. It is largely reducible to a complex of habits organised around the more primitive impulse of self-preservation.

Submissiveness is so widely exhibited in modern Europe that it must be taken into account as a serious factor in all schemes for the reconstruction of society. It is this tendency which makes men voluntarily submit to and follow leaders in whom they have confidence; leaders whom they regard as superior to themselves in knowledge, ability, or other qualities. The emotions which accompany it tend on the one hand to keep a section of the proletariat cringingly subservient to the ruling class, and on the other hand to reinforce the discontent of the class-conscious section.

Submissiveness arises in childhood and shows itself for instance in the desire "to be good" in one's parents' eyes. It is reinforced by morality and religion. Subservience, humility, and obedience are taught as virtues. Emerson echoes the Bible (Colos. 3) when he says: "By contenting ourselves with obedience we become divine." Naturally rulers regard this doctrine as good—for the ruled.

The habit of submissiveness in the workers is the granite on which the ruling-class builds its power. It does far more to maintain their power than do army, navy and police. Many workers enjoy looking up to somebody. The end of the rule of the French aristocracy came when the masses could sing: "The great appear to us as great—because we are on our knees. Let us rise!" Only if we regain this magnificent spirit will the workers be masters in their own country.

## § 97

According to Adler, every individual directs his life towards some goal or purpose; everyone has a vision of the attainment of power or security. This is Adler's chosen way of expressing what we in this book have named conation. The *inferiority complex* leads to a desire for superiority—a "wish to be a complete man," the "masculine protest," by which is meant the protest against inferiority. Adler regards the idea of inferiority as associated with femininity. We think also, in this connection, of Nietzsche's "will-to-power." This motive force is strongly developed in the neurotic, who tries to correct his feeling of inferiority by recovering the security of which it robs him. He therefore rationalises his desire; he invents a fictitious goal or "guiding fiction"; accepts a "vital lie," as Ibsen calls it.

As an example of the inferiority complex, take the case of a man suffering from some physical disability, say a cripple or a consumptive. His defect makes him inferior to his fellows in physical strength, speed, endurance, capacity to enjoy life. Being unable to satisfy his "wish to be a complete man" in the field of physical endeavour, he unconsciously strives towards another form of power. He may gain satisfaction in study (striving towards intellectual superiority), in religion (striving towards moral superiority or superiority in a future life), in political propaganda (superiority through leadership or through a reorganised society), in self-assertiveness in the home or among his mates; or, other paths being closed to him, he may find his satisfaction in the fictitious freedom which alcohol offers—or in the delusions of megalomania, in which he may be a king or a millionaire.

The tendency of the inferiority complex, then, is to rationalise the unconscious desire for power aroused by some (usually material) inferiority or deficiency of the individual, by providing a goal towards which he can consciously strive, thus giving an outlet to the conations which are obstructed by his particular deficiency.

## § 98

It is hardly too much to say that the inferiority complex is at the bottom of all the best creative work of the world. The "will-to-power," thwarted in its usual channels, finds an outlet in scientific or artistic achievement, or in other pioneer work. Think how many of the greatest innovators in science, philosophy, and art have been men and women of defective health, or actually deformed. Consider the "cranks" who have so much to do with inaugurating any new movement. Think of the many workers in our own movement whose revolutionary zeal has shone through frames weakened and dwarfed by servitude, or by the diseases which industrialism fosters. Tridon clinches the matter by saying: "The discontented man is the hope of the world" (p. 24).

We would again emphasise the principle that the very nature of the associative mechanism makes it inevitable that the conscious motives to which we attribute most of our actions are nearly always rationalisations. *The degree to which our rationalisations coincide with reality depends on the amount of our knowledge, on our scientific understanding of the object of our desire. Our minds automatically set up goals which are largely fictitious. We must see to it that these fictitious goals shall be so far shaped by scientific knowledge that they shall be reasonably like the goal towards which the forces of determinism are working. In so far as a man can anticipate the natural trend of events, and can identify his will therewith, to that extent is he free. Freedom can come through knowledge only.*

## § 99

Pugnacity is aroused when the free exercise of other impulses is thwarted; its aim is to overcome the obstruction.

It is readily replaced by the instinct of escape; **Pugnacity** and, conversely, fear easily passes over into anger.

The latter change is well illustrated by the behaviour of a cat which is "cornered" when running away from a dog. Finding escape impossible, the cat suddenly turns in a fury to face its enemy.



The essentially reflex nature of the responses characteristic of pugnacity, anger, and pain, is proved by the fact that they can be evoked in a decerebrated animal, which has been rendered incapable of any reactions of a kindly, affectionate or social nature, or even of the simplest act of intelligence or acquired habit involving associative memory. Pugnacity, therefore, must have appeared at a very early stage of evolution. It must have developed as a necessary part of the mechanism of self-defence, before the higher qualities dependent upon the great development of the cerebral hemispheres appeared in our animal ancestors. In times of intense social stress, when men are reverting to the crude clashes of the biologic phase, we may expect pugnacity to have far more influence in human affairs than the higher sentiments which are less deep-rooted. Such has been the experience of the war. We have seen that anger, pugnacity, and hate can readily be aroused by propaganda against any group of persons, if only the suggestion can be imparted that the behaviour or the mere existence of this group endangers life or property. Conversely, few persons can be inspired with effective sympathy for groups whose lives are, or appear to be, remote from contact with their own. The pity felt for "bleeding Belgium," for "suffering Serbia," and for the victims of "Bolshevik atrocities" was entirely subordinate to the hostility towards the invaders of Belgium and Serbia or towards the Bolsheviks; the "sympathy" would appear to have been mainly a rationalisation to reinforce the hate and pugnacity complexes.

## CHAPTER XXV

## SOCIAL PSYCHOLOGY

## § 100

*Class-consciousness* is the collective outlook of a group of individuals whose environment is sufficiently uniform to produce a marked degree of uniformity in their individual and collective reactions. Any group of individuals associated by common bonds tends to develop a common ideology towards those circumstances through which they are associated. This happens, for example, in members of the same profession or craft or of the same religious sect, in devotees of the same sport, in members of the same hereditary caste (a word too often confused with class which we here use only in the economic sense), etc.

Marx pointed out that the greatest of all the group-consciousnesses which shape the behaviour of men is that determined by the way in which they get their living. This is what we call class-consciousness. By classes we mean the two more or less distinct groups on which all civilisations have hitherto been based: the possessing, governing, non-labouring class; and the propertyless, governed, labouring class. In the modern capitalist democratic State these are respectively named the bourgeoisie and the proletariat. It matters not, for our purpose, that in such a complex society as our own there is a very large intermediate class whose status is covered by neither of the above definitions. The middle classes comprise many groups with widely differing economic environments. Usually this section of society has little cohesion. But if their very existence is at stake, they have shown that they can act collectively. Alarmed and infuriated middle-class persons play a big part in fascist movements.

The general outlook of the ruling class which that class endeavours to impose upon the workers through the machinery

of State education, through the press, the cinemas, etc., is known as *bourgeois ideology*. The general outlook of the class-conscious workers is known as *proletarian ideology*.

## § 101

Under ordinary circumstances the class war is a fight for a division of the national income. The workers strive to increase what they get in the form of wages, salaries and social services; the capitalists desire to increase the amount paid out in rent, interest and profit. In times of social stress and great social instability however the class war becomes a struggle for power between two rival groups of persons whose outlooks, whose class-consciousnesses, have been shaped by different environments. *The transference of power from one class to another is known as revolution*. In the relationships between two classes competing for power the impulses of fear and pugnacity are called into action.

"A surprising ferocity is apt to be developed, and a very ugly side of human nature comes to the fore. The opponents of capitalism have learned, through the study of certain historical facts, that this ferocity has often been shown by the capitalists and by the State towards the wage-earning classes, particularly when they have ventured to protest against the unspeakable suffering to which industrialism has usually condemned them."—(Bertrand Russell, *Roads to Freedom*, p. 17).

The ruthlessness with which the possessing class endeavours in such struggles to repress the workers, arouses, in like manner, fear and pugnacity in the latter.

In certain periods of history, an equilibrium is temporarily established, so that the class struggle becomes less obvious, and large sections of the community deny its existence. At other times the intensity of the class struggle is so great that the phenomenon is manifest to all. The world is now passing through such a period of intensified class struggle.

## § 102

The social and economic relationships of men give rise to complexes built up around the facts, the ideals, the hopes,

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and the fears associated with the conditions under which people procure their livelihood. When the individuals in a social class become aware of the ideology peculiar to their class, and consciously identify themselves as individuals with that class and its ideology, we say that they are *class-conscious*.

The class-consciousness of the capitalist is built around the idea of the retention and increase of his property and of the privileges it bestows and the necessity of excluding the mass of the workers from sharing them. This often involves, as an unconscious rationalisation, the acceptance of the system in which he occupies a favoured position as the only right and correct thing, perhaps under some such high-sounding name as "the constitution," or "law and order."

On the other hand the class-consciousness of the worker is built up around the idea of his exclusion from the enjoyment of the advantages which he has created for others, the practical impossibility of his ever being able to win the relative freedom enjoyed by his masters, the fear of destitution, and of the suffering which will fall on his family when he dies or is too old to work, the desire to control the product of his own creative activity, etc. In his class-consciousness he embodies the conations of his chief animal instincts and emotions, the will-to-live, fear (of unemployment and poverty), family affection (and apprehensions as to the prospects before his children), thwarted acquisitiveness, thwarted constructiveness, inferiority-complexes resulting from his sense of powerlessness and (above all) the dissatisfaction, anger, and pugnacity which arise from obstructed conation or desire, whether consciously realised or not.

In the vast majority of cases the obstruction leads only to a vague sense of something wrong. Education and propaganda based on Marxian teachings can combine this blind striving with scientific knowledge, lead to an insight into the nature of the "wrongness," and to an understanding of the tendencies of historical development. In this way the worker will realise the steps he must take in order to arrive at a more just and rational order of society.

The proletarian reaction to the crisis through which Europe

is now passing is of vital importance in the history of the world. Upon the effectiveness of that reaction will depend whether, upon the collapse of the capitalist system, western civilisation will advance to socialism or relapse into fascist barbarism. The issue will be determined by the degree to which the workers prove able to make their class-consciousness intelligently purposeful.

We are all actuated at bottom by irrational complexes. Probably not one of us, in the first instance, accepted the opinions on social questions which he now holds, simply because they were "reasonable." He accepted them because they harmonised with his conscious or unconscious hostility to his economic environment. This hostility, in its turn, arose from the obstruction of conation, the thwarting of the will-to-live and the will-to-power. This is obvious to anyone able to carry out an honest self-examination.

#### § 103

The intensity of class-consciousness, the degree to which there exists a mental homogeneity which can express itself in solidarity and effective joint action, depends upon numerous factors. Chief among these is the existence of a common environment and common everyday habits of life, especially in regard to the way of earning a livelihood. The massing of large bodies of the proletariat in industrial centres forms bonds between the workers and promotes uniformity of outlook. Action and reaction between rival or hostile groups or classes is another notable factor. Furthermore, class-consciousness is powerfully consolidated through dread of or hatred for a common enemy and through awareness that corresponding feelings inspire the members of the enemy class. The crystallisation of such sentiments is greatly promoted by persecution in any form. Under changed conditions, it is still true to-day that "the blood of the martyrs is the seed of the church."

Supreme importance must be attached to methods which will lead the members of the working class towards the active realisation of a community of environment and purpose. Here

we are concerned mainly with deliberate educational work and direct propaganda within the class.

Much will depend upon the efficiency and specialisation of leadership—under conditions which will not separate the leaders from the life and ideology of their class.

Finally, whatever view we may take of the "theory of increasing misery," there can be no doubt that suffering is an important factor in the development of class consciousness. The comparative absence of class-consciousness among British workers has been due, above all, to the comparative comfort and security in which they have lived. The success of the Russian revolution has been in great measure due to the indescribable sufferings of the Russian workers under Tsardom. Similarly the sufferings of the German working class will probably end in a victorious socialist revolution.

#### § 104

A class-conscious member of any class, transferred to another class and subjected to a different environment from that which induced his original class-consciousness, tends to develop a new ideology characteristic of the new environment. The change of outlook is obvious in working men who have become successful members of the capitalist class.

A similar change has sometimes occurred in the case of working-class leaders. Here and there in the history of the Labour Movement one comes across rebels who, after being elevated to positions of importance which gave them an entry into a middle-class environment and brought them in touch with middle-class customs, have steadily drifted away from the Labour Movement, and in some cases have lived to see the day when they have actively opposed it.

## CHAPTER XXVI

### SOCIAL PSYCHOLOGY (*concluded*)

#### § 105

The need for leadership arises from two main causes. The first of these depends upon variations in inherited characters, upon the diversity in inborn mental capacity. **Leadership** in any group of human beings. The second depends upon diversity in acquired characters, upon differences in the amount of knowledge bearing upon the question at issue which different individuals possess. The more complex the environment and the more complicated the particular situation, the more urgent the need for leadership.

The person who combines with a high degree of hereditary capacity the most extensive acquirements of knowledge bearing upon any department of life will be the most efficient leader in that department. However gifted by native genius, he will not be an efficient leader in fields outside the range of his acquirements.

In the social insects, among which behaviour is mainly determined by the inherited characters common to almost all members of the species and is little affected by individual experience (associative memory), the responses vary but little from individual to individual. Leadership is therefore superfluous. Ants appear to perform their most complex social acts, such as slave-making raids on other nests, without any leaders. In a given situation, *i.e.*, in response to given external stimuli, all the individuals seem instinctively to take the same line of action. It is possible that similar considerations applied to primitive man. Rivers notes the apparent absence of leadership in the warfare of certain savage tribes (*Instinct and the Unconscious*).

Even in the case of modern civilised man, situations occur, such as the vast environmental changes which lead to the great events of history, in which large numbers of men think

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and act with remarkable uniformity. When this happens, we must consider the leaders not so much to be persons who direct the action of the masses as to be persons who give expression to and integrate the impulses which the masses collectively possess.

Turning to the problem of leadership in the class struggle, the qualities requisite for success in this department are obvious from the foregoing considerations. *In addition to possessing the inborn capacity indispensable to leadership, the leader of the workers in the class struggle must be equipped with knowledge: (1) of the nature of the economic environment; (2) of the nature of the human organism both physical and mental, and of the way in which it reacts to that environment; (3) of the history of the environment and of man's interaction with it; (4) of the evolutionary tendencies which history reveals and of the directions in which man, by intelligent action, can best turn to his own use and adapt himself to the changes to which the economic interpretation of history points as inevitable.*

#### § 106

The great enemies of progress are those stolid, dull-witted, unimaginative persons who comprise so large a proportion of mankind. They dread change because change disturbs their established outlooks and habits, and because they lack the mental vision which could show them the potentialities of change. These are the constitutionally conservative people, those who fear change or hate novelties. They attribute a permanence to affairs that are in fact ever changing, or at least hold up to us the hope that we can attain to a state of rest and security in which further effort will be unnecessary. In the real world, struggle is the essence of life—the struggle of the individual or of the race to master an environment that is undergoing ceaseless transformation. The belief in finality is the chimera that such a creature as man, in such an environment, can attain to equilibrium, can secure rest. Thus in folk-tales and children's stories, when troubles have been overcome, people "live happily ever after."

*The various static utopias of the pre-scientific stages of socialism,*

*the belief of the bourgeoisie in the permanence of the capitalist system, and the theologians' heaven of rest, peace, and eternal happiness after this life, are all based on the illusion of finality.*

The vast majority of people hate innovations and persecute the innovator who does not fit into their grey uniformity. They owe almost everything to the pioneers, but they hate the pioneer when they see him—until he has won.

These considerations help to explain what in Marxian terminology is known as a conflict of ideologies and in non-Marxian terminology is spoken of as a conflict between moral codes. They explain why pioneers, those whose ideology or morality conflicts with that of the herd, and especially (in the various types of society based upon ownership rule) with the ideology or morality impressed on the herd by the ruling class, are stigmatised by the herd as profoundly immoral persons.

#### § 107

The term *emotion* is applied to certain hereditary modes of response which lead, in the first instance, to bodily states rather than to actions, though these states greatly influence action. The three most primitive and universal of such states are fear, anger, and the sexual emotion (called "lust" by McDougall and "love" by Watson).

In these emotional responses certain bodily changes take place; certain feelings are present; our behaviour is thereby modified in intensity, and often in direction. The difference in the intensity of action under different circumstances is associated with emotional response. A man may be working at his normal level, and under the influence of emotion his work may become eager, excited, speeded up; or alternatively, under the influence of another emotion, may become listless, slack, and depressed.

Thus if a man encounter a terrifying object (e.g., if he be approached by a savage bull), certain bodily changes take place; rapid beating of heart, alterations in movements of muscles of intestines, perhaps paleness of face, trembling, hair standing on end; and certain indescribable feelings are

experienced, which are called *fear*. If in these circumstances he runs away, his whole muscular mechanism is toned up by the emotional state; he can run faster, and he feels fatigue less than under normal conditions. This state is associated with the discharge of adrenal hormones into the blood. While it is common for psychologists to speak of the *feeling* of fear as the most important feature in emotion, we must remember that the *bodily changes* are at least equally important. (See § 9).

The emotion of *anger* is aroused by anything that hampers the activities of the individual. It is accompanied by bodily changes which, to a considerable extent, resemble those accompanying fear; and by the particular course of behaviour which we term pugnacious. We see it in primitive form in the kicking, hitting out, screaming and accompanying grimaces of the infant whose will is thwarted; or in the behaviour of a touchy man who has been slighted by somebody he is not afraid of.

McDougall classifies a number of other emotions, such as disgust, pride, wonder, "tender emotion" (parental); some psychologists regard these as merely modifications of the more primary ones. McDougall associates a particular emotion with each of the principal instincts; fear with the instinct to escape, anger with the instinct of pugnacity, wonder with the instinct of curiosity, and so forth.

The more complex feelings commonly spoken of as emotions, such as admiration, reverence, gratitude, envy, anxiety, vengeful feeling, moral indignation, altruism, patriotism, etc., are most conveniently thought of as *secondary combinations of the primary emotional states, associated by habit with certain situations*.

Emotion profoundly influences behaviour. It is characteristic of a complex, whenever aroused, that it leads to emotional reactions. Through the fundamental complexes all sorts of stimuli which awaken particular associations can produce violent emotional responses. An apparently harmless word which happens to link on to a complex that embodies violent hatred may produce an apparently absurd outburst of rage; while the mere mention of a name that links on by association to a sex complex may cause, in a particular individual, obvious signs of shame or embarrassment.

An emotion blocked of its outlet in the normal direction finds an outlet through another channel. The timid clerk, bullied by an employer on whom he dare not retaliate, may relieve tension by being a tyrant in the home circle. The celibate clergyman or the spinster, to whose sex emotions the normal outlets are forbidden, may find satisfaction for them in contemplating the love of a supernatural god.

In education, success depends primarily upon awakening an emotional response. This is true even in the highest branches of study, where, by habit, the pursuit of knowledge for its own sake has become linked with emotional desires. *Interest* is the name we give to the relations we experience to a subject that awakens such a response. (Discussed more fully above, in the section on Interest).

The success of propaganda depends primarily on the extent to which it favours the successful release of emotional tension. Thus, in proportion as the workers in any country are thwarted in their endeavours to secure a fuller life and are faced with the constant menace of destitution or with actual destitution, in that degree will the emotions of anger and hatred be prominent in the complexes which make up their individual personalities and their collective class-consciousness. Successful propaganda among such workers will so direct the urge of their emotions that they will seek to create a better social system in place of that under which they suffer.

## § 108

The various social groups and classes, each with a group-consciousness or class-consciousness peculiar to itself, are *partial herds*. They may form constituents of greater herds, each with a more or less distinctive herd-consciousness. Such a greater herd is the *nation*. Under the stresses of wars each belligerent nation behaves as a remarkably integrated and comparatively homogeneous herd until the stress becomes intolerable, as it did in Russia in 1917.

The ideal of a really *universal* herd, embodied in pious hopes for the "parliament of man, the federation of the world"

has underlain the various attempts to form international federations. Among extant institutions the Workers' Internationals embody the only genuine advance towards the realisation of this ideal, for they aim at the ultimate fusion of the warring herds of possessing and dispossessed, parasites and workers, in a universal herd. The members of this universal herd are to have the common bond of equal responsibility to work, and equal rights to enjoy the product of their work. When achieved, its solidarity will render the "national" herds mere territorial cliques.

The historic struggles between craft unionism and industrial unionism illustrate the partial herd complex (embodying professional pride, craft mystery and jealousy of the uninitiated) fighting against an endeavour to create a more universal herd in the world of labour; the Shop Stewards' Movement, the Industrial Workers of the World (I.W.W.), and the One Big Union Movement, represent additional efforts towards the attainment of the universal proletarian herd.

## § 109

In this "Outline" we were concerned with psychology as part of the fighting culture of the proletariat. We have learned that such freedom as man may possess can come only through knowledge; through knowledge of the non-living material universe; through knowledge of biologic forms and forces; through knowledge of economic and social forces; through knowledge of the working of men's minds. All these branches of science are interlinked, but in many respects the last is a key to the others.

We know nothing of "absolute truth," nothing of "final answers." The greatest truths are only imperfect diagrams or working plans of parts or aspects of our environment. The modern test of truth is the pragmatic or practical test: *Does it work?* Does it fit known facts? Does it enable us to refer new facts to a place in the organised system of knowledge? Above all, does it help us to guide our conations in conformity with the reality principle? If so, it is true enough

for our purposes, and is "truth" for our class and generation. The classless society of a new day will discover new aspects of truth. Sufficient for us to grasp those truths which will help us to hasten the birth of the new order, and, perhaps, to lessen the birth-pangs.

## A SYLLABUS OF 12 LECTURES

Based upon *The Outline of Psychology*.

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## SUGGESTIONS FOR STUDY

The book is divided into twenty-six short chapters. The contents have been so arranged as to furnish a connected and progressive course. The book is also designed to provide a complete course for the ordinary student. Those who wish to follow any branch further can usefully consult one or more of the works mentioned in the bibliography.

No attempt has, however, been made to suggest any definite courses of advanced study. The beginner will usually encounter unexplained difficulties if he attempts, unaided, to study isolated chapters of larger works. The majority of books named in the bibliography cover a wider field than the average I.W.C.E. student will need to traverse. The bibliography is included mainly for the convenience of teachers and class leaders. Every Marxian student should, at some stage of his psychological studies, read J. B. Watson's *Psychology from the Standpoint of a Behaviourist*.

The *Outline* begins with a brief survey of behaviour (Chaps. I and II), followed by a description of the material mechanism underlying behaviour and a preliminary account of its working (Chaps. III to VI). Chaps. VII to XIII deal with the working of the mechanism of behaviour in the complicated combinations of actions known as habit, instincts, and impulses. Chaps. XIV to XVII deal with the two levels of our mind, the conscious and the unconscious. In Chaps. XVIII to XX we discuss choice and reason. Chaps. XXI and XXII discuss differences in individual temperament, intelligence, etc., and their social significance. Chaps. XXIII and XXIV trace the influence of certain well-marked and widely prevalent tendencies (impulses and complexes) in shaping social behaviour. Chaps. XXV and XXVI are concerned with the psychological aspects of class consciousness and the class struggle, and of other fundamental phenomena in man's social life.

Class leaders who already possess a knowledge of psychology, but who choose the *Outline* as their class textbook, may vary the order and method of treatment as their own experience and the special needs of the students may dictate. When the book is used for self-instruction by study circles and by classes in districts where no specially qualified class leader is as yet obtainable, the students will do well to read and discuss the volume chapter by chapter in the existing order.

Here are some supplementary hints :—

(1) When any illustrative example of a principle is given in the text, the student should always cudgel his brains to find *additional examples* out of his own experience. This will be of enormous help both towards the understanding and the memorising of the principle.

(2) Every new or unfamiliar word should immediately be *looked up* in the glossary. If not found there, use a dictionary. Remember that if a passage seems difficult to understand, the probable reason is that the student does not fully grasp the meaning of one or more of the words employed.

(3) The *Index* should be continually used for reference forwards and backwards.

## SUGGESTIONS FOR STUDY

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(4) A most valuable method of study is *definition writing*. When reading a section or a chapter, underline unfamiliar words lightly in pencil, or make a list of them on a piece of paper. All such words should be looked up in glossary and/or dictionary as you go along; but do not at this stage commit the meanings to heart, for that would be only "parrotting." At the end of section or chapter write out a definition (explanation) of all these difficult terms. Use your own words, which should be as few and simple as possible. Make sure that your explanation of the word fits the use of it in the text, and clears all difficulty out of your mind. Then compare your definitions with those in the glossary or dictionary; compare them with those made by your fellow students; discuss with them which are the best and simplest definitions and why. Finally, re-read the section or chapter with your amended definitions in your mind, and memorise the best definitions. This is the quickest and easiest way of "getting the guts out" of a new subject of study. When you really understand all the words in the book you will have a working knowledge of the subject.

(5) When studying the brain (Chaps. VI and VII) it will greatly help you if you get a sheep's brain (from a butcher) and examine it. Further knowledge can be gained by making a putty model of the brain. Directions will be found in Hill's *Manual of Human Physiology*.



## GLOSSARY

[When a term has been tersely defined in the text, reference is sometimes made in the *glossary* to the appropriate page or section (§). Generally speaking, however, the student must use the *index* in order to find where the subject is more fully discussed in the text. The less familiar words are stress-marked thus, "libi'do"; the ' indicates that in this word the stress or tonic accent is on the second syllable. In some cases a further hint as to correct pronunciation is added. Thus "[li'bee'do]" shows that the stressed "i" is pronounced in an unusual way. In unfamiliar words, final (e) or (es) not pronounced is put in parenthesis. Words not found in the glossary should be looked up in a dictionary.]

- abdo'men.** The belly. The front part of the trunk below the chest.
- abstra'ction.** The process by which the mind separates out from two or more objects a part or property common to both or all of them.
- adaptation.** The removal of a stimulus.
- adre'nalin.** A hormone (which see) supplied to the blood by the adre'nal (or suprare'nal) gland.
- a'ffect.** "Feeling. The essential constituent of emotion." (Jones.)
- a'fferent nerve.** A nerve which conveys impulses from a sense organ to the brain or the spinal cord. In this book termed "incoming nerve."
- a'nimism.** The theory that the behaviour of the living organism depends upon the working of a supernatural spirit or soul (Latin, *animus*). In anthropology, the belief of primitive man that the movements of lifeless bodies (wind, the sun, clouds, etc.), now universally regarded as "inanimate," are due to an indwelling spirit. Animism is akin to vitalism, which see.
- appre'hension.** In psychology, practically equivalent to perception, which see. In this sense has nothing to do with "fear."
- associa'tion, asso'ciative memory.** The process by which stimuli become linked together, resulting in the association of ideas, or memory. See § 26.
- associa'tion by contigu'ity.** } See § 71 and § 72.
- associa'tion by simila'rity.** }
- attention.** Reaction to a stimulus emotionally weaker than others that are simultaneously tending to occupy the centre of consciousness, the reaction being attended by a sense of effort. Compare with interest. See § 58.
- au'ditory.** Having to do with hearing.
- autono'mic nervous system.** See § 19.

## GLOSSARY

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- au'tosugge'stion.** The process in the unconscious in virtue of which the thought of an action arouses an impulse to perform the action; or in virtue of which the expectation of a result leads an individual to contribute towards bringing about the result. The original thought or expectation and the impulse or action are above the threshold of consciousness; the autosuggestive link is below the threshold. See *heterosuggestion*, *suggestibility*, and *suggestion*.
- a'xis-cy'linder pro'cess.** The main fibre of a nerve cell.
- behaviour.** The sum of the actions of a living organism, regarded as a whole.
- bio'logy.** The study of life processes, both in animals and plants.
- brain-stem.** The basal parts of the brain, excluding the cerebral hemispheres and cerebellum. See § 24.
- cells.** The units of living matter, out of which the bodies of animals and plants are built up.
- ce'nSOR.** The figurative name given to the forces at work in the mind whereby a memory or an impulse is repressed into the unconscious, and whereby its reappearance in consciousness is prevented.
- centres.** See *nerve centres*.
- cerebe'llum.** An upgrowth of the brain behind and (in man) underneath the cerebral hemispheres. Its main function is the unconscious co-ordination of movements.
- ce'rebral he'mispheres.** Two (right and left) great masses of nervous matter forming the most conspicuous part of the human brain. They contain the mechanism which underlies intelligence, memory and reason.
- ce'rebral co'rtex.** The outer substance of the cerebral hemispheres; consists of *grey matter*, which see.
- chain of re'flexes.** Behaviour which can be resolved into a series of reflex actions, the completion of each act forming the stimulus for the next. See § 23.
- cli'nical.** Having to do with the medical or surgical examination or treatment of patients.
- cona'tion.** The striving of the individual towards self-realisation and self-expansion; a fundamental characteristic of life. See § 3.
- co'mplex.** "A group of emotionally invested ideas partially or entirely repressed." (Jones). The word "sentiment," as used by Shand, McDougall and others, has much the same significance. Used in this book in a wider sense, so as to include *constellation*, which see.
- co'ncEpt.** The image of an object of experience (or the generalised image of a group of similar objects) arising in the mind without the sense organs contributing fresh data. The process whereby concepts are formed is termed *concep'tion*. See § 69.
- condi'tioned response.** A reaction which, through special training, has come to respond to a stimulus differing from the one which naturally arouses that particular response. See § 28.
- constella'tion.** "A group of emotionally invested ideas not repressed." (Jones.)

- convolu'tions.** The folds of the cerebral cortex. Their existence greatly increases the surface of the cerebral hemispheres; hence there is more grey matter; consequently the number of possible association paths is greatly increased. Extreme convolution of the brain surface is peculiar to the human species.
- cra'nial nerves.** The nerves entering or leaving the brain, as distinguished from the spinal nerves.
- cre'tinism.** A condition of incomplete mental and bodily growth (dwarfing and partial or complete idiocy) due to failure of the **thyroid** (which see) gland to develop properly. **Cre'tins** are common in certain valleys of the Alps and are occasionally found elsewhere. See § 14.
- dece'rebrated.** Term applied to an animal from which the cerebral hemispheres have been removed by operation.
- defe'ctives.** Short for "mental defectives," *i.e.*, the feeble-minded, the insane, etc.
- delu'sion.** "False belief reposing on no logical foundation." (Tridon).
- de'ndrit(es).** The branched processes of a nerve cell which receive the messages transmitted from other nerve cells.
- dete'rminism.** The theory that nothing which happens is due to chance, but that happenings are caused or determined by what has gone before. For the bearing of this theory on the problem, "What part can human conation play in the course of events?" See § 3 and § 66.
- dissocia'tion.** The break-up of consciousness into parts which lead independent existences. See § 62.
- do'rsal.** Belonging to or situated towards the back. The opposite of **ventral**, which see.
- dual personality.** A form of **dissociation**. See § 62.
- e'fferent nerve.** A nerve which conveys impulses from the brain or the spinal cord to a work-performing organ. In this book termed "outgoing nerve."
- emo'tion.** A bodily state accompanied by characteristic feelings differing for each emotion (fear, anger, etc.). Arises in response to a specific stimulus and greatly influences behaviour. See § 107.
- envi'ronment.** The surroundings in which a man or an animal lives. Man's environment includes the world of nature, the commodities and tools he has created, the accumulated knowledge of society and the other members of society.
- excita'tion.** The effect of a nervous impulse (or some other influence) on a work-performing organ (muscle or gland) when, as a result of the excitation, the organ works. The opposite of **inhibition**, which see.
- exhibi'tionism.** The impulse to "show off."
- e'xtrovert.** See § 82.
- fatalism.** The mental attitude characteristic of certain Oriental peoples. The fatalist is one who submits unquestioningly to the "decrees of fate"; whereas the determinist, the Marxian, aims at knowledge of and active co-operation with the laws of nature. See **determinism**; also § 3 and § 66.

- ficti'tious goal.** The image of an end to be attained, which the mind sets up as **rationalisation** (which see), thus explaining to itself the urge of an unconscious motive.
- function.** Activity proper to anything, mode of action by which it fulfils its purpose. In § 58 the word is used in its *mathematical* sense, *i.e.*, a quantity which is larger or smaller in proportion as another quantity is larger or smaller.
- ga'nglion.** A mass of nerve cells; generally appearing as a knot or thickening upon a nerve.
- grey matter.** Part of the substance of the spinal cord and the brain; composed of the bodies of nerve cells.
- hallucina'tion.** See § 69.
- he'donism** (hee-donism). The purposeful pursuit of definitely foreseen pleasure.
- he'terosugge'stion.** The subconscious realisation of an idea suggested by another. Also, the act of suggesting an idea to another. See **autosuggestion** and **suggestion**.
- ho'rmon(es).** Chemical substances, secreted into the blood by various glands which influence behaviour, growth, etc. Adjective, **hormo'nic**. (Pronounce: hoar-moan, hoar-monn-ic.)
- hy'pnotism.** The process by which the **hypno'tic state** or **hypno'sis**, a condition akin to natural sleep, can be induced. In the hypnotic state, **suggestibility** (which see) is considerably increased.
- idea.** An image built up in the mind out of impressions received by the senses and memories of former impressions.
- ide'alism.** In philosophy, the point of view that consciousness is the only thing that really exists, and that matter has no existence except as an object in consciousness.
- identification.** The process whereby the observer imaginatively puts himself in the place of one whom he is observing, or the reader puts himself in the place of the hero of a novel, etc.
- illu'sion.** See § 69.
- illu'sion of fina'lity.** The idea that the institutions with which we are familiar are permanent, or that mankind can attain to a permanently stable state of affairs.
- image.** The unit of thought. The association in the mind of stimuli with the memory of stimuli received on different occasions, to form a composite picture.
- imagina'tion.** See § 69.
- inferiority co'mplex.** The complex which results from the thwarting of man's natural urge to self-expansion and which (when repressed into the unconscious) impels him to try to achieve power along some other line than that in which his conation is blocked.
- inhibi'tion.** The effect of a nervous impulse (or some other influence) on a work-performing organ (muscle or gland) when, as a result of the inhibition, the activity of the organ is lessened or completely stopped. The opposite of **excitation**, which see.
- inna'te.** Inborn.
- i'nstinct.** See § 35.

- inte'gra'tion.** The process whereby a number of distinct acts, resulting from the working of different reflexes, are united into a co-ordinated whole, the result of which is behaviour. (Compare the integration of the activities of a number of workers in a factory, each engaged in producing a single part of the product. Integration here results in the manufacture of a completed product, such as a motor car, a pair of boots or a box of matches.)
- inte'lligence.** The capacity for rapid adaptation to new circumstances.
- i'nterest.** The mental state which certain stimuli arouse, in which we are impelled to pay *effortless* attention to certain objects and ideas and to ignore other objects and ideas. Compare with *attention*. See § 57 to § 58.
- interme'diate ne'urone.** A neurone connecting an incoming neurone with an outgoing neurone or one connecting any two neurones with each other.
- introspe'ction.** The study of the mind by self-examination.
- i'ntrouert.** See § 82.
- inversion.** See § 63. (N.B.—Nothing to do with “sexual inversion.”)
- libi'do** (li-bee-do). “Sexual hunger; the mental aspect of the sexual instinct.” (Jones.) By some writers used in the sense in which *conation* is used in this book.
- M.C.H.** An abbreviation for Materialist Conception of History. See § 6.
- ma'mmals.** The highest class of vertebrate (backboned) animals; those that give suck to their young.
- ma'sochism.** A perversion of the sexual instinct in which sexual gratification occurs on submitting to the infliction of cruelty.
- materialism.** See § 7.
- Materialist Conception of History.** The Marxian theory that the changes in human society are ultimately determined by material conditions.
- me'dium.** One who claims to have, or is supposed to have, the faculty of acting as a means of communication between “disembodied spirits” and human beings. When conveying these alleged communications, mediums often pass into a state of trance akin to hypnosis. The faculty they are supposed to possess is known as *me'diumship*.
- medu'lla.** Short for *medulla oblonga'ta*. The hinder part of the brain-stem, continuous with the spinal cord.
- magalomania.** Insane self-exaltation. Somebody imagines that he is Jesus Christ, Jehovah, President Roosevelt or Adolf Hitler.
- memory.** The process by which our minds associate present events with past events.
- metaphys'ics.** Speculations concerning the nature of ultimate reality and concerning the ultimate character of knowledge.
- mo'rbid.** Same meaning as *pathological*, which see.
- mo'ron.** An adult who throughout life remains at the mental age of about twelve. See § 88.

- mo'tor.** Causing movement. **Motor nerves** are outgoing nerves conveying the impulses that cause muscles to contract. **Motor centres** or **motor areas** are parts of the brain which control the movements of particular groups of muscles.
- nerve.** A bundle of nerve fibres not forming part of the brain or the spinal cord.
- nerve cells.** The individual units of which the nervous system is made up.
- nerve centre.** A group of nerve cells in the brain or the spinal cord controlling some important bodily function. Thus, the **respiratory centre** is a group of nerve cells in the medulla, controlling the breathing movements; the **speech centre** is part of the grey matter of the cerebral cortex, in which word-memories are stored and by which the movements of speech are controlled; and so on.
- nerve fibres.** The individual fibres along which nervous impulses travel.
- nervous i'mpulse.** The excitation, stimulus, or “message,” which travels along a nerve fibre, or through a *synapsis* (which see) from one nerve cell to another, or from a sense organ to the spinal cord and the brain, or from a nerve centre through a *neurone pattern* (which see) to a work-performing organ, etc.
- nervous system.** The general name for all the nervous structures in the animal body, including (in the higher animals) the brain, the spinal cord and all the nerves.
- neu'ron(e) or neuron.** A nerve cell with its fibre (*axis cylinder process* (which see) and *dendrites* (which see)).
- neu'rone pattern.** The group of neurones through which a nervous impulse passes.
- neuro'tic.** A person suffering from nervous disorder, or a morbidly sensitive person.
- nu'cleus.** A conspicuous body in the centre of the *cell* (which see).
- obje'ctive.** Having to do with the object perceived by the mind, as contrasted with the mind which perceives. See *subje'ctive*.
- o'ptic lobes.** Two swellings (right and left) on the brain-stem, conspicuous in the brains of lower vertebrates.
- o'rgan.** A part of the body which performs a particular function or group of functions. (e.g., eye, hand, kidney.)
- patholo'gical.** Anything occurring in states of illness, as contrasted with what occurs in states of health.
- patho'logy.** The science of disease or the study of illness.
- pe'rcept.** The image formed in the mind when, by means of association with the memory of past impressions, the mind unconsciously completes an impression received by the senses. The *process* whereby percepts are formed is termed *perce'ption*. See § 69.
- pheno'menon.** A Greek word for “event.” Literally it means an “appearance,” i.e., that which “appears” to the senses. Plural, *phenomena*.
- physio'logy.** The study of the working of the (healthy) living body.
- pleasure principle.** The innate tendency to gratify wishes without regard to consequences. See *reality principle*.
- pra'gmatism.** The view that the only practical test of the truth of a theory or opinion is whether it works.

- process.** In biology, an elongated extension of a cell (which see). The **axis-cylinder process** and the **dendrites** of the nerve cell are differently shaped processes.
- psy'choana'lysis.** A psychological school founded by Sigmund Freud (see § 54).
- psycho'logy.** The study of behaviour and of the causes which determine or modify it.
- rationalisa'tion.** "The inventing of a reason for an attitude or action, the motive of which is not recognised" (Jones). An action or thought which in actual fact is due to some repressed impulse, is explained or justified as the result of logical, plausible, "respectable" or "disinterested" motives.
- reality principle.** Through associative memory man gradually learns to check the wish for immediate gratification. In the light of past experience he shapes his behaviour in order to reach a distant aim. The principle at work here is known as the reality principle. It conflicts with the **pleasure principle** (which see).
- reasoning.** See § 70.
- rece'ptor organ.** A sense organ; an organ which receives impressions from the outer world, such as the eye, the ear, the organ of touch, etc.
- recogni'tion.** See § 69.
- recolle'ction.** See § 69.
- re'flexes, or reflex actions.** Those reactions to stimuli in which the stimulus travels only through the spinal cord, and not through the brain. Reflexes are involuntary (e.g., pupillary reflex).
- re'flex arc.** The group of nerve cells (with a receptor organ and a work-performing organ) which underlies a reflex action.
- repre'ssion.** "The keeping from consciousness of mental processes that would be painful to it." (Jones.)
- resi'stance.** "The instinctive opposition displayed towards any attempt to lay bare the unconscious; a manifestation of the repressing forces." (Jones.)
- respo'nse.** The behaviour of an individual, or the action of a part of the individual which follows the application of a **stimulus** (which see).
- sa'dism.** A perversion of the sexual instinct in which sexual gratification occurs on performing or watching acts of cruelty.
- se'n'timent.** An emotionally tinged association of ideas concerning an object (abstract or concrete). The word is often used for what in this book is termed a **complex** (which see).
- somnambulism.** Sleep-walking.
- spinal cord.** The part of the nervous system within the spinal canal, continuous with the medulla and giving off the nerves to the limbs, the neck and the trunk.
- spinal nerves.** The nerves entering or leaving the spinal cord, as distinguished from the cranial nerves.
- spi'ritualism.** In philosophy, the doctrine that spirit is the only reality. Contrast with **materialism** and compare with **animism**. Distinguish from **spiritualism** in the modern everyday sense of attempts to communicate with "disembodied spirits."

- sti'mulus.** See § 3.
- subco'ncious.** Used in this book as an alternative term for **unconscious** (which see).
- subje'ctive.** Having to do with the mind which perceives, as contrasted with the object which is perceived. See **objective**.
- sublima'tion.** The process by which desires are transferred from a socially useless or harmful to a socially useful manifestation.
- suggestibi'lity.** The liability to be influenced by suggestion.
- sugge'stion.** A general name for **autosuggestion** and **heterosuggestion** (which see).
- superio'ri'ty co'mplex.** The individual's emotionally tinged conviction that he excels others in one or many respects. Often a subconscious reaction against the **inferiority complex** (which see).
- sy'mbolism.** Forces of association, at work in the unconscious, which substitute for certain images, other images (symbols) having some element of similarity with the originals. Often the relationship between the symbol and the original image is fantastic or remote. The symbolisation is a manifestation of the forces of **repression** (which see), the unconscious allowing the repressed image to appear only above the **threshold** (which see) in a symbolical form the true significance of which is not manifest to consciousness. The process is conspicuous in dreams, but many of the thoughts and actions of our waking life are symbolical of repressed complexes.
- sympathe'tic nervous system.** The middle portion of the autonomic nervous system. See § 19.
- syna'psis.** The minute space between two nerve cells or their processes across which a nervous impulse passes from neurone to neurone. (Sometimes written **synaps(e)**. The plural in either case is **synapses**.)
- system of organs.** A group of organs either of like structure in different parts of the body or else connected functionally for the regular carrying out of some particular physiological purpose. Thus are constituted the muscular system, the digestive system, the nervous system, the circulatory system, etc.
- teleo'logy.** The theory that things "exist for a purpose." Teleology is characteristic of religious thought. For example, people used to believe that all other living beings were created for man's use; this was "God's purpose" in making them. In science, when the existence of anything is explained by the function or purpose it fulfils, the "explanation" is said to be **teleolo'gical**.
- te'mperament.** See § 81.
- tender-minded type.** See § 82.
- tha'lamus.** A part of the front portion of the basal brain-stem.
- threshold of consciousness.** See § 52.
- thy'roid gland.** A gland in the front of the neck. Its secretion (**hormone**) has an extensive influence upon bodily and mental growth. See **cretinism**. (This organ is often spoken of as the **thyroid body** or simply as the **thyroid**).

**tissue.** A number of cells uniting to form a more or less homogeneous (of-like-kind) part of the body—e.g., muscular tissue, fatty tissue, nerve tissue.

**unconscious.** A region of the mind below the threshold of consciousness. See § 52 to § 55. (Also termed the **subconscious**).

**variation.** The name given to the observed fact that individual men (or the individuals of any species of animals or plants) differ by inborn nature from one another in their various characters, such as (in man) stature, complexion, intelligence, etc. See § 87.

**ve'ntral.** Belonging to or situated towards the belly side. The opposite of **dorsal** (which see).

**ve'ntricles.** The cavities within the brain. (Note that during life these "cavities" are not empty but are filled with fluid.)

**ve'rtebrate.** Any animal with a backbone.

**vi'scera.** The internal organs of the body; the stomach, the intestines, the lungs, etc. (The singular form of "viscera" is **vi'scus**.)

**vi'sual.** Having to do with sight or vision.

**white matter.** Part of the substance of the brain and the spinal cord; composed of nerve fibres.

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