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THE PSYCHOLOGICAL BASIS

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Paper 2

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The present paper is not an attempt to give a complete account of human psychology; but only to introduce some notions and terminology that are significant for our educational projects. In order to work with a situation, we must form a mental image or model, in terms of which we shall think and attempt to communicate. The ensuing sections describe the model we use.

We start with the premise that man is a highly structured complex so that he cannot be adequately described in terms of any linear model. He is a material object, a living organism, a thinking, feeling, speaking and tool-using animal, a self, a person and much more besides. This complex being is born to inherit the experience of fifty thousand generations; but can do so only by the efforts of the generation that gave him birth. The process of education-to be complete and balanced-must be as complex as man himself; and, in our modern world, it must reckon also with the growing complexity of his environment. One requirement of success is an adequate psychology that will take account not only of man as a thinking animal, but also of his potential for developing higher functions such as creativity and judgment, charity and the spirit of service.

We have adopted, as a working hypothesis of proved heuristic value, a scheme of psychological characteristics¹ derived from many sources. This provides a model in terms of which all the elements of the development of a human being can be described.

1. HUMAN CHARACTERISTICS

Human characteristics are of three different kinds, each of which must be evaluated separately. These three elements consist of what he *does*, what he *is* and *how* he acts.

Although distinct in nature, the three elements act in combination, and the paired combinations also require to be separately studied and evaluated. The whole man is the integrated structure of all three elements. There are thus seven groups of parameters that must be taken into account in any complete assessment of a human being.

The three characteristic elements endow man with a threefold nature. In one nature, he is a complex mechanism performing a wide variety of functions, some of which are innate and others acquired by interaction with the

environment, including education and training. We use the term *Function*² for all the characteristics which can be studied and described in mechanistic terms.

In his second nature, man is an entity that experiences different states of awareness. This entity has characteristics that cannot be described in terms of mechanism. There is nothing strange about such a conception. A suit of clothes has major and subsidiary functions, all of which can be described in terms of mechanism: but it is also new or old, becoming or unbecoming to the wearer. These characteristics tell us what the suit is rather than what it does. Man has many such "being-characteristics" and their recognition and assessment is no less important than the study of his functions. We find that many of them are capable of quantitative assessment though not in terms of any single parameter. They are recognizable in such qualities as stress-strength, equanimity, courage, integration. The ability to take responsible decisions in more or less complex situations and within lesser or greater regions of space and time is included in the being group of characteristics. This can be understood if we recognize that this ability is not itself a mechanism, but the manner in which the mechanism responds to a challenge. Generally speaking, being characteristics can be developed, though by means different from those which are required for training functional mechanisms.³ The simplest form of being-development is the acquisition of strength by way of challenge and response.

The third aspect of human nature is that which determines the sense and purpose of a man's existence and this we term his *Will*.⁴ Whereas the functional mechanisms characteristic of *Homo sapiens sapiens* are broadly the same for all people; and being characteristics differ from one person to another in degree rather than in kind, there is also in every human person an individual character that is unique and apparently unchanging. We call this Individuality and associate it with the Will as the power of entering into relationships. Every human individual belongs to one of a limited number of will-types, some of which are common, others are rare and some extremely rare. Although individuality is unique, there are certainly will-types that can be recognized in descriptions of people as initiators, leaders, perseverers, finishers, impulsives, conservatives, etc. The characterization of individuality is a necessary part of any assessment because it determines the situations in which a given person can operate successfully or be altogether at sea. Although individuality appears to be inherent and unchangeable, it is possible through the development of being and the functional powers to compensate for will deficiencies and to make the fullest use of positive will characteristics. Consequently, the study of will presents problems quite different in kind from those that arise in assessing characteristics of function and being they are problems of doing rather than knowing.

The whole man is a combination of the characteristics of his functional mechanism, his being and his will. This we shall term his *Self-hood*. Confidence in the prediction of a man's performance under situations that may arise in the future is possible only if he is known in his entirety, and this means not only assessment of the three kinds of characteristics separately, but also a knowledge of their operation in pairs and as an integrated whole, that is, as a Self.

Generally speaking, total assessment is impossible because there are characteristics that remain hidden even with exhaustive observations and tests. It is, however, usually possible to devise tests and criteria for the three paired characteristics, function-being, being-will, will-function.

The seven primary and composite characteristics can be represented by a symbolical diagram.

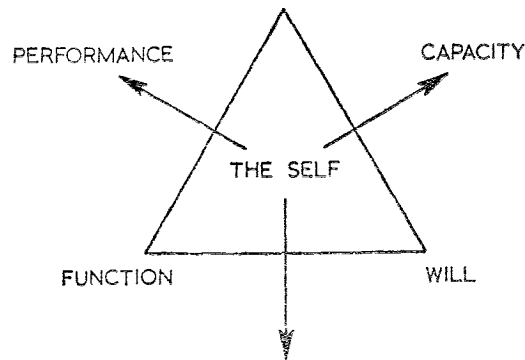


Fig. 1 The Human Self

In the centre of the diagram we place the SELF which is the composite whole or human person. The combinations in pairs are more than mere sums, but the resultants of interactions, the completeness of which is a measure of the development of the person concerned. We shall return to these composite characters after considering the three main elements separately. We shall end with a brief statement of the overall characters of the human self-hood.

2. THE ELEMENT OF FUNCTION

Function can in principle, though not always in practice, be recognized and studied in behaviour. In man, function is not qualitatively or quantitatively invariant; but, on the contrary, is capable of improvement and development. Improvement is an ordering process and we have defined *knowledge* as the product of the ordering of the functions.⁵ The content of the mind is a stable condition of functional order. Functions can also develop in the range of behaviour patterns they can display. For example, speech is a functional pattern that develops after birth. Vision is a functional pattern latent at birth, but capable of considerable development and expansion. Conceptual thought usually appears in man as he approaches puberty when the sexual function develops. Thus, functions develop and acquire ordered structures which constitute knowledge and skill in action.

We can distinguish four principal functional mechanisms in man. These are so different in their operation, and the physiological mechanisms they employ, that they must be treated separately for purpose of education, training and assessment. These are

(1) Sensory-Motor Functions

These include sense perceptions, instinctive reflexes, all uses of the voluntary muscles for the purpose of acting upon material objects. They are placed in a single category because they have in common the property of relating the human body to other material objects. In the educational process the sensory motor functions require attention for:

- a. The care of the body and the development of its natural powers.
- b. The improvement of perceptions, especially of sight and sound.
- c. The acquisition of manual and cognate skills.
- d. Direct contact with and insight into the processes of nature.

(2) Affective Functions

These are physiologically associated with the sympathetic and pneumo-gastric nerves and with the blood chemistry. They determine the emotional state, but they also include cognitive and decision-making operations. Like and dislike, interest, persistence, irritability, etc., fall into this category. When operating on the conscious level, it determines emotional stability, capacity for making responsible judgments.

(3) Intellectual Functions

Associated mainly with the thalamo-cortical ganglia, these functions are characteristically human and give man the power to relate himself to events remote in time and space, past, future and other; and to form and operate with mental images and symbols. The intellectual function can operate on all levels, but we are aware of it only between the automatic and conscious levels, that is the region that constitutes what we commonly call the "mind".⁶

(4) Inter-personal Functions

Whereas the other functions contribute to many and varied interactions and communications between persons, there is evidently also a mode of direct connectedness, obvious in the sex function, but more general in character as it includes the ability to enter into group associations and extends to social structuring. It is the means whereby effective team work is established and fostered. Defects in the I.P. function lead to isolation, revolt and the breakdown of organized work. They must be avoided or remedied in any educational system aiming at fully integrated human adults.

The Development of the Functions

All child psychologists agree that there are critical transitions when new modes of functioning should come into operation. The sensory-motor function develops from conception and even before birth external as well as inner movements are acquired. The senses develop from birth and motor skills can be acquired at any time. The emotional function seems to remain dormant until 4-5 in girls and 6-8 in boys. The instinctive reactions of earlier years are often mistaken for true feelings: but the difference is obvious for any attentive observer. The intellectual function in its true sense as the power of making inferences from the known to the unknown does not develop until 8-12 in girls and considerably later in boys.

The inter-personal function probably does not become active until after puberty. During childhood it is simulated by the sensory-motor function, which has an almost limitless capacity for imitation. Between 9 and 14 years the emotional function sets up an interaction with others that is not truly inter-personal. Indeed, probably owing to the neglect of personal relationships as an element in the upbringing of children, the inter-personal function in most men and women remains infantile throughout life. This is responsible for many of our personal and social difficulties. It is quite wrong to regard the inter-personal function as exclusively sexual in its operation.

We shall not touch at this point upon the higher functions, as these depend upon the element of being that must be considered next.

Each of the four groups of functions is capable of being taught and trained. Knowledge and skills are functional characteristics. The narrow view of education restricts it to the training of the intellectual and sensory-motor functions and the acquisition of behaviour patterns of knowledge and operation. Nevertheless, even in the narrowest sense, education must seek the right development of being. During childhood, being grows side by side with function and unless the right conditions are provided, the growth may be unbalanced and even defective.

3 THE ELEMENT OF BEING

Everything that enters our experience is an organized complexity; this is as true for the atom as for the galaxy and it is obviously true for man. It is generally agreed that the best measure of evolutionary progress is the degree of coherent organization that a species has attained. It is also true that the human individual is capable

of developing towards a higher degree of organization accompanied by an enrichment of content. We shall use the word *Being* to express the organized coherent complexity that a given person has attained. It is, of course, possible to regard being as a stationary quantity and to ascribe any development solely to the functional mechanisms. We have called this the "psychostatic" view of man.⁷ The contrary, "psychokinetic", view regards the being of man as capable not only of development but even of transformation from one level to another. Our attitude towards education will largely depend upon which of the basic views of man's being we regard as valid.

The extreme psychostatic view disregards Being and Will and treats education as a process of functional training. It may recognize that the child has potentialities; but these are taken to be of the same kind as the potentiality of an acorn, which must either become an oak or perish. Psychostatic training may be varied and take account of all four groups of functions; but it does not aim at a *change of potentiality*, which is the condition of true evolutionary development. Growth of potentiality means a higher degree of organization and order. The psychokinetic view of man holds that his level of organization can be raised without loss of order and that this is true evolution. The psychokinetic hypothesis ascribes true evolution to at least four organized complexities of which we have considerable and detailed knowledge.

1. All life on the earth-the Biosphere.
2. Humanity as a whole.
3. Human societies.
4. Individual man.

Education is concerned with the third and fourth modes. The Systems Integrated School is an evolving society and all its members, staff and pupils, are to be given the possibility of evolving. Their evolution is fundamentally a change of level and therefore of *Being*. Being, in this context, includes most of what is commonly called "character" and it is seen in attributes like stability, stress-strength, balance. It includes also a property that is seldom described and yet recognized by anyone when they are in the presence of a strong well-integrated person.

Being is both qualitative and quantitative. The qualitative element is given by the *pattern* of organization and the quantitative by the degree of *coherence*. The first can be observed in the property of *togetherness*, which includes adaptability, resilience and the ability to learn in new and unexpected situations. The quantitative element of being is associated with the *level* at which a given person can operate.

The notion of *levels* is of decisive importance for educational psychology and we have studied it by a variety of methods over many years. There is evidently a general "stratification of existence"⁸ from the least possible degree of organization to the total organized complexity of the universe. In agreement with others,⁹ we assign twelve distinct levels each of which is associated with a specific mode of being. We also find that each mode of being corresponds to a kind of possible experience and this can well be treated as a characteristic "energy". With this connection, there are twelve basic energies which we define by the symbols E1, E2, . . . E12, where E12 is the totally unorganized energy of random motion or heat. These energies fall into three groups associated respectively with inert matter, living organisms and universal or cosmic systems. They are accordingly referred to as *material*, *vital* and *cosmic* energies.¹⁰ We have found that this scheme provides a promising working hypothesis for the unification of science and psychology.

The following table gives the names of the twelve energies and their distinguishing properties.

Cosmic Energies

E1 **Transcendent Energy**. This is by hypothesis beyond any possible human experience and is included in the scheme to satisfy the requirement of continuity of development from complete disorganization to the (hypothetical) complete organization of the cosmos.

E2 **Unitive Energy**. This represents the upper limit of possible (mystical) experience of the unity of all Being. It is taken to be universal and super-personal. Nevertheless, it is taken to be the energy associated with the supreme personal experience of mutual absorption of two human selves. It may also be regarded as the

driving force in the evolutionary process, the *élan vital* by which all existence moves towards integration of being.

E3 Creative Energy. We have here the highest energy level that enters directly into ordinary human experience and can, therefore, be studied by psychological (as distinct from spiritual) techniques. Creative energy is associated with sex forces and therefore present in all forms of life having sexual reproduction. It is, however, capable of activating all functions in man, and this distinguishes him from other animals. Creative energy is supra-conscious so that we can, in general, be aware of it only by its effects. It thus has the character of apparent spontaneity and unpredictability in its operation. It is taken to be the energy responsible for all creative activity in art, science, and in practical undertakings.

E4 Conscious Energy. The fourth and least coherent of the universal or cosmic energies. As the name implies, it is the source of true consciousness in man and corresponds to the highest level of mental activity. It is not normally organized in man, but activates the functions in sporadic and usually intermittent fashion. Nevertheless, it is capable of being organized and such organization is a decisive mark of the psychokinetic transformation.

Vital Energies

E5 Sensitive Energy. This energy is commonly confused with that of consciousness. It is common to all forms of life, though in very different degrees of organization.¹¹ Vernet¹² has shown that the pattern of sensitivity is characteristic of every organic species and on this bases his rejection of transformist evolution. We have found that the organization of sensitive energy in man can vary over very wide limits and also that it has varied properties corresponding to different kinds of mental awareness, such as sensation, feeling, thought, instinct. The sensitive energy receives and retains mental images and other elements of memory. It is the principal activating energy of the human functions of sensation, thought and feeling. It is the "mental energy".

E6 Automatic Energy. The subconscious level of human experience. All reflex operations in man and animals, both innate and conditioned, operate with automatic energy. The automatic energy is insensitive and in the functions operating with this energy produce only a vague mental awareness. Nevertheless, it is the foundation of normal existence in man and the higher animals because it regulates and activates all instinctive processes and when trained (conditioned by reiterated stimulus and response) it is capable of producing intricate and exact operations: of which human speech is perhaps the outstanding exemplification. We are not mentally aware of the immensely complex processes involved in speech and other acquired functional powers. The automatic region is the "sub-conscious mind" of analytical psychology.

E7 Vegetative Energy. According to Vernet¹³ this energy is mainly organized through the sympathetic and vagus nerves in man. It is probably associated with the blood chemistry. Though it lies below the threshold of subjective experience it plays a decisive part in maintaining health and vigour. It is capable of concentration and transference by special techniques. It is the seat of the "unconscious mind" of analytical psychology.

E8 Constructive Energy. All life has the powers of nutrition, reproduction and self-renewal. These depend upon a complex organization that is absent in non-living matter. The constructive energy occupies the interface between living and non-living matter. It is capable of entering into exceedingly complex structures as can be seen from the code-bearing genetic and memory elements of DNA and RNA molecules.

Material Energies

E9 Plastic Energy. Material objects have the remarkable property of being able to change shape without change of identity. This property - plastic deformation - is most markedly present in living organisms but is not in itself a mark of life. It is possessed by colloidal substances which are usually but by no means always of organic origin: the typical example being a ball of wet clay. Since, even the most rigid of objects is capable of plastic flow, we conclude that a special kind of energy makes this possible. It seems that this

energy is associated with the power to produce order in material systems. The plastic energy is significant for education as it influences muscle - and nerve-tone and the phenomenon of fatigue.

E10 Cohesive energy. All aggregations of matter are held together by forces that develop from electro-magnetic fields and yet have properties that cannot be expressed solely in terms of field properties. Neither solids nor liquids behave as would be expected from the physico-chemical properties of the substances of which they are made. We ascribe this special behaviour to the presence of a characteristic energy, called cohesive because it is not so much a bonding energy as a structuring influence. It can be regarded as the skeletal energy of every kind of body whereby it is form the base of the structure of energies, just as organization dominates able to sustain and transmit stresses.

E11 Directed energy. This includes gravitation, kinetic, potential, and electro-magnetic field energy. It is characterized always by direction and magnitude without organized structure. Direction can be regarded as a pre-structural property. It must, moreover, be remembered that neither motions nor forces can be observed in the absence of rigid bodies, nor can measurements be taken without deformable bodies. It follows that the directed energies influence human experience solely because we are embodied in bodies organized with constructive and plastic energies. The ability of man to act upon his environment depends upon the fact that he is able to produce and control directed energies of various kinds. These energies cannot, therefore, be ignored in any integral view of the educational process.

E12 Dispersed Energy. Heat energy is associated with all kinds of random motion. Heat is the basic state of existence¹⁴. Order and disorder hygiene and care of the body are the main factors in the upbringing of in the middle storey and unity the highest levels. In the limit, organization and order both dissolve into heat energy; but this same energy is the condition for reintegration. Without heat, energy acquires perfect order but has no organizing principle. Heat makes organization possible, but does not produce it.

Each of the twelve kinds of energy determines a level of being. Within these twelve levels, five are directly relevant to the educational process: these are the vegetative, automatic, sensitive, conscious and creative modes of being. We shall briefly consider how each of these enter into human experience.

(1) Unconscious or VEGETATIVE Being

This is common to all living organisms. An extreme form is the tropism or unvarying response to generalized external stimulation (c.f. geotropism in plants, phototropism in the lower animals). In man it includes all conscious reflex mechanisms.

The vegetative energy normally works in the instinctive mechanisms that maintain bodily help, transform food and air and provide the highly specialized substances that serve the higher functions. Right exercise, is able to influence the right working of the vegetative level. Man can function on the vegetative level not only in coma or natural sleep, but also in apparent waking states when his attention is wholly distracted from his bodily or mental activity and he is in the condition called mindwandering or day-dreaming. If he is engaged in a learning activity he does not recall what he has been doing except in disconnected phrases or images. Nevertheless, a conditioning process is possible on this level as is apparent from "sub-liminal" stimulus experiments.

(2) Sub-Conscious or AUTOMATIC Being

This is common to most animals, especially vertebrates, arthropods and possibly other phyla. It permits well-defined but non-adaptive behaviour-patterns (instincts and conditioned reflexes). These can be originated, modified and developed by repeated and reinforced stimulation. In man, function on the automatic level includes speech, locomotion and the majority of habitual behaviour complexes. Functions on this level play a large part in human life and they can be reliable and effective, but are defective both in percipience (noticing the unexpected) and in adaptation and transfer.

Learning on the automatic level is largely a matter of stimulus and reinforcement. Voluntary attention is not present with the automatic energy. The entire region is below the threshold of mental awareness and comprises

much of what is commonly called the "subconscious" or "unconscious" mind. Because behaviour patterns can be formed and fixed by automatic energy, this level does influence the "conscious" levels of the mind. The "psychology of the unconscious" falls into this scheme, but it must be recognized that some activities that are really supraconscious have wrongly been assigned to the "unconscious".

(2) Semi-Conscious or SENSITIVE Being

This level is present in man and the higher vertebrate animals. In man, it is capable of a high degree of organization and is the threshold of mind. Mind is not a single-level phenomenon but comprises all functional activity from sensitivity to consciousness. Being on the sensitive level is recognized by "attention". We notice what we are looking for. We notice the trend of our thoughts. We are interested and concerned. On this level, the human functions operate with a degree of purposive adaptation, which is lacking in the automatic level.

Learning on the sensitive level is voluntary and intentional. Sustained effort not requiring external stimulation is now possible. Memory operates differently when the activity passes to the sensitive level. We remember what is impressed upon our sensitive energy although the actual trace is on the automatic level (*vide supra*). When reading or writing, for example, the sensitive level permits attention to meanings so that connections are made which would not be noticed on the automatic level. Thought activated by sensitive energy can be pursued along an intended line of enquiry. The emotional function becomes active and strong. Sensory-motor activity on the sensitive level is not only skilful, but specifically adaptive. Skills acquired on this level can be transferred from one field to another.

The chief limitation of the sensitive level is that it does not enable the subject to "stand back" from what he is doing. He tends in consequence to be partial and subjective in his judgments. He can make use of what he already knows and what he learns from outside; but authentic originality is lacking. Self-criticism is possible only in retrospect. The subject cannot watch himself and correct his actions while they are in progress.

(4) Full awareness or CONSCIOUS Being

So far as we can tell, the conscious level of function is organized in man alone and distinguishes him from all other animals. It can be called the level upon which man is aware of himself as man. For reasons, mainly historical, this level is overlooked in most psychological theory which confuses it with the sensitive state. Consciousness can be described as "attention in depth". The subject is not only aware of what he is seeing, thinking or doing, but is also aware of himself seeing, thinking or doing. Because of the depth of awareness present, an inner action of self-observation and self-correction is possible.

Although we have said that the conscious level is organized in man, this is true only relative to the condition of other mammals in whom the organization is at best, rudimentary. The organization of conscious energy cannot be produced by an unconscious process. It comes about by the experience of life and by positive and active response to that experience.¹⁵ Without this, human functioning remains upon the sensitive level with occasional flashes of consciousness but no stable awareness of self. A person may be capable of conscious activity in the various functions; but not of sustained self-consciousness with the accompanying powers of self-direction and self-perfecting.

Conscious mental activity can see associative paths before they arise and so choose between them. Thus conscious thought is self-directed thought. It permits the subject to study problems in depth, looking at various meanings or interpretations of what is presented. Conscious feeling gives the power of impartial judgment and direct insight into the feelings of others. In the sensory motor-field, conscious activity is innovative, ingenious and able to solve complex practical problems. When present, it gives a direct insight into the processes of nature. All good artists and experimental scientists must operate-at least sometimes-on the conscious level of their sensory-motor function. All this is, unfortunately, rare under present conditions.

In the learning process, the conscious level of being is of special importance. It is awakened by the right kind of challenge. In wellconducted tutorial groups the discussion can be raised for at least short periods of time to the conscious level on which people understand one another: "see into one another's minds". True education, as distinct from task-training, must aim at developing the functions up to and including the conscious level.

The social importance of the conscious level lies in the ability to communicate with far less risk of misunderstanding than is inevitable on the sensitive and automatic levels. It allows suspense of judgment and hence is the seat of impartial, objective decisions. It is the condition of "clear thinking".

Once again, it is necessary to emphasize that conscious activity must be organized: it is not innate in man nor does it develop by sensitive experience alone. One of the most serious defects of present-day education is the failure to provide conditions for the organization of conscious energy. Teaching is mainly directed to the acquisition of knowledge on the sensitive levels and skills which are often automatic and therefore nonadaptive. The effectiveness of education would be immeasurably enhanced if more attention were paid to the organization of consciousness and less to the conditioning of sensitivity.

(5) Supra-conscious or CREATIVE Being

This level cannot be verified by direct observation, since by definition it is supraconscious, that is, beyond the mind. Nevertheless, human experience would be inexplicable if we did not postulate a "purposive spontaneity" in which true creative acts are initiated. In all fields of human activity, men of genius break through the limitations of the mind and discover new and unpredictable forms of thought and action. There is such a degree of agreement in the reports made by creative men, of the way in which creative steps are made spontaneously always involving some non-causal element, that the creative level of being must be included in any complex scheme.

This level would not have to be taken into account in the education of ordinary people, if it were the exceedingly rare privilege of a few men of genius, and if, moreover, its spontaneous character placed it outside the scope of any kind of "teaching". There is, fortunately, plenty of evidence that creative activity is commoner than is ordinarily supposed. It is seen in children's "play", when the stereotyped behaviour patterns customary among children are suddenly broken by a spontaneous, apparently uncaused, change of activity in a quite new direction. It is recognizable in the insight of intellectual people who have creative experiences that they cannot transfer to the level of sensitive operation and that in consequence produce results only on the automatic level of "daydreaming" or fantasy.

The importance of creativity in the modern world is widely emphasized; but great confusion prevails in the definition of what creativity really is. We believe that it can be fostered and that the gap between creative insight and its communication and translation into effective action can be bridged. This does not mean that man can organize creative energy. So far as we can tell, no one has power to direct or to concentrate creative energy. Those most richly endowed with creativity are most clearly aware that it is not theirs to control. It may be that at some later stage in the evolution of man, creativity will be organized as sensitivity is today. The history of life on the earth shows that each major step forward has been marked by organization of energy at a higher level. It is by no means improbable that mankind is now on the threshold of another such step, in which case creativity in the future may become far more general than it has been in the past. Meanwhile, all agree that education that does not foster creativity is lacking in an essential element.

The study of creativity has been confused by the wide range of meanings that have been given to the word. It is by no means obvious that children's play, sexual union, the discovery of new scientific hypotheses and religious ecstasy may all be activated by the same energy. On the other hand, it is often stated that creativity is no more than an unconscious scanning operation in the brain that accidentally lights upon a new combination of old ideas or an unexpected solution of an intractable problem. The hypothesis that there is a supra-conscious creative energy allows us to draw certain conclusions for planning educational curricula. At each major stage of child development, the creative energy begins to flow into new channels. Unless this is understood the flow itself may be diverted into unwanted and even destructive activities.

4 THE ELEMENT OF WILL

Will cannot be measured nor can it be described in qualitative terms. It does not have the distinctions of "more and less" that apply to Being, nor is it recognizable in its operations as in the case with the element of

Function. Will is a pattern of relatedness combined with a pattern of powers. The will-pattern usually goes unrecognized, because we tend to ascribe to functional characteristics the pattern of decision and action that comes from the Will.

Will in man is complex and yet unique. It seems very probable that the will-pattern of every human individual is as unique as his finger-print. This would mean that every human being has his or her own individual mode of being related to others and we might expect this to present an almost insuperable problem of mutual understanding and communication. It is true-and indeed obvious-that mutual understanding is a rare and difficult thing to achieve; but it is not so rare or so difficult as it would be if there were not broad similarities of will-pattern. It is found that most people can enter easily into a comparatively small range of relationships and that these can be grouped into characteristic "types". These will-types can be grasped intuitively, but they are very hard to describe.

We are, however, helped by the observation that relationship is triadic in character: exemplified in the father-mother-child complex or in the three-fold character already cited of function-being-will. The trim can take six forms according to the order of the terms and so far as human relationships are concerned we must further distinguish those that are inherent and those that are adventitious. This enables us to set up a scheme of twelve basic characters.

We give the scheme below; the adventitious groups being designated as operational to indicate that they are dependent upon an operation external to the related parties.

TWELVE WILL CHARACTERS

EXPANSIVE INHERENT G

Generous. Urge to transmit.

EXPANSIVE OPERATIONAL

Dominant. Urge to power.

CONCENTRATIVE INHERENT

Integrative. Urge for self-perfection.

CONCENTRATIVE OPERATIONAL

Acquisitive. Hard worker. Urge for betterment.

INTERACTIVE INHERENT

Open-minded. Urge to participate.

INTERACTIVE OPERATIONAL

Co-operative but restless. Urge to seek change.

CONSERVATIVE INHERENT

Stable. Traditionalist. Urge to consolidate.

CONSERVATIVE OPERATIONAL

Determined, with tendency to be obstinate. Urge to persist.

NORMATIVE INHERENT

Law-loving, ordinative. Urge to achieve ideal order.

NORMATIVE OPERATIVE

Organizer. Urge to legislate.

SPONTANEAL INHERENT

Detached. Free spirited. Urge to spontaneity.

SPONTANEAL OPERATIVE

Freedom-loving. Innovative. Urge to throw off restraint.

The names and descriptions are tentative and in some cases not at all satisfactory; but to avoid lengthy descriptions they can serve as suggestions to be made more specific by the intuitive insight of the reader who will recognize most of the types. We believe that the twelve characters are necessary and sufficient to describe all types of people. They are weakly or strongly present in different people and the combination of strength and weakness determines the will-type. We find that the scheme works well enough for purposes of grouping and comparative assessment.

The relational properties that can be described in terms of the twelve "will-types" are not primary characteristics of the will because they depend upon extraneous factors for their manifestation. There is, as we have already noted, an

unobservable element in the will that is inaccessible not only to behavioural assessment but also to introspection or self-assessment. This element is the Individuality as the determinant of the Present *Moment* of the person in question. The notion of the present moment is too complex for adequate discussion here since it requires an appreciation of the time-eternity-hyperaxis framework developed elsewhere." Every Individual Will, according to our view, determines a present moment. If two wills become fused, there is a fusing also of present moments. The partial fusion of wills that occurs in strongly integrated societies¹⁶ produces for such societies present moments proper to them and these may greatly exceed in extent and duration the present moment of any single member. When we speak of the "present moment" in the historical sense we refer to such social will-complexes. Conversely the will of a human individual can be dissolved into fragments, in which case the person has not one present moment but many. In schizophrenia and allied disorders of the will, the fragmentation may be so complete as to produce the equivalent of multiple personality.

Although the present moment *is determined by will*, its *extent* depends upon the level of being and its *content* upon the organization of function. We shall, therefore, consider these aspects when we come to examine the binary combinations of Will-being and Will-function. There is, however, an element that concerns will exclusively, and that is the power of *decision* or the exercise of freedom. There is in every man an element that he cannot understand in functional terms-it is the central mystery of human nature that the mind cannot comprehend. The point is that deciding is not a function like thinking or desiring. This has been recognised in the abandonment of the old faculty division of cognition, feeling and conation. ^{***note 19} We do not find in ourselves any process of deciding, but become aware that a decision has been made that commits inasmuch as we accept it as "our own". Decision is an act that may or may not be conscious or even creative and is, therefore, affected by our state of being. Nevertheless, being an act, decision cannot be a state. It is an act whereby a relationship is established and it is neither more nor less than this. We must, therefore, classify it as pure will. There are other acts that have the same character as decision such as acceptance and detachment, and also changes of state as when we find that our relationship to our environment has been transformed without change of functional activity.

Since the will depends upon the functional instruments for its operations: it can be rendered impotent by malfunction, or by functional conditioning. This conditioning may be useful for particular circumstances: but it inhibits the freedom of choice that resides in the will. Moreover, the fragmentation of will also masks the central authentic individuality to such a degree that most people appear to be incapable of total will-decisions. Yet even the most disintegrated personality is capable of unexpected, spontaneous and unpredictable behaviour that indicates that the possibility of free choice is still patent. The preservation of this potentiality under the inevitably conditioning influences of the educational process is one of the major problems of all "mass-education".

5 THE BEING-FUNCTION COMPLEX

Human behaviour should correspond to the will-type of the individual. Only then can spontaneity of function and creative being-states be uninhibited and productive. This "normal" situation rarely obtains for more than brief intervals. Usually, external pressures and previous conditioning result in states of tension and "unnatural" behaviour. We saw in the last section that the Individuality in most people is latent and does not contribute directly to behaviour. In any case the will-pattern is an invariant factor that accompanies a person unless and until he undergoes a psychokinetic transformation. This allows us to study the two remaining elements in combination without reference to the will. This applies particularly to performance in the face of every kind of external requirement. Unless an unnatural stress is set up by requirements incompatible with his own will-type, a person's performance will depend upon being-function factors that can be grouped under three heads: -

1. Power of Embrace, Integration of Personality.
2. Levels of function normally accessible.
3. Specialized knowledge and skills.

The second factor is directly related to being-function complex. It cannot be described in terms of either being or function separately. The first factor concerns being primarily and function secondarily, while the third factor is the reverse. We shall not here examine the complexity of the functional characteristics of man, as these are mostly accessible to observation and evaluation by known methods of testing.

The level of operation and the functional group together can be assigned to a two-dimensional "phase-space". For most purposes this can be represented by the five energy levels from vegetative to creative and the four functional elements: sensory-motor, affective, intellectual and inter-personal.

We can, in this way, set up a twenty-term matrix according to the following scheme.

	<i>Sensory-motor</i>	<i>Affective</i>	<i>Intellectual</i>	<i>Inter-personal</i>
<i>Creative</i>	Creativity expressed in material objects	Ecstasy Illumination	Transcendental Insights. Hypothesis creation	Inspired leadership Power to create situations
<i>Conscious</i>	Insight into workings of Nature	Impartial judgment. Power of decision	Originality in thought. Clarity	Understanding of people. Friendship
<i>Sensitive</i>	Adaptive skills Craftsmanship	Emotional stability	Logical reasoning. Consistency	Group sense co-operation
<i>Automatic</i>	Non-adaptive manual skills	Motivation without understanding	Memory and verbal association	Herd instinct Predictability
<i>Vegetative</i>	Health and physique	Instinctive reactions	Dream states	Physiology of sex and response

The entities in the twenty boxes are indicative only and they do not include behaviour due to mal-functioning on different levels. For many purposes, we find it useful to simplify the matrix to twelve terms by omitting the vegetative row and the inter-personal column.

Each of the levels determines a mode of operation that cannot be achieved upon any lower level. For example, intellectual activity on the sensitive level can recognize and understand problems, apply knowledge and techniques to their solution: but it cannot see beyond what is presented nor can it think with true originality. Where the problem is insoluble with known techniques, the mind on the sensitive level registers impossibility; whereas mind on the conscious level restates the problem, devises new techniques and discovers an order that the sensitive mind does not suspect. The conscious mind has its own limitations, for it cannot escape causality. It can find original solutions to problems that arise from known situations; but it cannot detect new problems that have no antecedent. Such problems may be thrown up by the failure of known theories, but their true character remains unsuspected unless a creative step is made beyond the conscious mind. This step suggests a new hypothesis rather than a new technique. These examples suggest that creative thinking is the exclusive property of rare men of genius; but we have seen that the creative energy is present in most people.

This raises the last point that must be made in conjunction with the function-being complex. It is not enough to function on a high level: it is necessary to integrate the high level operation into the structure of the lower levels in order to communicate and to perform the necessary practical operations. This is called "integration". It distinguishes, for example, the man who has creative insights and can translate them into effective actions from him whose visions dissolve in dreams. Integration is not only a measure of being-stability, but also of the right coordination of the functions. Without this co-ordination of function, integration would require a continuous conscious effort on the part of the person and this would only be maintained at the expense of other activities. This explains why integration must be referred to the complex of being and function and not to being alone.

6 THE WILL-FUNCTION COMPLEX

Character in man is the structure of the will-function complex. Jung¹⁷ calls it "the fixed individual form of a human being", but this is true only for the Will-pattern. Character is certainly more complex. Few aspects of human nature

are more important for the educational process and yet none is so hard to bring into systematic description. Jung distinguishes only two will-types: the introvert and the extrovert and four functions: sensation, feeling, thought and intuition. In combination these give eight basic characters. The scheme certainly works for many purposes, but it has been found inadequate and many extensions and modifications have been proposed.

In recognizing that character is not primarily a matter of being, but is a combination of will-type and functional balance, we can set up a consistent theory of character that is as different from those based on the observation of behaviour as from those of the psycho-analytical schools.

According to our view, character is the way in which the individual will operates through the functional mechanism with which it is associated. Character is thus a secondary property, being composed of one fixed element, the will pattern; and one variable element the state of functional balance. This explains the observation that much human behaviour is not "in character" and yet the presence of an underlying invariant pattern remains.

The three will-impulses operative in all situations - including human behaviour - are: positive or *affirmation*, negative or *receptivity* and intermediate or *reconciliation*. These form six combinations which define the primary will-types.¹⁸ We can treat the functions as a triad of sensory-motor, affective and intellectual as before.¹⁹ The six will-triads can operate through the functions in combination or through two or one. Only the three-fold combination can be ascribed to character, because if only one or two functions are involved in an action the remaining impulses of the triad must come from outside the person concerned and the result is not an indication of character.

The simple conjunction of three functions and six will-types would give thirty-six elements of character; but the situation is never as simple as this. Every human being is a combination of several elements in differing degrees of dominance or dependence. We must therefore distinguish between the *elements* of character and the *structure* of character. The former are relatively simple and easy to define, but they do not give us the information we need about a human being, which is the ability to predict his actual and potential behaviour in different circumstances. We can set down the thirty-six elements using this symbolism.

Sensory-motor function	S	Affirming impulse	1
Affective function	A	Receptive impulse	2
Thinking function	T	Reconciling impulse	3

We then have

S1 - A2 - T3	A1 - S2 - T3
S1 - A3 - T2	A1 - S3 - T2
S2 - A3 - T1	A2 - S3 - T1
S2 - A1 - T3	A2 - S1 - T3
S3 - A1 - T2	A3 - S1 - T2
S3 - A2 - T1	A3 - S2 - T1
S1 - T2 - A3	A1 - T2 - S3
S1 - T3 - A2	A1 - T3 - S2
S2 - T3 - A1	A2 - T3 - S1
S2 - T1 - A3	A2 - T1 - S3
S3 - T1 - A2	A3 - T1 - S2
S3 - T2 - A1	A3 - T2 - S1

TI -S2 -A 3
T1 -S3 -A 2
T2 -S3 -A1
T2 -S1 -A 3
T3 -S1 - A 2
T3 -S2 -A1

T1 - A 2 - S 3
TI - A 3 - S 2
T2 - A 3 - S 1
T2 -A1 - S 3
T3 -A1 - S 2
T3 -A 2 - S 1

To illustrate the interpretation of the scheme we can take any triad at random, thus:

TI S3 A2 means a character in whom thought is the initiating impulse but whose intrinsic nature is centred upon bodily impulses and therefore tends to appear externally to have strong affections. A person in whom this element is dominant will interact easily with others, but will not understand them by any deep or intimate contact.

For reasons of space, we cannot discuss detailed interpretation of the thirty-six elements, not more than half of which have any great practical significance. It must be emphasized that the influence of character on behaviour varies according to the state or level of being. It can be almost entirely masked by conditioning and by habits formed on the sensitive level. It can also be set aside by free and voluntary self-direction with the help of the creative energy. In either case, however, the character remains.

As already stated, character is not a rigid structure. It can be modified by training - particularly by self-discipline. The balance between activity and dominance of the functions can be changed. By attaining a relatively stable hold on the conscious level, a man can compensate even for deficiencies in the will-pattern.

The conclusion for education to be drawn from this study is that the effectiveness of the process could be greatly enhanced by ascertaining certain elements of character and using them to group students in favourable combinations for mutual stimulation and adjustment. We foresee the need for psychological laboratories in large schools or accessible to groups of smaller schools. We believe that tests and observations can be devised that would form part of the normal school curriculum and lead to greater self-acceptance and hence improved self-confidence on the part of the pupils. The field of will-function character research is wide open. It is no less important for education than for the fullest enjoyment of adult life.

7 THE BEING-WILL COMPLEX

People differ greatly in their breadth of vision and in their capacity for taking decisions. The combination constitutes the responsibility-range of a person. It can also be called the *Present Moment Capacity* and depends upon the will pattern in conjunction with the strength and flexibility of being. The notion has come to occupy an important place in management theory,^{20, 21} but it is relevant to education, since it should be the criterion for determining the kind of challenge to which a pupil should be exposed.

The uniqueness of the human individuality does not imply that the will pattern operates always as a monolithic and invariable determinant of behaviour. On the contrary, in all people there is a fragmentation of the pattern into sub-individualities or selves that are located in different regions of the personality and come into operation singly or sometimes in opposing pairs. This latter effect accounts for the prevalence of inner conflicts even in most normal people. The fragmentation of the will is one of the principal causes of the self-contradictory behaviour that makes human relationships so difficult and it also explains why people do not and cannot know themselves.

The fragmentation of will is not properly speaking a disruption of the individuality, but rather of its operation in action. Will requires an instrument and the being of the ordinary man cannot provide an integrated and stable instrument. He is not organized as a structure-and this is especially true of the mind which is in a perpetual state of flux. Lacking a single, stable support, the will attaches itself to whatever it may encounter. Thus man appears to have no permanent individuality but a succession of transient "I's" and even different "I's" at one and the same time.

It is, consequently, necessary to determine the degree of integration of the will-being complex in order to assess a man's ability to realize the potentiality latent in his will-pattern. Two men may belong to the same will-group and so be capable of entering without strain into similar relationships: but one will do so only in relatively trivial situations,

whereas the other will operate on a grand scale and over a long span of time. We have here something more than the present moment capacity that depends upon being alone: for we should probably agree that the second man can operating in a succession of unconnected present moments, is likely to be unadaptive and self-contradictory. The "great" man, though held within the pattern of his will, shows both greater consistency in his main activity and greater freedom in directing it. We can account for this in terms of energy levels. A given will pattern associated with automatic energy will give one result and the very same pattern associated with conscious energy will give a totally different result.

These considerations are basic for understanding man as a psychokinetic being, i.e. one who is capable of mental development and will-transformation. The untransformed man may have functional abilities and skills and he may have acquired varied useful knowledge. He will remain ineffectual because he is weak in being and divided in will. In the course of transformation, man approaches the pattern of his own individuality. The needs of transformation are sown in the formative years. They may be inhibited from germinating by conditioning processes and they can be nurtured by the challenge of freedom and responsibility.

It has been found possible and useful to set up a *scale of integration* in seven stages starting from the condition in which a man is almost wholly dependent upon external supports and rising to the state of the man who is a fully integrated individual capable of creative initiative.

Stage 1. Inconstant Man. Many disconnected "wills". Aims dominated by short-term impulses. No capacity for reflection or self-criticism. His thinking and feeling are one-dimensional, without depth or contrast. He is usually capable of working only within a supporting environment. He tends to be dependent upon others.

Stage 2. Reactional Man. There is some depth of experience, but invariably polarized by like and dislike, "yes and no". His aims are based on desires rather than acts of will. He is more sensitive than at the first stage. He is dependent and tends to acquire behaviour patterns that mask his own individuality. He cannot criticize himself.

Stage 3. Purposive Man. The mind is well organized. There is a capacity for reflection and self-criticism, but usually little stress-resistance. There are strong but conflicting personalities within the self. Able to follow course of action by theoretical decision even against desires; but not stable in action.

Stage 4. Stable Man. There is a transformation between the third and fourth stages, brought about by the "consistent" pursuit of an aim. Man who can make and abide by his decisions. Self-critical and yet selfconfident. His inherent will-pattern influences his actions on the conscious level.

Stage 5. Integrated Man. Being is organized on mental levels of sensitivity and consciousness. Inner freedom is now possible. He can recognize structures beyond the mind. His individuality influences his actions, but is not wholly integrated with his being.

Stage 6. Complete Man. Here Individuality and Being are integrated so that the complete man is *his own will and his will is his own*. He is free from all inner contradictions, and his mind is wholly conscious. His present moment differs radically from those of ordinary people. He can communicate with many without losing his own identity. He is not subject to Leibniz' law of identity. He can initiate causes.

Stage 7. Perfected Man. Integrated to level of Creative Energy. This is a condition that, though theoretically possible, cannot be grasped by the human mind of which conscious energy is the upper limit. The Present Moment capacity at this stage transcends personal limits. He is not limited by space and time except in his functional instruments. He is Universal Man.

The later stages of transformation have been included for the sake of completeness. They are reached only by very rare people at the present stage of human evolution; but they may indicate stages that will be reached by humanity in the distant future. We shall refer to them again in the last section.

8. THE THREEFOLD HARMONY

Although man is commonly referred to in religious contexts as a ternary being composed of body, soul and spirit, we find little precision in theological literature regarding the meaning of these terms. The verbal distinction of *ruah* and *nephesh* in Hebrew, *psyche* and *pneuma* in Greek and our soul and spirit has been preserved, but the words have been so variously interpreted as to leave an impression of complete confusion. Aquinas in common with other scholastic philosophers seems to have identified spirit with the intellectual function as the French language does today. The Cambridge Platonists regarded spirit (*anima*) as a plastic

principle-itself possessing extension-that fashions a body for the material and unextended soul. Modern theology has reverted largely to the dualism of soul and body, the word spirit being either a synonym for soul or the soul separated from the body.

Modern psychology is either monophysite denying to man any but a bodily nature or tentatively dualistic. Jung²² says that "we shall do well to admit that there is justification for the old view of the soul as an objective reality". He makes (ibid) a new distinction between soul, *seele or sila*, as the moving life-force and *animus, pneuma, ruah*, etc., as breath. But he tends to speak freely of "a world of the spirit" rather than of the spirit as an element of man's nature.

The distinction made at the beginning of this paper of the elements of function, being and will, can be compared to the triad of body, soul and spirit: especially if we follow Jung's distinction of life-force and life-vehicle. It seems a reasonable interpretation to regard function as the operative aspect of body, will as the personal aspect of the life-force and being as the reality of soul. When the endless variations on the theme of man's visible and invisible natures are examined in the light of the triad function-being-will, we can discover a common pattern.

For the purpose of an educational psychology, we should say that an equal and balanced emphasis should be placed upon the three elements. Function is to be trained, taught and harmonized. Being is to be strengthened and at the same time made flexible and yet integrative so that the functions can operate on any required level. Finally, self-knowledge must, at its deepest and most significant, be knowledge of one's own will pattern and ultimately awareness of one's own individuality. Each of the three elements in man's nature is involved in his maturation and in his transformation. The gifted and unfortunately all-too-rare teacher who can recognize the needs of all parts of his pupils' natures can educate in the fullest sense. For the generality of mankind, it is necessary to compensate by scientific study and structural organization for the inevitable inadequacy of their own insights and understanding. That is why educational research must be deeply concerned with psychology and with the theory of structures. What and how to teach are easier questions to answer, but even if answered they will not suffice to produce the educational systems that humanity demands.

We can assemble all these notions in terms of man as a *SELF*: the term introduced at the beginning of this paper in *Fig. (1)*. The self is a composite, but evolving entity, which is the man himself. It is not preformed but its development continues throughout life unless prematurely arrested.

The self of man, on the view here developed, is produced by interaction between the functional mechanisms, the will-pattern and the environmental influences that begin to act from the moment of conception. The formation of the self is a process of maturation and is most powerfully influenced by the educational environment. In a sense, therefore, it is possible to define the school as a Vale of Self-Making and to plagiarize Keats-it should certainly not be a Vale of Tears. It is certain that the self undergoes profound changes during early life. At first the growing child is almost wholly engaged in adapting itself to existence in a material body among other material objects. Its psychic development takes place almost exclusively in the sensory-motor system. By this it acquires the ability to deal with the material world and its self-hood has a corresponding nature. We have, therefore, termed it the *material self*. The material self remains active throughout life, but with normal development it becomes a passive instrument of the higher parts of the self and cease to dominate.

The material self is mainly associated with the automatic energy.

Between 4 and 7 years, the development of the functions introduces polarities of pleasure-pain, like-dislike, yes-no that become associated with the will-pattern. This develops into the *reactional self* that remains dominant in most children during the formative years and in a large number of cases it continues to dominate throughout life. Such people are easily recognized by identification with likes and dislikes and their "moodiness" and tendency to see everything either black or white. The reactional self oscillates between automatism and sensitivity. The formation and growth of the reactional self is a necessary part of the maturation process in men and women. When it is rightly developed it is the point of sensitive contact between the inner and outer world. It should not dominate in a mature adult and indeed should begin to occupy a passive status from 8-10 years of age.

Under favourable conditions of home life and educational procedures, the boy or girl develops value-discrimination from about 7 years of age. This is the mark of the formation of the third stage of the self-hood. Discrimination is primarily the ability to distinguish levels of being. The human mind is capable of discrimination because it ranges from sensitive to conscious energy, thereby linking together two of the three major modes of existence: the vital and the cosmic. This twofold affiliation is inherent in human nature and there is no escape from its implications. Man is and always will be "half heart and half god". This is expressed, in the terminology we have adopted, as the *divided self*. This differs from the two prior selves by having an "upper" or conscious and a "lower" or sensitive part. The Will associated with this structure can retain its own pattern-whereas in the prior selves it is obscured by the adventitious effect of the conditioning influences. We, therefore, regard the Divided Self as the seat of the character (v.s.).

The Divided Self begins to form as soon as there is an awareness of objective values-as distinct from the subjective values of the Reactional Self. It grows from about the eighth year and should be fully formed and become dominant after puberty. This is observable in young people in the form of an intense preoccupation with the objectivity of value and the need for security. If the necessary educational influences are lacking or distorted the Divided Self does not develop an independent existence and the boy or girl remains tainted with "infantilism". This is, unfortunately, a very common occurrence.

Beyond the Divided Self there is a further stage of development that should begin at puberty and be well-established by 18 years in women and 21 years men. This is the formation of the *true self*. This has a tripartite nature, at the centre of which is the "natural will" or "I". This is one reason for the descriptive term "true self". There is another, even more significant reason, namely, this fourth mode of self-hood is the seat of the psychokinetic transformation by which the self-hood is transformed into Individuality. The True Self differs from the first three by the fact that it can develop only by *conscious intentional action*, which requires the *exercise* of the discrimination present in the Divided Self. At this stage, the educational process must acquire the quality of a synergic co-operation between pupil and teacher. The True Self must by its very nature be active and take the lead over the other selves. It can acquire this dominance only by acquiring the strength that comes from acts of decision (v.s.).

It must not be supposed that the True Self is the "good" part of man and the Material Self the "bad" part. All four parts of the self are necessary for the complete human being. All of them can be rightly and all of them can be wrongly developed. Wrong development of the True Self leads to the establishment of egoism at the centre. This may be regarded as the chief enemy of man's evolution as an individual and the main source of disruption in human societies. So long as egoism occupies the mid-point of the self-hood the Individuality is excluded and remains without an instrument and therefore impotent. Only the most extraordinarily favourable combination of inherent qualities and educational procedures will enable a human self to develop without egoism. It is, however, certainly possible to prevent egoism from establishing itself so securely in the self-hood that it will continue to dominate in spite of all efforts to be free.

This brief sketch of the self-hood and its stages of development is not intended to demonstrate the soundness of the hypothesis, but to indicate one way in which the total assessment of a human being can be approached.

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