PSYCHOLOGY AND PRINCIPLES OF EDUCATION

BY THE SAME AUTHOR

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PSYCHOLOGY AND PRINCIPLES OF EDUCATION

BY

Prof. ANJILVEL V. MATTHEW

S. M. T. TEACHERS COLLEGE, KOLHAPUR,

[*University of Bombay*]

WITH A FOREWORD

BY

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[*London University Institute of Education, London*]

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FOREWORD

By

PROF. H. R. HAMLEY, M.A., M.Sc., Ph.D.,

The request of the author that I should write a Foreword to this book comes as an honour which I appreciate the more as it enables me, in imagination at least, to address the students I was privileged to meet in the College lecture-room some fifteen years ago. One of my auditors about that time was a keen-minded enquirer, who now presents the results of fifteen years of reading and thinking on *Psychology and Principles of Education.* I should be proud to think that anything I taught in those happy days finds reflection in these pages but I am even prouder to find that one of my students has so far advanced his knowledge of psychology and of education that comparatively little of the old teaching remains. This is as it should be. The years that have intervened have brought changes, not so much of ideas as of emphasis. We are far less interested than we used to be in the child's intellectual and far more in his emotional development ; far less concerned with his mental achievement or mental prowess than with his mental health. The truth is that we are now beginning to realise that the child—every child—is a personality, a complex of intelligence, impulsiveness and feeling, and that he is as unpredictable as this combination of qualities can make him. The reader of this book will find that the intellectual side of the child's personality has been thoroughly treated but he will also find a full discussion of feelings, emotions and sentiments. He will find many references to the child's covert or unconscious, as well as to his overt or observable behaviour, which should make it clear to his mind that the motives of children are not to be understood by the superficial observer. Children differ enormously in their attitude to life, partly because they have had widely different emotional experiences.

While this is true, it is also true that children have the same basic needs. Different, though they be, they are alike in their need of affection, of security, of freedom, and of adventure. Deny the child affection and he becomes anxious or perhaps unduly aggressive ; remove from his life a sense of security and he becomes timid and nervous ; refuse to recognise him as a personality and he becomes either apologetic or blatantly self-assertive. The needs of children are many but they can all be subsumed under two headings security and adventure. Security may take many forms ; among these are personal security, security in the affections of parents and teachers, security in home and school society, security in a grasp of the fundamentals of knowledge. The most important of these is undoubtedly security of affection. The child does not ask for lavish affection from parents or teachers ; all that he demands, and he demands it as a right, is ordinary human kindness and sympathetic understanding. He demands, too, kindly control, so that he may not give way to aggressive and tempestuous impulses. Next in importance I would place a firm grasp of the fundamentals of knowledge. Dr. William Moodie of the London Child Guidance Clinic, once wrote 'Early and efficient teaching in the fundamentals of reading, writing and arithmetic is the corner-stone of mental health in school children.' What a challenge to teachers not only to improve their methods of instruction but also to exercise patience with the slower witted of their pupils !

As I read this book I began to think how true it is that education is not only a science but also an art. The Science of Education the teacher may learn from this book ; the Art of Education he must learn from life, with the occasional help that wise teachers and children of goodwill can give him. I commend this book as a safe guide to all who wish to learn the science and the art of their profession.

H. R. HAMLEY

Institute of Education,
University of London
July, 1939.

PREFACE TO THE SECOND EDITION

The first edition of this book was published in two parts : Part I in March 1936, and Part II in March 1937. It is a matter of great joy to the author that all the available copies of the first edition have been sold out in the course of about two years ; and last year many orders were received which could not be executed for lack of copies. One feels confident from the demand that the book satisfies a real need, especially when it is noticed that it was not given any formal advertisement worth the name.

Though it was not formally advertised, the book was sent to a few distinguished educationists for their suggestions and criticism, and to a number of educational magazines for review. Many of those who have given the author the benefit of their opinions have welcomed the book for its lucidity of presentation, its simplicity of language, and for the numerous homely and concrete illustrative instances cited in the text. Some, however, thought that the treatment in certain chapters could have been simpler. I am inclined to think that the want of simplicity they saw in some places was due not so much to the obscurity of the language used as to the brevity with which certain important facts have been dealt with. To have elaborated the points still further would have meant better elucidation, no doubt ; but it would also have meant longer chapters which the author tried to avoid. This defect has now been rectified and topics dealt with in Chs. I, III, IV, V, and VIII have been treated more fully. Similarly, but with a different purpose, Chs. XV, XVI, XVIII, XIX, and XX have been enlarged ; and as a result more detailed attention has

been given in these latter chapters to such topics as Indian attempts at measurement of intelligence, transfer of training, fatigue, conditioning and habit-formation, and growth of sentiments.

Chs. XXII, XXIII and XXIV were formerly entitled respectively :—Ch. XXII *Moral Conduct Character*, Ch. XXIII *Personality and Mental Hygiene*, and Ch. XXIV *Mental Hygiene and Life Attitudes*. Ch. XXII is now called *Moral Conduct Character and Personality*, and comprises some of the things put in the former Ch. XXIII and a few new paragraphs on the measurement of personality. The discussion of mental hygiene has been brought together in one chapter, Ch. XXIII. Chapter XXIV is now called *Freedom, Discipline and Life Attitudes*, most of which consists of new matter, though the last few paragraphs on life attitudes are those retained from the former Ch. XXIV.

To make the book more useful, a few illustrations have been put in ; and we hope that these, namely, two blocks in Ch. IV and four blocks in Ch. XV, appreciably enhance the usefulness of the discussion which otherwise would have been too vague or abstract for a number of readers.

Another addition which has been made particularly to benefit student-readers has been an appendix, made up of select questions drawn mostly from papers set at most of the Indian Universities and two British Universities for their B.T. or T.D. or other corresponding degree or diploma examinations. Thanks are due to the University authorities of London, Manchester, Bombay, Calcutta, Madras, Mysore, Nagpur, Andhra, Aligarh, Benares and Lahore for their generous permission to reproduce their questions. Two of them (London and Bombay) have explicitly protected their question-papers under copy-right regulations. These as well as the rest gave most willing permission to reproduce their questions as topics for individual study and group discussions.

The author gladly repeats here what he wrote in the preface of the first edition acknowledging his obligation to those authors whose works are mentioned in the bibliographies given at the end of each chapter or in footnotes, and several others whom he has not been able to

mention by name. His own position is based on the findings of such distinguished authorities as McDougall, Adams, Dewey, Spearman, Thorndike, Freud, Montessori, Susan Isaacs, Burt, Nunn, Köhler, and Woodworth—to mention a few. He has not, however, followed *in toto* the lead of anyone of these writers in his presentation of materials. As a matter of fact, he believes that many things can be taken from the exponents of conflicting schools of psychology by an author of an introductory book on educational psychology, without his identifying himself with all the views put forth by strict followers of either the one or the other school. For instance it is harder to find two psychologists whose points of view are more opposed to each other than William McDougall and John Watson ; but it is possible to accept many things that McDougall puts forth and a number of things stressed by Watson—or by even such a greater Behaviourist than Watson as Pavlov. To accept certain standpoints or conclusions of one of them does not mean the total rejection of everything advocated by the other. If that were so, there would have been no psychology at all which anyone but a specialist could pursue with any profit. Similarly there are the followers of Freud and of Adler, both exhorting us to recognize the existence of unconscious factors. The fact that one of these schools would have destroyed the other if it possibly could do so, does not mean that wisdom in this field is exclusively of one of these schools. The contention here is not that each of these schools is as rich in its contribution to the understanding of human nature as the other ; on the other hand it does not mean that an admirer of the originality and insight of Freud should say that Adler does not say anything worth listening to by a student of the unconscious. This is the attitude taken up in the discussion of educational problems presented in this volume.

Though Sir Percy Nunn is not generally known as an original psychologist, his *Education Its Data and First Principles* is in the opinion of the present author more a book on educational psychology than on the philosophy of education. He has been much profited by the study of this great little book which has profoundly impressed teachers of education in Indian Universities, as can be gathered from

the question papers set at the B.T. (or corresponding) examinations of Indian universities. Indian teachers of education have almost unquestionably accepted his lead in calling the development of individuality as the highest aim of education. The worth of the individual person is certainly to be stressed, especially in these days when in some of the most powerful countries of the world the rights of the individual as such are not considered worth any special regard while compared with the rights of the State. But the English language contains a word which stresses the importance of the individual person without by implication reducing his importance or value as an individual human being to the individuality of a member of the animal or vegetable kingdom. This word is personality, and it is *the enrichment of personality* that is put forth as the highest aim of education in this book, in preference to what has been described as *the development of individuality*, though the latter expression has been made popular by no less a person than Sir Percy Nunn. The criticism of Sir Percy Nunn's term by R. R. Rusk in his *Philosophical Bases of Education* is worth closer attention by Indian educationists. Readers of *Psychology and Principles of Education* are requested to read what is said in this respect in Ch. I and Ch. XXII before they finally conclude whether the preference here indicated is well-based or not.

The author has consulted the works of smaller writers also—writers who have written text-books based on the works of acknowledged authorities and who at times make certain points clearer to laymen than the authorities themselves—and is indebted to them too for much inspiration and instruction. The chapters mentioned from such smaller works provide useful parallel readings.

Reference has been already made to the notice taken of this book by a few distinguished educationists and to the encouraging remarks they have made thereon. Prominent among these are Principal Mckenzie of the Wilson College—Ex Vice-Chancellor of the Bombay University ; Principal Saiyidain of the Aligarh Training College—now Director of Public Instruction, Kashmir ; Principal Seshadri of Ajmere—President of the All-India Federation of the Educational Association ; Dr. Siddalingayya, Professor of Education

of the University of Mysore ; Prof. Yajnanarayan Iyer of Madras—President of the South India Teachers' Union ; and Prof. A. N. Basu of Calcutta—Head of the Teacher Training Department of the Calcutta University. A great debt of gratitude is due to these, and to a number of other educationists in all parts of India, for their kind and painstaking co-operation. Two friends went over the whole book with great care and made valuable suggestions in detail Prof. E. W. Franklin of the Spence Training College, Jubbulpore (Nagpur University), and Rev. J. R. Andress, Secretary of the S. P. G. Mission in Western India, Kolhapur. The former went through the first edition and drew the author's attention to a number of points regarding which there could be differences of opinion among specialists ; and the latter read through practically every page of the proof of the second edition and made valuable suggestions to make the language of the book more pointed and expressive.

Principal Vakil's support and co-operation given so unstintingly when the book was first published has been already acknowledged. But for his whole-hearted sympathy and the enthusiastic appreciation of the students for whom it was primarily written—most of them high school teachers of many years experience before they entered the Teachers College—this book would not have been produced. In the first edition they managed the business side of the publication ; in both editions they rendered great help, going through the proof and preparing indexes ; and in the second edition they co-operated in selecting and classifyng questions set at various universities. Foremost among the students who thus co-operated in the publication of the second edition were Mr. P. N. Raina and Mr. B. L. Munshi.

It is a matter of great joy that Rao Bahadur D. A. Surve, as Prime Minister of the Kolhapur State and Director of its Department of Public Instruction, expressed his appreciation of this work by a financial donation when the two parts of the first edition were issued together as a single volume. It is inspiring to understand that one's work is appreciated by those placed in authority.

The author's pleasantest obligation remains yet to be mentioned.

His enthusiasm for psychology he owes more to one individual than to any other single person. It was Prof. Hamley of the University Institute of Education, London, who, as Principal of the Secondary Training College, Bombay, initiated him into the systematic study of education and psychology. His enthusiasm for work, his devotion to study especially of psychology and, more than anything else, his faith in one of his students whom he regarded as a friend and a kindred spirit from the very day of their meeting, gave a new direction to the intellectual activity of the present author. The writing of the Foreword of this work by Prof. Hamley is in keeping with the disinterested personal interest he has always taken in "a keen-minded enquirer" he befriended and guided about fifteen years ago. No attempt is here made to formally thank him, as a vote of thanks may sometimes become redundant and out of place. Instead, may the author hope that readers of this book will thank Prof. Hamley for his undeniable part in its production?

Teachers College,
Kolhapur.
August, 1939.

ANJILVEL V MATTHEW.

Extracts from

PREFACE TO THE FIRST EDITION, PART I.

The following pages contain the substance of the first eleven lectures on education and psychology given to the students of the S. M. T. Teachers' College, Kolhapur. They are now published with the hope that teachers outside Training Colleges and others interested in education will also find in them an easy introduction to educational psychology and general principles of education. It is hoped that the twelfth and succeeding lectures will also be similarly made available to the public in the near future.

I am indebted to all those authors whose works are mentioned in the bibliographies given at the end of the each chapter or in foot-notes, and several others whom I have not been able to mention by name. I have received much instruction and inspiration from them.

This book would not have seen the light of day but for the sympathy and active help given by Prin. K. S. Vakil in all stages of its preparation and publication. I cannot thank him too much for his unfailing kindness.

My thanks are due to my colleague Prof. B. R. Kolatkar for going over the proof of many of these chapters and making valuable suggestions and criticisms. Mr. N. N. Savdi gave much help in seeing the book through the press and in freeing me from all financial responsibility in the matter. Mr. J. B. Kumthekar has obliged all readers of this book by preparing a detailed index. I thank them both for their kindness.

This is a tentative edition, and suggestions and criticisms made with a view to extend the usefulness of the book will be gratefully considered.

March, 1936.

Kolhapur.

ANJILVEL V. MATTHEW.

Teachers College,

Extracts From

PREFACE TO THE FIRST EDITION, PART II.

Part I of this book was published in March last ; and the author feels happy that it has been possible to complete Part II also in the course of another academic year. He is indebted in this matter to the keen responsiveness of his students and the appreciation of friends in different parts of India. The substantial help given by Principal Vakil in the publication of both parts of this book is worth special mention.

The procedure adopted in the publication of Part II is the same as was followed in that of the earlier Part each lecture was written down a week or two after it was delivered and was then printed in pamphlet form and distributed to students. Lectures XII to XXIV are now issued in book form with the same hope as was expressed in the preface of Part I, i.e., that the volume may be helpful to a wider public as an easy introduction to educational psychology and general principles of education.

The long title PRINCIPLES OF EDUCATION with Special Reference to EDUCATIONAL PSYCHOLOGY has now been changed into the briefer, PSYCHOLOGY AND PRINCIPLES OF EDUCATION.

Services of the kind rendered by the two friends mentioned in the preface of Part I were rendered this year by Mr. P. N. Langar who looked after the finance, and Mr. M. S. Shrikhande who helped the author in preparing the index. Thanks are also due to a number of students who occasionally went through the proofs and made corrections.

Teachers College,
Kolhapur.
March, 1937.

ANJILVEL V. MATTHEW.

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I brought out my earthen lamp from my house and cried, "Come, children, I will light your path"

The night was still dark when I returned, leaving the road to its silence, crying,

"Light me, O Fire! For my earthen lamp lies broken in the dust!"

(*Tagore*)

I

AIMS IN EDUCATION

Serious students of education are not only concerned with the practice of education but also with its theory, though some who are actively engaged in it have a tendency to think that as their work is of a very practical nature all discussion on their part of the theory of education is a waste of time that could more profitably be spent on more useful purposes. Whether we like it or not, however, theory is inevitably implied in every practice. Even the most practical and matter-of-fact educationist has some kind of a theory of education, even though it may be that he has not expended any time or thought in arranging and classifying his ideas thereon. An attempt to formulate the theory of any activity in which we are engaged for any length of time is of considerable help to us in that it makes us pause to see whether what we are after is really worth attempting. On the other hand there are those who seem to think that theorising and speculation is the only thing worth doing—people who have a mild contempt for those engaged in the humdrum routine of daily life. It is good for them to remember that "behind every information is an injunction and every theory is a disguised imperative."

The theory of education comprises the history of education, the science of education and the philosophy of education. The history of education is useful in that it tells us how people like ourselves thought in former times about their responsibility in

the matter of educating the young, what aims they set before themselves in the process, and how far they were successful. The science of education tells us how the educational aims we set before ourselves may be realised in actual practice. It is concerned with the accumulation of facts the knowledge of which enables the educator to effect any desirable change in the method of education and in the environment under which it is given. But why should there be any education at all ? What is its ultimate goal ? The discussion of these matters comes under the province of the philosophy of education.

Education is a process. Any one act or single experience does not by itself make up education. Nor is it a mere serial aggregate of facts, but a process with an intrinsic continuity. It is the aim that gives continuity and significance to the series of events and experiences that make up what we call education. Aim presupposes foresight, and unless we keep the end in view and steadily work for it our efforts are likely to be dissipated. Aim thus gives a direction to our manifold activities. What are then the aims that we try to keep in view while engaged in the work of education ?

Different individuals have different aims and ideals in education. In a way it may be said that there are as many aims as there are people concerned in education. Each man's aim in education is a reflection of his philosophy of life, of his ideals and outlook on life, and of his sense of values. So also every national system of education is a reflection of the social philosophy of the nation concerned. As a matter of fact, even each individual's aims and ideals in education, not to speak of those of a nation, may vary from time to time ; and occasionally, side by side, there may exist even conflicting purposes. Therefore when we speak of different generally accepted aims of education it is good to bear in mind that these aims need not all be mutually exclusive. Education is for life and life has different phases and aspects. An aim of education may be compared, as is done by Dewey, to the summit of a hill from where we get a

clear view of a landscape. The same landscape viewed from another standpoint presents a prospect decidedly distinct from the first. The different views do not necessarily contradict but complement one another.

There is one aim however about which there cannot be much difference of opinion. It is that education should be the means of conserving the gains of civilized life and introducing the young to the achievements of the past. There cannot be any doubt that self-education, so far as that is practicable, is the best kind of education, but to try to learn every thing from early infancy by one's own unaided efforts is sheer waste of time, energy and opportunities. For one thing, the human infant is an extremely weak and helpless being dependent on others even for the most rudimentary necessities of life. To see how helpless the young members of our race are, let us imagine with Thorndike that the world is peopled on a certain day only with newborn infants and that by a miracle their lives are saved and that they manage thus to live and flourish for a period of twenty years. How much of our civilization, if one of us were to return to the earth, shall we find at the end of these twenty years ? There will be no language, no clothes, no proper use of houses, no use of many of our tools and implements, no vehicular means of transport, no schools, and no places of worship ! This picture clearly shows us what we owe to our direct and indirect agencies of education. Again, even if we could learn certain things unaided by others what an amount of time and effort will have been spent over extremely trifling matters ! Thus education, as all agree, conserves for us the gains of the past. Differences of opinion begin to set in however as soon as we ask why we should conserve the achievements of the past. Conserving all that we have, what shall we do with it ? What are the main purposes of education ? What is it that any educational system should do for us and for our young ?

One commonly recognised aim in education is that the

persons educated should be able *to earn their living* when they finish their educational career. The presence of myriads of unemployed educated people not only in India but throughout the world adds significance to the promulgation of this purpose. In India, particularly, a knowledge of the three R's (especially if it was in English) was during the last few decades a sure means of getting some kind of remunerative employment. But things have completely changed and to-day there are thousands of educated unemployed persons in the country, so that we have legitimately begun to wonder what is the use of an education that does not help to provide at least the rudimentary needs of our economic life. But education which " is a process in which, and by which, the knowledge, character and behaviour of the young are moulded and shaped " cannot concern itself solely with the requirements of our animal life, much less with the question of its mere subsistence. Man does not live by bread alone, though we do admit that without provision for food and shelter all talk about higher ideals of life falls flat on human ears.

Over against this " bread and butter " aim of education, has been put *the cultural aim.* Those who advocate culture as the aim of education believe that knowledge is worth having apart from any material use that it has for its possessor. In a sense no knowledge is useless. What is more " useless " than the study of stars ? Nevertheless by it several foolish and superstitious fears have been removed from the minds of men in all parts of the world. Again, by the study of stars and planets, their magnitude and distances, the nature of their light and their courses, man has learned much of the immensity of the universe and of his own littleness. This knowledge has certainly not been useless. All the same, the use of this kind of knowledge is different from the knowledge that we require in agriculture, carpentry, or town-planning. Whereas the latter kind of knowledge enables one to lead a more comfortable, economic and physical life, the former helps him to exercise social

tact, urbanity of manners, equanimity of temper, and an interest in literature, music and other works of fine art. Knowledge of this kind is the goal of what is popularly called liberal education, which makes possible as its advocates claim the "viewing of many things at once as one whole, of referring them severally to their true places in the universal system, of understanding their respective values, and determining their mutual dependence." The attributes of this kind of education are according to Cardinal Newman freedom, equitableness, calmness, meditation and wisdom, and philosophical habit.[1] But one cannot resist the suspicion that behind this culture theory of education there lurks the fear that physical labour has no influence in ennobling man. There is also a tendency on the part of the advocates of culture to think that because a person has been engaged in intellectual work, his mind is thereby trained to behave better ever after in all new situations. Formal training however is a doubtful achievement according to recent psychological opinion.

Perfection of our nature is what others mention as the aim of education. All our abilities, all our urges to do good or evil, all our instincts, all our general tendencies, and all the aspects of our physical and mental and spiritual life should, according to this theory, be sought to be strengthened and perfected. Suppression and restraint should have no place in life—a thoroughly impracticable suggestion ! To avoid this difficulty, some advocate the *harmonious development* of all our powers. But even this does not improve the situation. If all our powers are to be harmoniously developed, all of us may be something of a carpenter, something of a poet, something of an engineer, something of a farmer, something of a logician, something of a public speaker, something of a merchant, something of a saint and something of a mystic ! A world peopled

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1. See Newman's *Idea of a University*—quoted by Keatinge *Studies in Education*, Ch. VI.

by such all-round mediocrities may perhaps be a comfortable place but it will be remarkable for no great men and no special talents developed in any man. All the same, there is a kernel of truth in this doctrine that our interests should be as wide as possible. Narrow specialisation is not generally an attractive accomplishment. This is why educational institutions which were formerly in most parts of the world considered primarily as houses of mental culture now give much attention to the culture of the body. The old Greek ideal of a sound mind in a sound body is revived and all good schools make ample provision for sports, athletics, and team games. Boy Scout organizations and Youth Movements do much to popularize this wider view of education. Keeping the same ideal of many-sided interests in view modern schools give scope to the young for creative self-expression through music, painting, dramatization, folk-dance and other forms of fine arts. This is what may be described in the words of a German educationist of the 19th century as "proportionate many-sidedness as distinguished from its exaggeration—dabbling in many things."[1]

Herbart begins one of his famous educational essays[2] with the statement, "The one and the whole aim of education may be summed up in the concept—morality." Some others have the same end in view when they declare that the chief aim of education is *formation of character.* There is no doubt that to lead an upright and socially useful life should be the endeavour of every person. Some one has said that the greatest art is the art of living together, and a famous English educationist wrote a few years ago a book entitled *The Art of Living Together.*[3] During these days when civilized life expresses itself in a net-work of complicated organizations and

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1. Herbart quoted by Henderson, E. N., *Principles of Education*, Ch. 1.
2. *On the Æsthetic Revelation of the World as the Chief Work of Education.*
3. L. P. Jacks—He has later renamed the book *Constructive Citizenship.*

world-wide co-operative relationships, it is most necessary that men should be able to trust each other and rely on each other's sense of honour and uprightness. The fabric of our civilization will tumble like a house of cards if leaders fail to be faithful in the discharge of their responsibilities and common folk fail to stand loyally by the generally accepted standards of fair-play expressed in codes, conventions and regulations. All this implies a high level of character and morality, which educational institutions should try to present in the most acceptable forms to the young.

Indian thinkers from the Vedic times onwards have thought in terms of the Ultimate Reality rather than of the immediate present. For one thing they did not believe that every thing that is in man is worth development ; but insisted on self-control and abstinence and even austerities as a means of true self-realization. Students were called *brahmacharis*, and the word brahmachari has often been used throughout the centuries as a synonym for one who holds himself under the strictest self-discipline. He was to give up comforts—had to wear simple clothes and to take food not to please the palate but to maintain life—and to live under the complete direction of the *guru* (master). He had often to beg food for himself and for the master, not because he or the master was unwilling to work but because it was considered a means of self-discipline. Moreover the Hindu view of life always considered the offer of gifts as well as their acceptance equally ennobling when made in the right spirit, with the result that gifts were regarded as a means of blessing both to the community that supported the educational houses as well as to the humble-minded beneficiaries. The education that was ardently sought after was a means of self-realization of the highest type, of one's realizing not only the best that is in himself as an isolated individual, but as one who shared his spirit with the immortal Universal Spirit. The question which a high-souled woman, Maitreyi, puts as a disciple to her guru Yajnavalkya,

—who happened also to be her husband—is a question which has often been put by seekers after truth in Vedic times and after "If, O Venerable, this whole world with its wealth were mine, could I become immortal thereby?"[1] Knowledge of secular things was considered inferior or *apara*, while spiritual knowledge was regarded the key of all other knowledge and was therefore called *para*—the supreme. The Hindu student's ambition was to know that by which all other things are known, the knowledge of which would make a man humble and respectful, by which the unheard becomes heard, the unperceived becomes perceived, and the unknown becomes known. All knowledge which did not pertain to this supreme goal was considered by the enlightened as "a mere differentiation in word, a modification, mere name."[2]

These are noble thoughts. As educators, however, in spite of our fundamental faith in moral principles and in the importance of character, and in spite of our recognition of the place of religion as an integrating, steadying and ennobling factor in human lives, we have yet to confess that an educational system which has morality or character development as its whole aim is likely to have a narrow view of life and its values. Truth and beauty are as important as goodness and spiritual illumination, nor can the truth and beauty of our practical work-a-day life be safely ignored. Again all the educational aims we have considered hitherto—not the one mentioned last only—refer rather to the future life of children rather than to their present life, viz. their life at school. When we talk for instance of so educating them that they may be economically efficient or cultured in the use of their leisure, we inevitably think of the life they should lead after they leave the school. So also the other aims of an all-round or well-balanced or moral or religious life give prominence to the life

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1. See *Bṛhadāraṇyaka Upaniṣad*, II.4.1 ff.
2. See *Chāndogya*, VII, 1-3.

that is to be lived after students have finished their *preparatory* periods in the school.

But school-life is not merely a preparation, it is *important in itself*. Veteran educationists on both sides of the Atlantic like Sir John Adams and John Dewey have never wearied of deprecating the tendency among those interested in education to sacrifice the present to the future. As the former observes "This notion of subordination to the future is based on a misconception of the whole position. Every stage has its own worth if it really does mean any thing worth having in the future. The ideal is realised in every stage of its own attainment though fully only in them all, not merely in the end. In other words, the process itself counts, and is not merely annihilated. Only by making the best of the present as the present, can we do the best for the future."[1] The school, according to Dewey,[2] can be a preparation for social life only in so far as the school is itself a society, in so far as it reproduces within itself the typical conditions of social life where opportunity is granted for reciprocity, co-operation and mutual service. The business of education is not merely to prepare the young to live happily and fruitfully at some time in the future but the process of living happily, socially and fruitfully *here and now* in the school. This view, as Thorndike and Gates point out, is not based on a mere sentimental attitude toward children but on a hard-headed realization of facts. The emphasis laid on the remote future tends to render the work of both teacher and pupil mechanical and slavish. We shall get more out of our schools when we give due concern to the present needs, interests and activities of school children. Also the adults have no right to deny children that direct present happiness

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1. Sir John Adams *The Evolution of Educational Theory*, Ch. V.
2. See Dewey's Essay on *Ethical Principles Underlying Education.*
3. See Dewey *Democracy and Education*, Ch. VIII.

which they are prepared to concede to them when they grow up.

This insistence on freedom on the part of Dewey and other modern educators has led to *self-expression* being recognised by some as the goal of all education. Is everything in life, however, whether of the adult or of the child, worth expressing? The remarks we have made on the perfection of our nature as the goal of education are applicable here also. Even the most superficial observer can recognise that some features in the process of life are more desirable than others. That a man has a capacity and at times a tendency to suspect, envy or malign others does not necessarily mean that he should be encouraged to express himself in this manner. Again there is not infrequently in each individual even a conflict amongst the several good and desirable traits, urges and desires for these traits, urges and desires cannot all be expressed at once. Above all, man is a social being and ruthless efforts of one individual at self-expression sometimes result in interference with the exercise of similar rights on the part of his neighbour. Thus whatever view we take we find that unqualified self-expression is impossible in modern society, whatever it may have been in the past.

The goal of education is sometimes said to be *adjustment*. Adjustment may be either to the natural or the social environment. Without making certain adjustments to the natural environment no organism can live, and man is no exception to the rule. So we are asked *to live according to nature*. Living according to nature cannot however mean that civilized man should live like animals nor even like savage men. Man is here not merely to adjust himself to natural surroundings, nor to live a life of indulgence in all natural cravings and instinctive urges. His glory is not to accept as inevitable everything that nature may present to him without or within himself, but to adjust the environment to his own higher requirements. Rousseau's insistence that we should live according to

nature was eminently needed at a time when men lived a very conventional life and thought that children should behave just like grown-up, sophisticated members of society, and believed that the only thing that was necessary to enable all young people to attain to a high social and intellectual level was to give them the conventional type of education that was then in vogue. Rousseau's teaching served a very good purpose in that it laid emphasis on the tendencies and aptitudes of each individual as worthy of being considered by the educator. It also gave much importance to the direct physical experiences of the young and to their need of health and bodily vigour. But these positive aspects of his teaching are much obscured by his tendency to make it appear that whatever is originally in man is worth development, that man is entirely good to start with, and that the only thing that spoils the development of his pristine innocence and glory is that he has had the misfortune of coming into contact, when a child, with spoilt society, with the company of grown-up men and women ! He seemed to think that nature was entirely good and that society was entirely bad, and that the ideal education for a child would be to be saved from the company of his fellows ! Every attempt to make him conform to the tenets of his society was according to Rousseau thoroughly evil.

The best that is in any individual, however, comes out only out of contact with others. Man is by nature, as we have already observed, a social being, and many of his powers are atrophied in him unless they are called forth by *healthy relationship with others*. Some great thinkers have been so impressed with this fact that they have gone even to the extent of asserting that the individual exists not in his own right but only as a member of society. That is what Plato and Aristotle taught in ancient Greece, and that is what Hegel taught in more recent days. But there is great danger in that respect for personality tends to weaken in those quarters where it is generally held that the highest function and the most sacred duty of the individual

is to serve society. His position as a *creative and self-determining dynamic personality* is liable to be ignored where the rights of society are deemed supreme. This danger is still more grave where society is identified with a particular State.

To obviate this difficulty the late Sir John Adams used the expression *self-realization* to denote the ultimate aim in education. Sir Percy Nunn prefers to use the word *individuality* in the place of self-realization. Practically, there is nothing much to choose between these two expressions, provided we bear in mind that those who use either the one or the other term do not mean that if an individual has strong temptation by temperament or disposition or by force of habits to pursue an anti-social line of activities he should be given facilities to do so. What they want us to realise is that the theory of education must take account of both society and the individual, and that of the two it is the individual we should begin with. It is true that when we consider the individual apart from his group we understand him but partly, for he has intimate contact with his group which in turn reacts on him and modifies his ideals, sentiments and outlook.[1] Nevertheless it is impossible to get over the fact as Sir John Adams points out that the individual is a separate entity, marked off from all other individuals, though capable of entering into the most intimate relations with them. By treating the individual as a mere means the state fails to obtain from him the same service it would have received if he were recognised as having an end of his own.

Education must take note also of the fact that no two individuals are absolutely alike. There are *individual differences* even among siblings in the matter of general and special abilities, tastes, dispositions, and other physical and mental traits. Any educational system that ignores these fundamental differences among the young and treats them all alike

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1. We deal more fully with this subject in Ch. IX.

may be able to produce certain conformity to outward behaviour as manifested in social manners and customs but will fail to produce the best out of each individual in the community. Without some scope to follow his own ideals and predispositions, no individual is able to make his best contribution to the welfare and efficiency of society. Inhibitions and restrictions are inevitable especially in the early stages of life, but they should be resorted to for positive purposes, viz. to help the individual to realize himself in the best manner possible. Apart from their use in helping the individual to be his own natural self, inhibitions are of no educational value. The function of the educator is to help the natural growth of eacn individual just as the office of the gardener is to help the natural growth of each plant in his garden.

Even insistence on the importance of individuality is fraught with the possibility of gross misunderstanding concerning the ultimate goal of education. For this doctrine as we have hinted already may easily be made an excuse for unthinking self-assertion by some people who try to give free rein to all their impulses, whims and appetites irrespective of what their fellows expect of them in the form of service, comradeship and co-operation. " It is fatally easy," as Findlay points out, " for a man to reinforce his egoistic impulses, to develop his lust for power and his claim to indulgence by appealing to a philosophy of individualism." Sir Percy Nunn himself recognises the danger of a one-sided stress on individuality by declaring that " the most original personality is unintelligible apart from the social medium in which it grows," as the nature of the individual is as much social as it is self-regarding. In other words if individuality is a datum of education so also is sociality. Critics of Nunn therefore advocate *enrichment of personality* as the most satisfactory expression of what the chief aim of education should be. Inasmuch as personality is evidently and undoubtedly individual and as a healthy personality is incapable of development apart from the social milieu, we believe that there is good

reason to commend this expression in preference to the many others we have already mentioned. Individuality we share with all living things; but personality—the final perfection of life on earth with its capacity to love and not merely to lust, to sacrifice one's cherished ambitions through consideration for others, to keep loyal to distant purposes and goals in distracting situations, to assert one's will against the indulgence of natural instincts—this is peculiarly the glory of man. The purpose of education as we conceive it is to strengthen this aspect of life to make of the human being a man, to help him to the enrichment of his personality, and not merely to develop his individuality. Towards the close of this book and especially in the last four chapters, we refer to problems that are peculiarly human and not merely biologically individual, problems in the experience and solution of which we stand higher than even the highest of the other animals.

All the educational aims we have here discussed including the last one i.e. the enrichment of personality are liable to be assailed from one stand-point or another. That however does not make the attempt at formulation of aims fruitless. Any one aim pursued by an educationist regardless of what others think about it leaves him parochial in his outlook. But if in his pursuit he tries to profit not only by his own independent thinking but by a thoughtful study of the critical opinions of others, like the famous Darwin who made a careful note of all the adverse remarks made on his theory of natural selection, he will be able to understand fully the implications of his own stand-point and to work towards the realization of the aim he has defined for himself. We have mentioned a number of possible ideals and indicated which one we ourselves prefer. The reader is similarly invited to do his own thinking and to decide which of these possible aims satisfies him most as a student and a practical worker in the field of education. Formulating his own aim he will do well to keep in view its limitation as seen by others and yet work for its

realization as the best that he knows and the best that can serve the purpose he has in hand. Those who pursue education in this spirit bring to bear on it an intelligent and enlightened outlook which their bigoted or short-sighted comrades fail to do.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Rusk	Philosophical Bases of Education, Ch. I.
Adams	Evolution of Educational Theory, Chs. I, II, V, & IX.
Dewey	Democracy and Education, Ch. IX.
Raymont	Modern Education, Chs. II & III.
Findlay	Foundations of Education, Chs. I & II.
Nunn	Education, Its Data and First Principles, Chs. I & II.
Horne	Philosophy of Education, Ch. I.
Keatinge	Studies in Education, Ch. I.
Thorndike & Gates	Elementary Principles of Education, Ch. I.
Thorndike	Education—A First Book, Ch. I.

II

PSYCHOLOGY AND THE TEACHER

The word psychology comes from two Greek words *psyche* and *logos* which together mean the science or system of the soul. As the word " soul " is now generally applied to the inner nature of man in relation to the Ultimate Reality which transcends the natural and has a religious significance, the term psychology is usually defined as *the science of the mind*. But the mind cannot be studied apart from what it does, and when the mind works we see it operative in behaviour. It is therefore necessary to study behaviour in order to understand the mind. Thus the study of behaviour began to be stressed by students of human nature. Careful observation and recording of behaviour and experiments thereon have been felt to be so important in some quarters that certain protagonists of it go even to the extent of asserting that behaviour is the only proper field of study of those who have a right to be called advocates of the scientific study of psychology. This tendency is specially strong in America where there are psychologists who make behaviour their sole concern, regardless of the presence and role of the mind. If psychology, however, should exclusively deal with behaviour and ignore mind, then even the name psychology should be dropped and its field should be taken as but part of the field of biology. The more helpful attitude is that of British writers like McDougall and Drever who admit the importance of the study of behaviour but stress that it should be interpreted in psychical or mental terms.

Following their lead we regard psychology as the science that studies behaviour and finds in it the operations of the mind, as the science which in other words seeks to give a psychical or mental interpretation to the facts of behaviour of living organisms, more especially to the behaviour of man.

The primary purpose of education is not that those subjected to this process may be provided with a fund of useful information. Even if that were the case a knowledge of how young people react when new materials are presented to them is conducive to better methods of teaching. In teaching we have a tendency to follow a logical method and ignore the attitude of those that are to be taught. The logical method helps us to arrange facts and sequences in the way we consider to be most helpful to the satisfaction of our sense of order and reason. To follow a reasonable order in the presentation of steps in a new lesson is certainly a desirable way of dealing with things. But there is something more desirable, and that is to study the interests and aptitudes of the pupils and to conduct the new lesson in accordance with the insight thus gained. This is not opposed to logic but to apply the only kind of logic that the young people can follow. No one can attend to something in which he is not interested, and the fact that the grown-up is interested in a certain line of reasoning or inquiry and wishes to round up what he has been engaged at the moment by mentioning a few more necessary bits of information is no guarantee that the young people whom he is teaching will also be equally interested in the matter. The plea is not that any thing that does not immediately appeal to the passing fancy of the young should not be presented to them, but that in the main the teacher should rather be guided by the abiding interests of the child than by his own sense of appropriateness. In order that the teacher may find out what the child wants of himself, he should study the child. Psychology is of immense help to the teacher in this respect.

It is also important to notice that the interests and attitudes of children are not constant. The child passes through

definite stages in intellectual development and in social and individual interests. The small child of four or five years has interests and types of activities very different from those of a child of ten years. To mention but one instance the former makes no distinction between the real and imaginary. For him all is play and all is work, while the latter is a thorough realist. He is a hunter and a chaser, an experimentalist keen on finding out what he can do with his father's tool-box. Similarly the boy of nine cannot enter fully into the difficulties and aspirations of the adolescent boy who is shy and reflective and is at the same time careful about his appearance and anxious to please members of the opposite sex. So also the interests and activities of the early adolescents are in many respects different from those of the later adolescents. Without an insight into the characteristics and problems of these distinct stages no man or woman can expect to be a successful guide, philosopher or friend of the young. Psychology helps us in this respect by placing at our disposal the results of the experiences of those who have spent years observing children and helping them in their practical life.

But education is something more than the imparting of knowledge its purpose is to help people grow in the most satisfactory way and to help them realise the best of which they capable. We want them to grow up as useful members of society drawing whatever noble inspiration they can from the membership of the group to which they belong and contributing whatever they can to the healthy functioning of the group as a group. Too often in the past the education of the child was undertaken on the presumption that the original nature of the child was essentially evil and that by a course of rigorous discipline it should be trained to be good. The fear was that if the child was given any freedom he would abuse it and would grow into a villain. "Spare the rod and spoil the child" was a proverb current among the Jews, attributed to their cleverest king about three thousand years ago ; and even today there are numbers of people throughout the

world who believe that the inevitable consequence of sparing the rod is to spoil the child. On the other hand there is a tendency noticeable in certain other quarters, especially in recent times, to assume that the original nature of the child is entirely good and that if he turns out to be bad in any respect it is solely due to the evil influence of adults and of children who have already been spoilt. This was the view presented, as we saw in the last chapter, by Rousseau in the education of Emile, and there are many today who speak and write as if this were the last word of wisdom. Those engaged in the humdrum work of training the young in the home or at the school do not however find this a true picture of what they know to be child nature. Nor do the best among disinterested scientifically minded observers of children vouch for the unalloyed sanctity of childhood. They tell us that there is much in children that is lovely and worthy to be preserved at any cost. But there are in them impulses, urges and tendencies, as there are in the grown-ups also, which if unregulated may do great harm to themselves and to the community. A teacher who has studied the nature and interactions of these conflicting urges is in a much better position to help the young than the one who has to rely on his unenlightened experience.

His acquaintance with psychology enables him to respect the individuality of the child. We appreciate the services of medical men not only because they help us to get out of the clutches of maladies when they are on us but because they help us to keep away from them. Prevention is better than cure in the realm of conduct too, and a knowledge of child nature saves the teacher from making fatal mistakes in dealing with the child. For instance in a class-room there may be children of the introvert and extrovert types, viz. while some are shy, reserved and uncommunicative there may be others who are pronouncedly social, pushing and keen on self-expression. A systematic knowledge of human nature enables its possessors to react appropriately to the different types he comes across. Even among the commonly recognized

patterns or types of human behaviour, one inevitably comes across marked individual differences. For instance all introverts do not have the same characteristics, nor have even those who seem to show similar characteristics acquired them in the same manner nor in identical circumstances. Each individual's problems and difficulties are thus in a sense unique, being different in certain material aspects from those of all others. Teachers who have no adequate idea of such individual differences may try to enforce a uniform pattern of behaviour on all their students, and the effect may be disastrous on at least the most sensitive among them. Even in cases of marked misdemeanour, application of uniform methods of approach by the teacher is not always the ideal means of administering justice ; much less is it the way of fostering the mental health of children nor of developing right social attitudes in them.

Not the least among the many services that psychology does for a teacher is the fact that it reveals him to himself. Grown-up persons do not generally have a vivid mental imagery of the extreme happiness that certain small things or circumstances give to the little ones, or on the contrary of the tragic sorrow that overwhelms them when they are deprived of things or activities on which their hearts are set at the time. For instance even today there are not a few parents and teachers who feel displeasure when their children take delight in play. One reason why they are so strict to their children may be that they have themselves a number of unsolved difficulties in their own personal lives. If the teacher feels a sense of inefficiency or inferiority within himself he is likely to compensate for it by extreme enthusiasm for it in other directions or by a very strict attitude towards children. Insecurity of tenure, discord due to divided loyalties, unsatisfied sexual impulses, handicaps such as a sense of personal ugliness or deformity, incompetence to do the work allotted, domestic misfortunes, inability to get on amicably with neighbours and associates—these are some of the factors that at times tend to make a teacher keen on main-

taining an iron discipline in the school-room. Such people are at war with themselves and their internal conflicts make it difficult for them to deal patiently and sympathetically with their pupils. If a teacher in this unfortunate situation is wise enough to recognise that some of his difficulties may have been caused by his own mistakes and to make an attempt to study his own life with the help of that branch of psychology which has specialised in this direction, i.e., the psychology of the unconscious, he will be doing great service both to himself and to the young folk placed under his care. When a teacher thus gets a glimpse into his own inner nature and understands himself better, he is able to sympathise with his students more adequately and to deal with their behaviour problems more tenderly and tactfully.

A knowledge of psychology is highly useful to the teacher but if he does not have other qualifications as well, he cannot become an ideal teacher. For instance, any amount of insight into the working of the mind cannot make a teacher proficient in the subject-matter that he wants to present to his class. He may even be proficient in the technique of teaching ; but it is most necessary that he should acquire knowledge before he can impart it. One reason why many teachers fail to be an inspiration to their class is that they do not create the impression of themselves being good students of the subjects they profess to teach. Even young people can tell the man who rests on his oars from the one who is interested in knowing all that he should on the subject in which he deals. It is not necessary that the teacher should teach his class everything that he knows, but if he wants to be an inspiring example of his profession it is important that he should know much more than he actually tries to communicate to his students. The good teacher does not seem to exhaust his stock in trade but gives his class the impression that he has touched as it were only the fringe of an intellectual field which they may explore on their own initiative.

Proficiency in psychology does not necessarily make a man love his students any more than it makes him love his sub-

ject. His interest in his students as human beings and his keenness to be of service to them to the best of his capacity is a reflection of his outlook on life, of his individual philosophy of life, which regulates all his decisions and activities. A man who cares for work first and is interested in drawing his salary as a means to it, is certainly different from the man who is anxious to have a comfortable life by drawing a decent salary and finds that he has inevitably to work in order to get that salary. Pestolozzi wanted to psychologise education, but his knowledge of psychology was extremely limited compared to modern standards. What made him a remarkable figure in the field of education was that he cared immensely for his pupils and that in spite of all his failures in school organisation he cared above anything else to be a friend, a teacher, nay a father to the little ones who went to him for instruction and guidance. That the teachers of India from ancient days were not strangers to the ideal so enthusiastically aimed at by Pestolozzi is made known to us even by the name we have for a school current in many parts of India. The school has been popularly called a guru-kul (literally, *master's family*), and, as the name suggests, the boys lived with the master as in a home. They were not boarders who paid money to the *guru*, but were members of his family supported and loved by him as his own children ; and they in their turn loved him and respected him as a father, and helped him in maintaining the family as much as his own children did.

That the possession of much psychological knowledge is no guarantee that a person thereby becomes an ideal teacher does not belittle the importance of psychology, which is helpful both in the philosophy of education and in the practice of it. It is the province of the philosophy of education to formulate the aims of education. But it is by means of psychology that we can decide whether the aim for which we are working in our educational effort is capable of achievement. If without this knowledge we venture out, we may have in the end to make the painful discovery that we were on the wrong track.

This knowledge also stands us in good stead when at the end of the educational process we review our achievements to see how many of the aims we started with have actually been realised. By our knowledge of psychology we shall be in a position to compare adequately the behaviour of the educands before and after we started our educational work with them.

Psychology, however, does not unfortunately speak with one voice about the problems of human nature and understanding. *Conflicting Psychologies of Learning* is the name of a recent book published in America and the title represents a true state of things. It will not be out of place here, we presume, to take a bird's eye view of some of these important branches of psychology. Before referring to modern schools of psychology, let us first glance at some of the older psychologies. *The Structural School* of psychology dealt mostly with consciousness and was interested in analysing consciousness into what its upholders thought to be its constituents —cognition, conation, and feeling. *The Functionalists* also were chiefly interested in consciousness, but they were interested in studying the reactions produced on the mind as a whole when brought into contact with the environment. The Functionalists laid great importance on the instincts and on such activities of the mind as attention, observation and will. Both the Functionalists and Structuralists may be said to belong to the *Analytic School of Psychology*.

We often hear even today the expressions Faculty Psychology and Association Psychology. These may be taken to be offshoots of Analytic Psychology. There are not now as many systematic advocates of *Faculty Psychology* as once there used to be. The assumption of Faculty Psychology is that life is a bundle of different faculties or powers such as the faculties of reason, memory, will, observation, judgment, etc. It is now more commonly recognised that it is the whole organism that reacts to a certain situation, that the so-called faculties are only abstractions, and that they cannot be cultivated or trained in such a manner as was once supposed to have been possible.

The Associationists held that the mind consisted of ideas, and ideas were supposed to be more or less independent entities adhering to one another by such relationships as contiguity, similarity and contrast. Ideas, all of us have ; but they are thought-patterns of the whole mind, and not independent contents of a receptacle called mind.

All these psychologists we have mentioned relied on *introspection* for their data. They looked into their own minds to see what they felt or experienced, and recorded what they experienced within themselves. But introspection is a subjective activity, and there is no means for us to check and verify the experience of others. Again an experience is not the same when one unreflectingly experiences it and when later on he turns back and tries to examine what he had experienced. For example a man who wants to examine his anger is no more angry when he tries to examine what he felt like when he was angry. He is then able to study not his anger but only a memory of his anger. So, too, there are persons like children and insane people who are not able to give any connected account of the working of their inner selves, but their reactions to any given situation are not thereby rendered any the less worthy of the attention of students of human nature. For all these reasons it is important that behaviour should be objectively studied and tested by skilled and experienced experimenters. Thus has arisen *Experimental Psychology*, with the founding of which are associated the names of such German pioneers as Weber, Fechner, and Wundt. Francis Galton of England and Stanley Hall of America were two of the eminent workers in English speaking countries who applied the experimental method to the study of the human mind and activity. Experimental psychology is now like a vigorous ever-green forest tree with mighty branches and numerous offshoots and sub-branches. That branch of experimental psychology which deals with the measurement of intelligence is generally referred to as Mental Tests. The most famous name in the history of mental tests is that of Alfred Binet of France. Many experiments have been conducted to

find out the fundamental laws and principles of the learning process ; and our knowledge of such activities as memorisation. attention and reasoning or puzzle-solving is much more definite and clear cut today than it used to be before the advent of the experimental method. Experiments to measure personality traits such as go to form what is comprehensively called a man's temperament or character have also been attempted, but the results have not yet been as successful as those of intelligence tests.

The emphasis on objective well-controlled observation and experiments has given rise to what is called the *Behaviourist School* of psychology. The behaviourists condemn generalisations based on mere introspective experiences and seek instead to base all their laws on demonstrable objective facts of behaviour. They have thus helped psychology to be regarded as a science operating on scientific bases with scientific methods, rather than as a branch of philosophy using the instruments of intuition and speculation for arriving at its generalisations. But the behaviourists have a tendency to think that all behaviour is nothing but a series of reflexes, and some behaviourists even go to the extent, as we have already mentioned, of denying the necessity of regarding mind as a factor in experience. To them the living organism is a complicated but well-adjusted machine, and this is why the opponents of this school sometimes uncharitably call them *the mechanists*.

In contradistinction to these, we have the *Purposivists* who see every organism consciously or unconsciously striving towards the realisation of some goal or life-purpose. But what is this goal ? There are some who believe that it is pleasure—the hedonists, as they are called. They point out that all animals try to do things that give them pleasure and to avoid doing things that are unpleasant or painful. To argue from this and to contend that all the actions of every organism are solely motivated by a desire to obtain pleasure and to avoid unpleasure or pain seems to be far from convincing. It is true that

animals have a tendency to repeat pleasurable activities and to generally avoid unpleasant or painful situations or lines of activities. But they do not always avoid dangerous situations. A human mother who tries to save her drowning child at great risk to her own life does not evidently do it for the pleasure she experiences in the act. The writer has on several occasions seen helpless mother hens rushing against dogs that approach their chickens, dogs that could easily make an end of the mother and her whole brood. It is hard to believe that it is pursuit of pleasure that leads to these activities any more than we can believe it is the mere working of reflex machinery that issues in such daring feats. Rather we would say that the goals themselves attract us, goals such as food, a mate, the company of others, the approval of the group, etc., and that when we strive for these goals the efforts give us pleasure. Pleasure often ensues when attempts to do or attain anything are successful, but it does not mean that it is for the pleasure we work. Something is desired and is felt to be worth while working for, and we work for it. In other words it is in the nature of living things to hold certain ends as desirable and to strive towards them. The school of psychology, and of biology in general, which recognises the importance of life-urges is known as the *hormic school.* The chief advocate of the hormic school of psychology in English speaking countries is the grand old veteran William McDougall.

A new school of psychology familiarly known as the *Gestalt school* has arisen in Germany, and the number of its followers is rapidly rising. Their views are more like those of the Purposivists than those of the Behaviourists, and their chief hypothesis is that the organism reacts as a whole and reacts to a whole situation. Their stand-point is diametrically opposed to that of the old Associationists. The Gestalt school includes in its purview the study of animals as well as of human beings. When the behaviour of animals is specially studied *Animal Psychology* arises, a progressively important branch of general psychology.

When human psychology concerns itself with the study of childhood we have *Child Psychology*. The study of the progressive growth of the body and the mind in such stages as infancy, childhood, adolescence, etc., is sometimes called *Genetic Psychology*. When we specially devote attention to the study of those people who are pronouncedly different from the ordinary we get *Abnormal Psychology*. There are different schools of abnormal psychology which are sometimes called schools of *Psycho-Analysis*, though this latter name is claimed exclusively for themselves by Freud and his strict followers. That branch of psychology which deals with the relation of the individual to the group and of one group with other groups is known as *Social Psychology*. When psychology is applied to different branches of human activities, we get such things as *Medical Psychology, Industrial Psychology*, etc., as well as *Educational Psychology*.

It may be admitted that we do not expect every teacher to be proficient in all or even any of these branches of psychology. But it is most necessary that at least a few teachers should be closely acquainted with them so that the rank and file may be profited by their leadership and expert knowledge. The various schools of psychology have their bearings on educational theory and practice. The findings of Social Psychology are of great importance in regulating the corporate life of students. The laws of learning are greatly modified by what we know from Animal and Gestalt Psychologies. Industrial and Medical Psychologies enable us to regulate working condition within and without the school-room. The Hormic or Purposive School lays emphasis on the need of stimulating the purposive efforts and motives of the learners. The observations of the Behaviourists help us to give closer attention to the physical factors that accompany and condition their inner activities. The Psychology of the Unconscious has revolutionised our ideas of human motives and makes the stern disciplinarian and the " puritan " pause to examine his own inner self and to sympathise with his erring students and colleagues.

Even though the ordinary teacher cannot afford to read the works of the great psychologists of the various schools he deprives himself, his students and the community whom he seeks to serve, of much benefit if he does not maintain an attitude of interest in the writings of those educationists who make a special study of psychology and try to make their knowledge available to their less fortunate colleagues.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Sandiford	Educational Psychology, Ch. I.
McDougall	Energies of Men, Ch. II.
Welton	Psychology of Education, Ch. I.
James	Talks to Teachers, Ch. I.
Reyburn	Introduction to Psychology, Ch. I.
M. Drummond	Five Years Old or Thereabouts, Ch. I.
Ross	Groundwork of Educational Psychology, Ch. I.
Drever	Introduction to Psychology of Education, Ch. I.
Ragsdale	Modern Psychology and Education, Ch. III.
Koffka	Growth of the Mind, Ch. I.

III

THE HUMAN BEING AS A LIVING ORGANISM

In order that any human endeavour may be successful it is necessary that those who set out on it should know definitely what they are about, i.e. they should know their own purpose, and secondly that they should have a clear idea of the circumstances in which they have to work out that purpose. We shall take it for granted that we know why we give so much importance as we do to educational efforts, and now proceed to consider the setting in which all these efforts are undertaken. In education there are certain facts that we have to recognise as forming the foundation on which we build the structure of education. They are the data of education. We have to accept them as they are and make what we can out of them. Any theory that ignores these fundamental facts has no chance of being respected by men who know their business. Heredity, the natural and social environment in which the educands find themselves, the general and special tendencies with which they start their lives as human beings, the physiological machinery through which these tendencies work —these are to be taken for granted in all our educational activities. Many of these factors we share with other living things though they are not able to experience the fulness of life a human being enjoys. This universality of experience which we share with other organisms is another fundamental fact the comprehension of which will help in clearly visualising man's achievement in the field of education.

Education is concerned with the modification of behaviour, and behaviour is a word that is applicable only to living things. We sometimes say that an engine *behaves* badly, but then we use the word figuratively. Strictly, behaviour belongs to living things. What then are the characteristics of behaviour, of the process of reaction to outside influences peculiar to living things? The first characteristic of a living thing is that it is a system of forces and activities functioning in a spontaneous manner. A living thing has a physical body and the elements of the body are material things which can be examined and studied by the physical sciences. But it is more than a mere combination of material things. By processes of physical or chemical analysis alone we cannot discover the true nature of organism, nor by synthetic process has it been found possible to create life. The living organism is a good instance of the modern axiom that the whole is greater than the sum of its parts. All the material substances found in an organism could not by a process of mere synthesis have created its spontaneity.

The spontaneity of the living thing is clear in its reaction to external influences. It is not independant of the environment. External factors do affect it, but it is able to assert itself against the environment in its characteristic way. So long as there is life in it, it expresses itself. The floor of a room was repaired—it was levelled, hardened, and was given a cement coating. After a few days a small crack was observed in the new floor, and when examined it was found to be caused by the growth of a seed which a careless workman had failed to remove from the materials used. Life, so long as it exists, refuses to be suppressed into ineffectiveness. This tendency of living things to assert themselves is made popular in English-speaking countries by Sir Percy Nunn under the name *horme*. Modern education recognises the fact that the hormic energy of the child cannot safely be suppressed. The child has as much right to self-expression as the teacher or the parent or any other adult has, and any undue attempt to enforce discipline is to work contrary to a fundamental biology.

An organism has a tendency to maintain itself even against adverse circumstances. If parts of a plant are cut, it shoots forth new branches to take the place of the parts cut away. A young tree which grows under a shade bends itself in order that it may get its due share of sunlight. The tendency of an organism to maintain itself is still more evident in the case of animals and men. If an animal is wounded the wound heals from within. If one of the lungs of an animal is rendered unfit for its functions, the other lung puts forth an extra amount of effort in its endeavour to maintain the efficiency of the system. The blind man generally develops a finer sense of touch and hearing than the man of normal eye-sight. Again it is said that there are certain proportions of oxygen and carbon dioxide in the human system and that whatever be the conditions under which a person lives there is a tendency for his system to maintain these proportions. In the social and economic life of man we see the same tendency at work. A rich man lives on thousands of rupees a month and believes that he cannot live without the environment of the comforts and luxuries he has been accustomed to from his early days—until at last crisis comes and he is left with a poor pittance, when he slowly, though of course with much difficulty, adjusts his mode of living to the changed circumstances. People living in unhygienic and squalid places such as the equatorial forest regions or the slums of great cities also manage to lead their weary lives with some kind of satisfaction to themselves, though inhabitants of more favoured regions would shudder at the possibility of themselves living in such dreary places.

Life is creative. A living organism is "self-building, self-repairing, self-regulating and self-reproducing."[1] That it is self-repairing and self-regulating we have already found. The self-building of an organism we find in its process of growth. Growth is evident to our eyes when it is physical, and physical growth is universal in living things. The

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1. Badley *The Will to Live.*

mighty teak-tree that withstands all storms and still maintains its proud and erect position, the huge elephant that moves heavy blocks of timber, and the full-grown man who controls and tames the elephant and other wild animals to habits of obedience and service—all started their respective lives as humble and microscopic cells. Parallel to physical growth we see in man and to some extent in the higher animals, his nearest biological neighbours, an inner growth. Just as on the physical side man starts his life as a single cell and, passing through the stages of a parasite and a helpless baby, attains to full manhood, we see him progressing on the psychical side from unconscious urges to a life of activities characterised by self-consciousness and fore-thought. The grown-up adult is no longer the tiny, helpless thing that he was, but a strong, creative agent who forges his own weapons, builds comfortable and luxuriant houses, bridges wide rivers, and travels not only on land but under the sea and over the clouds. Even primitive man is able to attack and overcome his powerful enemies of the forest, enemies several times stronger and fiercer than himself. The creativeness of man we find still more in his production of beautiful things which are not necessary to him in keeping intact his animal life. Such things we call his works of art, works that are not indispensable for his animal existence but without which his experience is not the rich and refined thing that it actually is. The crowning glory of man's creativeness, however, we see when he devotes his life to the service of ideals, suppressing the natural impulses where necessary and offering his very life to the preservation of those ideals if and when they are threatened. Truth in the realm of ethics or science, justice in social relationships, brotherhood of all human beings irrespective of creed or colour—these are some of the ideals or values in life in the service of which some of the best men and women exercise all their creative efforts.

The modern emphasis on the need of creativeness in education is thus based on sound scientific principles. There

was a time when teachers believed that they did good work if they gave useful information. We have now begun to realise that education of the right kind is much more than instruction, and that any system or process of education is a failure inasmuch as it fails to give the child scope for the exercise of his creative energy. In other words, the freedom of the child must be recognised and respected. Hence modern pedagogy insists that education must be child-centred, and not centred on the energy and enterprise of the teacher. The teacher's function is to help and direct the creative efforts of the child through such channels as drawing, painting, moulding, music, free and organised forms of recreation and play, and practical forms of juvenile social service as well as through the mastery of the school subjects. Even in the latter—the mastery of useful information—such devices as the Dalton Plan and the Project Method have come into vogue which insist on the creative efforts of the child as their prime condition.

Creativeness is impossible without conservation as "it is on past experience that we draw for guidance in dealing with the present and for anticipating the future." It is not on our dead selves that we build our lives but on the living past. As Tennyson's Ulysses puts it

> All times I have enjoy'd
> Greatly, have suffer'd greatly, both with those
> That loved me and alone ;.
> Much have I seen and known ; cities of men
> And manners, climates, councils, governments,
> And drunk delight of battle with my peers,
> I am a part of all that I have met ;
> Yet all experience is an arch wherethro'
> Gleams that untravell'd world.

This conservation is at the basis of all accomplishment, individual and social. Nothing that we have ever experienced is entirely lost on us but leaves its sure mark on us even though it may be that we do not recognise its effect. The conscious

aspect of conservation is called memory, but conservation is much wider than memory. It includes what some would call "unconscious memory." No learning is possible unless the organism conserves its experiences. As a matter of fact the present condition of any organism may rightly be described as the result of all its past history. This includes not only its own individual past but also the past of its race. For instance, the instincts may rightly be regarded as racial conservations. It is the repeated experiences of untold generations of the species that have resulted in what we call the instincts. Hence some people speak of Recapitulation, a theory that every man in his own life repeats rapidly the course followed by the race in its evolution from the single-celled amœba to the civilized man, passing through all intermediate stages of unsegmented and segmented animals such as the jelly fish, the fish, the reptile, etc. Even after birth, it is supposed, the young human being passes through the various culture epochs such as of the hunter, the nomad, and the savage—until by adolescence he begins to behave like a civilized person. Whatever be the truth of these recapitulation theories, there is no doubt that all progress in our individual lives is due to our capacity to conserve past experience. We are all able to walk and run and jump, and we are so able to do these things that we have almost forgotten how difficult it was for us early in our life even to have balanced ourselves on our helpless feet. What we are now able to do with so much ease has been the result of the conservation of experience. All our mathematical skill is possible because we once mastered the multiplication-table and have conserved the benefit derived. No painter whatever exists who has not conserved his knowledge of mixing colours acquired in his early days. Wherever we turn we find that all our behaviour is full of the evidence of conservation.

It is because of conservation that we are able to put forth creative activity. Without this property of *mneme*, no hormic effort can possibly be made. Teachers who make an

attempt to be modern in their outlook have a tendency to minimise the importance of drill in learning. Learning should undoubtedly be conducted in an intelligent way, and the active interests of the child must be aroused. But there is nothing in the vital sciences such as biology and psychology to suggest that all drill work is detrimental to true intellectual development. On the other hand even the most recent schools of psychology recognise the importance of the law of exercise in learning. Learning of any kind whatever is possible only because the organism conserves its experiences. Lifeless things cannot learn because they are incapable of conserving and consolidating past experience.

The *hormic* and *mnemic* activities are all aspects of the same life-force or will to live, which in its integrative role we call cohesion. Without cohesion our activities would merely have been disconnected elements, which they certainly are not. Life functions as a whole and this wholeness of life, whether of plant or reptile or man, is said to be its cohesion. There was a tendency about a generation ago to think of mind, for instance, as made up of cognition, conation and affect. However helpful it may be for logical arrangement to think of the functions of the mind separately, it is more correct to regard life as an integrated whole rather than an integration of parts. The old Association Psychologists rendered a service when they got attention directed to the way different ideas were interconnected, but they were wrong when they produced the impression that the parts were primary and that the whole was evolved out of the parts. It is the organism as a unified totality, the whole reptile, the whole insect, or the whole man that responds to a situation. From the whole we pass on to the consideration of smaller units within the whole, and from the smaller units to the detailed and seemingly independent parts of these units.

Thus we meet with what Sir Percy Nunn aptly calls "heirarchies of hormic processes." Let us take the example of a man who builds a house. For him the various parts of the

house have significance only in so far as they serve the whole that he has in view. The whole building has walls, floor, ceiling, etc. The walls have in their turn stones, iron bars, wooden beams and cement in them. Or, let us take stone-cutting. It involves such activities as digging the ground, removing bigger blocks from the quarry, and putting them into shape. In all such cases the conception of the whole directs and regulates all minor process. In all our activities this principle is applicable. Parts there are, but they are meaningless except as elements of the whole. The teacher will find this principle extremely useful whether he tries to impart instruction or to modify the character and conduct of the young. The ideal lesson is one that gives prominence to the whole and considers the part useful only in so far as it serves the whole. In character-building the attempt to cultivate unintegrated virtues is futile.

Another characteristic of an organism which like all life-processes involves both horme and mneme is what we may call selection. The organism does not take equal notice of all the features of the environment. It selects as it were certain features in it and responds to them. Even plants exercise selection. When a rose tree draws from the earth that particular food it requires and leaves off the rest, it selects its food. Animals at all levels exercise selection, e.g. a cat is indifferent to the rumbling of a car but gives rapt attention to the gnawing of a mouse. When a human being virtually ignores a thousand sights and sounds that surround him and gives his attention to his friend who beckons to him from the top of a hill, he exercises selection. It is man's glory that not only can he attend to the immediate present but can even determine what he will attend to in the future and regulate his life in accordance with these distant goals. He is capable of not only spontaneous but sustained and deliberate attention.

The principle of selection has an important bearing on the upbringing of the child. Just as there are differences between one biological species and another there are differen-

ces on a smaller scale between individuals of the same species. Modern pedagogics recognise the remarkable differences between the several individual members assembled in a common class-room. Some of these differences are caused by environmental differences, but the more fundamental among them owe their existence to hereditary and other innate factors. To these factors we shall refer at some length in later chapters. Here in passing we shall merely note that whatever be the causes, individual differences are there as a fact and we have to recognise them in all educative processes. We should therefore seek, as much as lies within our power, to allow the individual child to develop in his own manner and according to his ability. He must be given scope to exercise his own choices so that thereby his individuality may be developed. The existing system of education is based on the assumption that children need not be given any scope to exercise selection though something in this direction may be allowed in later adolescence when they are admitted to university courses. If, however, selection is exercised as we observed even by plants and animals why should we deny it to little children ? We do not for a moment contend that children need not make an effort to attend to anything to which their attention is not spontaneously drawn, it is most necessary that they should ; but it is also a matter of vital importance, on the other hand, that their personal likes and dislikes, their individual aptitudes and dispositions should constantly be borne in mind by the educator.

Finally let us notice that a living thing has a tendency to profit by its experience. We do not know how far this is true of the members of the vegetable kingdom but it is undoubtedly a characteristic of animals. There is a general belief that animals have no intelligence and that their actions are solely guided by instincts. There is no doubt that they are mostly guided by instincts, but careful observers of lower forms of animal life tell us that even they are able to make some adjustments in their movements to meet changes in their

situations. McDougall gives us examples of the kind from what he and his son observed about the building of cells by mud-wasps. Some one has said that if the amœba were as big as a dog, thus enabling us with the naked eye to see how each one behaves, we should see clearly individual variations in the behaviour of each member of the species. We should also see how the amœba profits by its experience, some thing which is now observed only by experts under the microscope. But there is no doubt that the higher the animal the greater is its capacity to modify its behaviour according to the needs of the occasion, and in man the modifiability of his reactions is so great that it is hard to discover therein the non-variable elements so prominent in the lower animals.

All these aspects of behaviour we have noticed are expressions of one great factor—of life, or, as some would prefer to put it, of the will-to-live ; and they are hard to explain unless we assume that they are guided, however unconsciously, by what we referred to towards the end of the last chapter as *purpose*. Living things assert themselves, exercise creative energy, select those features of the environment to which they respond, and conserve and profit by their experiences in a way that no mere material, lifeless thing can. They, as McDougall vividly describes, do not merely respond in a mechanical way to stimulating factors outside, but evidently continue their activities even when the original stimuli are removed. They persist in their line of activities. Not only so, they change their activity according to changes in the environment. A chased hare for instance not only runs but changes its course of flight as need arises. Again, the organism stops its activity when the objective or goal is attained. The hare we have mentioned does not necessarily run until all its energy is exhausted ; it stops running much earlier if the danger is felt to be absent, though we admit that the comprehension of the situation need not be at all conscious to anything like the extent it is in the human being. Still when we speak of the behaviour of animals, even of animals much lower than the hare, we find it hard to entirely avoid

expressions that we more appropriately apply to self-conscious human beings. True that purpose, as we generally understand the term, implies volition and self-conscious deliberation. Nevertheless it does not seem out of place to use it in a wider sense to denote action *directed towards a goal,* however dimly and imperfectly that goal may be entertained. In this sense purposive effort may be said to be the most fundamental characteristic of mind.

It makes a great difference in our outlook as educators whether we view life as dominated by purpose or as an extremely efficient and elaborate machinery of nerves, glands and muscles. If we believe in the purposiveness of life, we shall try our best to enlist the purposeful activity of our students in efforts calculated to enrich their lives. We shall not only try to establish in them good habits and customs but also try to regulate their dynamic energy in order that they may hold before them noble and enduring life purposes. We shall also be more reverent and humble in our attitude towards the existing natural order of things when we understand that the rudiments of purposive energy have been bestowed not only on man whom we recognize as the crown of creation, but also on the humblest microscopic, single-celled amœba.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Drever	Introduction to Educational Psychology, Chs. II & III.
McDougall	(1) Outline of Psychology, Ch. II. (2) Energies of Men, Ch. III.
Nunn	Education, Its Data and First Principles, Chs. III & IV.
Badley J. H.	The Will to Live, Ch. II.
Sandiford	Educational Psychology, Ch. II.
Koffka	Growth of the Mind, Ch. I.
Ross	Groundwork of Educational Psychology, Chs. III & IV.
Ogden R. M.	Psychology and Education, Ch. II.

IV

MIND IN RELATION TO THE BODY

All of us talk about our bodies and our minds. We seem to know definitely what we mean by the body, but when we begin to speak of the mind difficulties creep in, and the difficulty becomes all the greater when we try to explain the relation between the body and the mind. Common experience tells us that they are related to each other. When one says, "My mind is not very fresh to-day as I had no sleep last night" he gives expression to the belief that the two, mind and body, are inter-related.

The scientific explanation of this body-mind relationship is not easy. Whatever mind is, it is not a material substance that may be studied by the physical and chemical sciences. How can something that is immaterial affect and be affected by body which is matter? Different attempts have been made to explain the connection between body and mind. On the one hand there are the *Behaviourists* who try to get out of the difficulty by virtually denying the importance of mind. They consider the body to be a beautiful automatic machine which does not require a mental postulate to explain its working and believe that what is called mind is only a reflection of physical processes that take place within the body, especially the finely developed part of the body—the brain. For them thought is silent speech and speech is entirely physiological. On the other hand, there are the *Idealists* to whom the only real thing is the mind. According to them we experience the outer world including our body by virtue of the mind. The

physical world is to them of the nature of an appearance. According to them, " Apart from minds and their ideas there is nothing in the world, nor is it possible that anything else should ever be known, since whatever is known is necessarily an idea ".[1] In different ways Sankaracharya and Hegel (of Germany) and their followers hold to this view of the insignificance of the material, and therefore also of the body which is material.

Between these two extremes stand the advocates of *Psycho-physical Parallelism* to whom bodily changes and mental effects are both real. As they conceive it, whenever there is a bodily effect there is a mental effect and whenever there is a mental effect there is a bodily effect. Which of these effects is primary, they cannot tell. They believe that somehow the mental and the physical are parallel and simultaneous, though they dare not explain how these two entirely disconnected entities should always go together. The *Epi-phenomenalists* try to improve the situation by contending that it is the body that affects the mind and that the mind as such has no influence on the body. According to them, volition is only an emotion indicative of physical changes, not a cause of such changes. " Our mental conditions are merely the symbols in consciousness of the changes which take place automatically in the organism ; and to take an extreme illustration, the feeling we call volition is not the cause of a voluntary act, but a symbol of that state of the brain which is the immediate cause of the act. We are conscious automata."[2]

The *Inter-Actionists* hold that the body brings about changes in the mind and the mind in the body. There are difficulties in the acceptance of this theory also, if body and mind are regarded as two distinct and different things. We believe that immensely the more helpful way of dealing with the body and the mind is to regard them not as two different

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1. Bertrand Russell *The Problems of Philosophy.*
2. Huxley *Science and Culture* quoted by B. H. Boyd in *Conflicting Psychologies of Learning,* Ch. VIII.

entities somehow working together but as aspects of a single unit, *a body-mind unit*. The distinction between them is only a matter of abstraction. The body-mind is the whole from which by analysis we differentiate the two parts for convenience, parts that are subsidiary to and dependent upon the whole for their fully developed dynamic character. The emphasis laid by the Gestalt School on the whole functioning as a whole is very helpful to us in our understanding of the nature of the body-mind unit also. Sir Percy Nunn has done a great service in making popular this view of the relation between the body and the mind even before the Gestalt idea became current in English-speaking countries.

The most important part of the body from the standpoint of the mind is the nervous system. It is the nervous system that integrates the body into one and it is through the nervous system that we respond to stimuli from the outside world. It is the mechanism in short of all knowledge and of action.

The *structural unit* of the nervous system is the neurone. It is generally made up of a nerve cell, an axon, and a dendron (also called dendrites). The dendrites are usually profusely branched ; but the axon is not except at the end, where it is commonly spoken of as the end-brush. What we in popular language call a nerve is a bundle of nerve fibres which may contain axons of thousands of neurones. The neurone is invisible to the naked eye being of microscopic breadth though it may vary from a fraction of a millimetre to about three feet in length. There are two kinds of neurones the sensory (the afferent) and the motor (efferent). It is supposed that sensory and motor neurones are highly specialised in their functions, the former sending an impulse towards the central system and the latter carrying the impulse away from it, though what we ordinarily call a nerve contains nerve fibres of both kinds of neurones. Generally, a sensory neurone does not directly communicate with a motor neurone but does it through the grey matter in the spinal cord or the brain. The transmission of a nerve impulse from a

sensory to a motor neurone is the most elementary piece of work in the nervous system and it may be said to be its *functional unit*, just as a single neurone is its structural unit.

Between one neurone and another is a small space of microscopic distance called a synapse. "Here the end-brush of one neurone stimulates the dendrites of another. Communication across a synapse is always in one direction, from the end-brush of one neurone to the dendrites (or to the cell body) of another."[1] The synapse seems to offer a certain amount of resistance to the passage of nervous impulse. But this resistance is lowered through frequent use with the result that favoured paths of conduction are established and, according to the behaviourists, these favoured paths account for the establishment of habits and of the learning process in general. In learning to ride a cycle, for instance, one step in the series of activities known as cycling calls forth a second, the second calls forth a third, and so on—according to the most favoured paths of conduction brought into existence by the lowering of resistance at a multitude of synapses through acts of repeated practice.

The neurones are grouped into three systems ; the Central Nervous System, the Peripheral System, and the Autonomic System.

The Central System consists of the brain and the spinal cord, which together practically form one continuous tube bulging out at one end and containing a jelly-like substance protected by the back-bone and the skull. What we generally call the brain consists of (1) the fore-brain containing the cerebrum and the thalamus, (2) the mid-brain, and (3) the hind-brain. The cerebrum, the chief part of the brain and its latest and best developed part, exercises control over almost all bodily and mental processes. The development of the cerebrum is particularly associated with intellectual development, and man has proportionately a bigger cerebrum than all other animals. It is divided into two hemispheres which are again sub-

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1. Woodworth *Psychology A Study of Mental Life*, Chap. IX.

divided into lobes, and these latter are still further convoluted. Each hemisphere is covered with grey matter. This surface grey matter is called the cerebral cortex, and is the physiological seat of all higher mental control. It is believed that man's greater intellectual equipment is due to the relatively bigger size of his cerebrum and its larger number of convolutions or folds which make possible interconnections between the various parts of his brain. But the difference between two brains in weight is no sure indication that the man who possesses the heavier brain is the more intelligent of the two. As Wheeler points out[1] one of the heaviest known human brains came from a feeble minded individual while certain intellectual geniuses have had exceptionally small brains.

While the average brain-weight of a human male is in the neighbourhood of 1400 grams,[2] Anatole France had an exceptionally light brain of 1017 grams. Special areas have been mapped out in the cerebrum as the seat of sight, hearing, speech, etc., and some people even go to the extent of believing that there are special areas for reading and writing. But recent experiments by Lashley and others have given some indication that in spite of the highly specialised functions of its parts the brain does not merely work as a combination of semi-independent parts but that a central organisation of some kind is operating in the brain as an integrated whole, " that

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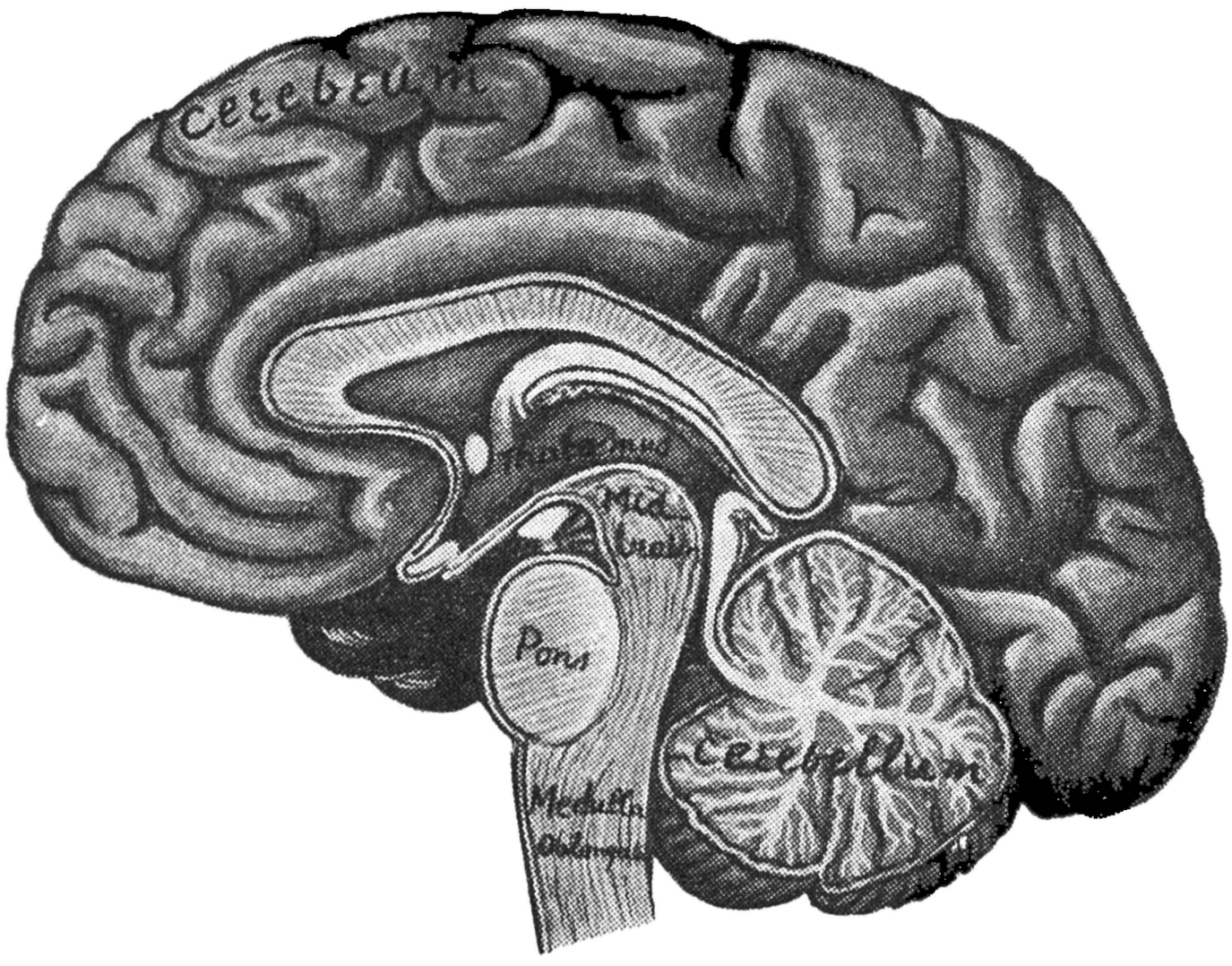
1. Wheeler *The Science of Psychology*, Ch. XIV.

2. " The average weight of the brain, in the adult male, is about 1380 gms. ; that of the female, about 1250 gms. In the male, the maximum weight out of 278 cases, was 1840 gms., and the minimum weight 964 gms. The maximum weight of the adult female brain, out of 191 cases, was 1585 gms., and the minimum weight 879 gms. The brain increases rapidly during the first twelve months of life, and the brain of a year-old child is on the average two and a half times as heavy as the brain of a newly-born infant. By the sixth year the brain has reached 85 per cent. or more of its weight in the adult." *Gray's Anatomy*, p. 999, 26th edition 1935, edited by T. B. Johnston.


Cerebrum
Pons
Cerebellum

the organism as a whole is guided by the perception of the stimulus-pattern as a whole."

The thalamus, another part of the fore-brain, is the pathway of impulses from the surface of the body to the cerebral hemispheres. It performs, "an important function in regulating movements requiring the highly complex participation of the higher centres of the central nervous system."[1] Some suppose it to be the physiological centre of the instincts and if that view is correct it is the energiser of the whole system.

The mid-brain, which in the higher animals contracts during the course of the development of the embryo to small dimensions, is, as Frolov calls it, the basic regulator of the complex movements involved in locomotion, locomotion that does not require the participation of the higher cortical powers.

The hind-brain consists of the cerebellum, the pons and the medulla oblongata. The cerebellum is situated behind and beneath the cerebrum. It maintains the equilibrium of the body and keeps it erect, and generally controls muscular contractions. The pons connects the cerebrum and the mid-brain with the cerebellum. The medulla is the co-ordinating centre of throat muscles in speech and is the pathway for impulses that pass between the brain and spinal cord.

We have already noticed that it is through the nervous system that we react to the outside world and are integrated within ourselves. All our activities simple and complex are possible as we are equipped with an effective machinery for the purpose. The simplest kind of activity such as a knee-jerk or the contraction of a local muscle at a slight prick of the skin by a pin is known as a Reflex arc or a *reaction of the first level.* It involves a sensory neurone, a central synapse or connection, a motor neurone and a muscle. It is a localised and entirely unconscious act. Trembling, shivering, winking, and salivation are examples of a reaction of the first level. The impulse generated by a pinprick may travel up to the mid-

1. See Y. P. Frolov *Pavlov and His School,* p. 30.

brain situated at the base of the cerebrum and it may result in removing the hand or foot or uttering a cry or turning the head down without our being aware of it. This is a *reaction of the second level.* When the impulse goes upto the cerebrum and we make conscious reactions to the situation we call it a *reaction of the third level.* Reactions of the first and second level are more or less stereotyped, while reactions of the third level may have endless variations. If we remove the connection of the lower level with the cerebrum, reactions of the first and second level take place, but no conscious feeling is experienced. Each conscious reaction is the work of the brain as a whole.

The Spinal Cord is associated with reactions of the first level below the medulla. It acts as a reflex centre, receiving impulses from sensory organs and sending impulses back to the muscles. It helps in the integration also of the body, joining one side of the body to another and bringing the whole body into relation with the brain.

The Peripheral Nervous system consists of nerves that are connected with the Central Nervous System and run all over the body. The receptors and muscles of the head and to some extent of the neck are served by twelve pairs of cranial nerves, and the body proper is served by thirty-one.

The Autonomic Nervous System may also be regarded as peripheral. But it is not directly connected with the Central System, its centres being two ganglionated cords which run parallel to the spinal cord on either side. The glands and the smooth muscles such as those of the heart, the blood vessels, the intestines and other visceral parts are stimulated by them without necessarily receiving impulses from the Central System and thus function in comparative independence of it.

The glands are of two kinds : the duct glands which send their secretions out through ducts or channels to the surface of the body or into some cavity within, such as the sweat glands, the tear glands, salivary glands, etc., and the ductless glands which do not have such channels or ducts and therefore secrete their products which are known as hormones into

the blood direct. In fear and anxiety, the salivary glands fail to secrete, which accounts for the dry lips of an excited or fear-stricken person. It is likely that the frequent demand for water by some speakers while they address public meetings is caused more by worry and excitement than by strain on the throat. Vexation, worry, fear, and anger interfere with the secretion of gastric juices by the stomach glands. Cannon tells of a woman[1] who was taken to the hospital with acute indigestion and on examination in the morning was found to have her dinner of the previous evening still in her stomach undigested. On being questioned she related the story of a quarrel with her husband that evening. Similar results have been obtained by investigators experimenting on animals like cats and dogs. On the other hand pleasant experiences and anticipations lead to abundant secretions of the salivary and gastric glands, which help the digestive process. It is not without significance that pleasurable and æsthetic arrangements are made by sensible people for the dining room.

From the standpoint of the study of behaviour the ductless or endocrine glands (literally glands that secrete within) are of much greater importance than the duct glands. The best-studied ductless glands are the thyroid glands (in the throat), the parathyroids (very near to the thyroids), the pituitary gland (at the base of the brain), the adrenal glands (situated above the kidneys) and the ductless sex-glands. Over-activity and under-activity of these glands are marked by differences in the temperaments of individuals. For instance, in an individual whose thyroids are over-active emotions such as fear, anger, and joy are easily aroused ; and one whose thyroids work less than normally is usually dull, insensitive and unenterprising. On the other hand the hormone of the parathyroids has a quieting rather than exciting effect. Excess of this hormone brings on mental depression and an exceedingly quiet condition in general, while its deficiency is marked

1. See Wheeler *The Science of Psychology*, Ch. VIII.

by quick and intense responses to stimuli of all sorts, nervousness, and great sensitiveness to distractions and to the criticism or opposition of other people. The pituitary gland affects both physiological and psychological conditions. Its extreme development in infancy leads to the appearance of physical giants —giants whose mental development does not keep pace with their physical proportions, while its undue deficiency in a child tends to make him a dwarf, a miniature man. On the psychological side, the under-activity of the pituitary gland is characterised by easy discouragement and a tendency to give up and cry ; while its over-activity tends to make an individual aggressive, self-controlled and calculating.[1] Pituitary irregularity is regarded as one of the contributing factors of intellectual deficiency.

When such emotions as fear and anger are aroused the adrenal glands secrete profusely ; and their over-activity affects other organs such as the muscles and the liver. The infusion of *adrenalin,* as the special product of the adrenal glands is called, into blood helps the contraction of muscles necessary in all physical activities. When however an excessive quantity of it gets into blood, due to emotional excitement, it interferes with the contraction of the smooth muscles of the stomach and the churning action of the smaller intestines so necessary for the digestion of food. Excessive secretion of the same glands affects also the liver, which discharges a profuse quantity of glycogen (in the form of sugar) into the blood-stream. That is how long periods of fear and anxiety and mental pain often result in the production of sugar in urine (diabetes). Over-activity of the adrenal glands is also regarded as contributing to extreme forms of virility in males, to the production of the 'he-man' type ; and if the same over-activity occurs in a woman she develops male characteristics. Some of the sex glands are evidently duct glands, which secrete out. But

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1. See. R. S. Woodworth *Psychology A study of Mental Life,* Chap. VI.

along with them there are ductless glands whose hormones are secreted into the blood. When these latter function properly we observe such secondary sex characteristics as care for one's own personal appearance, love of adventure, and chivalry to members of the opposite sex.

The mutual influence of the body and the mind is noticeable in numberless other ways. We feel unable to do much intellectual work when we are tired physically, and intelligence is widely regarded as a characteristic of the mind. The mind does not seem to function efficiently when any part of the body feels pain ; on the other hand there are occasions when people, even though physically tired, put forth an unusual amount of energy and effort on account of a strong urge from within, as when a woman goes on attending to the needs of her ailing son or husband without rest and sleep for days and nights. Here her mind seems to carry her physical system in its onward swing and to give it a stimulus which a mere aggregate of physical forces could not give it. Again if certain drugs get into the human system, the individual concerned loses self-control. Is it not remarkable that self control which is associated with the mind should be affected by material objects like opium or strong drink ?

We have already referred to the evil effects of fear, anxiety and worry in the physical system. The opposite is also true, that a life of inward peace, joy and content generally leads to healthy physical life. Again, what is more mental than suggestion that works in our inner self ? But the hospital at Nancy run by the late Dr. Emile Coue was a scene of several miracle cures, where the lame and the paralytic walked about, the blind saw, and several cases of chronic maladies were completely cured—all through the patients being made to believe that they could be hale and strong again and that they were actually " becoming better and better every day and in every manner." Cases of faith-healing reported occasionally from unexpected quarters of the world also show that the body and the mind are not two disconnected entities

but one integrated whole, though for convenience sake we may continue to speak of them as distinct one from the other.

Certain important educational implications follow our recognition of the fact that what we have to deal with is a body-mind unit. For one thing we have to give as much consideration to the physical aspect of our life as we give to the mind; and not consider that physical culture is a subject that can be left to be attended to by the least qualified member of a school or college staff. We should also recognise that physical factors may lead to behaviour problems and mental breakdowns. The question of rest and fatigue is of special importance in this connection. Boredom or worry or fear may bring about a diminution in the output and quality of work, and physical causes may lead to intellectual and educational progress or retardation. It is therefore necessary that the work allotted to any one should as far as possible be suitable to his physical and mental equipment and calculated to arouse his interests. As far as is practicable there should be variety of work and convenient rest-pauses. Thus in all matters of life and education, whether we consider our emotional life, or the problem of conduct, or the laws of learning or forgetting, wherever we turn, we find that the bed-rock of all our superstructure is one, the body-mind unit.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Wheeler R. H.	Science of Psychology, Ch. VII.
Frolov Y. P.	Pavlov and His School, Ch. I (last section)
Woodworth	Psychology A Study of Mental Life, Chs. VI & IX.
Gates	Psychology for Students of Education, Ch. II.
Sandiford	Educational Psychology, Ch. V.
Reyburn	Introduction to Psychology, Ch. II.
Sully	Teacher's Handbook of Psychology, Ch. II.
Nunn	Education Its Data and First Principles, Chs. II, XIII.
Drever	Introduction to Educational Psychology, Ch. II.

V

SPECIAL TENDENCIES INSTINCTS

The chief distinction between a living thing and lifeless matter is that the former is urged from within to express itself. So long as there is life in an organism it asserts itself in some form or other. This urge to self-assertion is made possible, as we have already pointed out, through the organism conserving its past experiences. Our present activities are possible as we have at our disposal, though we may not be aware of them, the fruits of our past efforts and experiences. This is true to a certain extent of the lower animals also. Again, living things seem to be profited not only by their own individual past experiences but also by the influence of racial experiences. The activities of birds and bees and other higher and lower animals are hard to explain on any other presupposition. They seem to have some kind of a biological memory for the experiences of their ancestors of numberless generations and to reproduce, without themselves being aware of it, their racial capacities and tendencies. These latter in ordinary speech we refer to as instincts.

An instinct may be described as a tendency or a disposition on the part of an animal to pay attention to certain situations and to react to them in certain specific ways. All kinds of situations do not call forth this tendency for example, a cat is disposed to take notice of the movements of a mouse but is serenely indifferent to the doings of a goat or a cow. Again her reaction or mode of behaviour on meeting with a mouse is different from what it is when we give her milk. The

tendency is dynamic in its nature. It does not stop at the stage of perception but predisposes the perceiver to take a certain line of action with regard to the perceived object or situation. In the process of taking notice of (or perceiving) the situation and experiencing an impulse to activity towards that situation, there is generally experienced by the animal an affect —a feeling tone or emotional excitement—peculiar to situations of that particular kind. Thus in an instinctive activity we have a cognitive element (the perception of the situation), a conative element (the impulse to activity), and an affective element (the emotional excitement).

Instincts are innate and unlearned experiences. For instance no one teaches a bird how to build its nest ; but when the fledgling grows up and becomes a full-grown bird, it seeks out a mate and with its help chooses a suitable place and builds a house fit for her family of little ones who are shortly to arrive. It may be said that they do so by imitation of other members of the species, but even animals that did not have the good fortune of watching other animals at work do reproduce the racial pattern of an instinctive activity. A bitch brought up in a house without the company of any other female dog behaves as a transformed animal when it gets a litter of puppies, though no one taught the animal the responsibilities of being the head of a family. Numberless other instances can be given to show that instincts are innate and unlearned experiences.

Putting together what we have said in these two paragraphs we arrive at the famous definition of an instinct by McDougall, who calls it "*an innate disposition which determines the organism to perceive (to pay attention to) any object of a certain class, and to experience in its presence a certain emotional excitement and an impulse to action which finds expression in a specific mode of behaviour in relation to that object.*" There are critics who point out that an instinctive activity may take place without the incoming of emotion and that emotion takes place in an instinctive activity

only when the impulse to activity is inhibited or delayed.[1] In actual practice however it is hard to visualise situations where an impulse has absolutely undelayed activity, and if there is the slightest delay for a reaction to take place overtly there is occasion for an emotional tone to be experienced by the organism. So the denying of the emotional accompaniment in an instinctive activity is more academic than real.

Instincts are common to all the members of a species. Though the instincts that appear in one species of animals are not always met with in all other species as well, it is a matter of common observation that all the members of any particular species manifest the influence of the same instincts. For example, the gregarious instinct may not be noticeable in the tiger species but all the members of the wolf species do exhibit this common trait. Similarly birds build nests, squirrels hide nuts, and cats in all parts of the world chase mice. These are innate reaction-patterns common to all the members of any given species.

Reflexes are also unlearned reactions (see p. 45 f.) and they are also common to all the members of any species, so much so that there are those who think that instincts are nothing but reflexes or series of reflexes. But reflex actions unlike instincts are fixed and do not allow of the variations we find in an instinctive behaviour pattern. Again, reflexes are more local reactions than instincts. In an instinctive activity the whole organism is involved and there is very often as we have already seen an affective element in the instinctive process which is not experienced in the pure reflex.

We have already referred (see Ch. III) to the belief very commonly held that lower animals are guided in their behaviour by instincts while man regulates his life by reason. There is a double fallacy in this line of thought. On the one hand we deceive ourselves if we believe that all our activities

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1. See MacCurdy *Psychology of Emotion Morbid and Normal*, Ch. VIII, and Drever *Introduction to Psychology of Education*, Ch. IV.

are undertaken in the light of reason. The life of man, very much like that of his humbler brothers and sisters, the animals, is mostly lived in accordance with impulses. Perhaps he has, as James points out, a larger number of impulses and they inhibit each other and give him time to hesitate and choose a course, and this life of hesitation and choice is in ordinary language called an intellectual life; "not, however, because he (man) has no instincts—rather because he has so many that they block each other's path."[1] On the other hand it is also fallacious to hold that in animal behaviour we do not see any of the hesitations and choices and variations of activity so remarkably noticeable in man. The Peckhams (G. W. & E. G.)[2] studied some forty years ago the nest-building activity of the wasps with care, patience and sympathy, and were touched by the wealth of variations displayed by the several individual wasps studied variations not only in methods but in character and intellect. While one wasp was as it were fickle-minded, another one stuck to her work with indefatigable perseverence. While one was careless and clumsy in her work, another not only did it with thoroughness but had an apparent craving after artistic perfection. What has been so touchingly described about the wasps by the Peckhams is true of other animals as well, especially of the higher animals. The writer has seen several times a poor mother taking some bread from her own house and going to another where her son had been adopted. There she used to call for her son to come and eat the food she had brought for him. But who was this mother? It was only a mother dog! Lives of animals are undoubtedly full of reactions to instinctive urges, but it is a mistake to think that there is no variation in their reaction pattern, or to put it more clearly, that there is no element of intellect in their behaviour. "Even far down the scale of animal life, Intelligence co-operates beautifully with Instinct, remedying its

1. *Psychology Briefer Course*, Ch. XXV.
2. See Quotation in R. M. Ogden *Education and Psychology.*

defects and supplementing its inefficiencies, widening its scope and range of application ; and as we approach man in the animal scale, the evidence of this supplementing of Instinct by Intelligence and of their harmonious co-operation becomes ever clearer and stronger."[1]

Instincts are also to be distinguished from appetites which are an expression of internal, physiological necessities such as for food and water. The urge of the physiological system as such—or appetite—is felt periodically whether the means for its satisfaction is available or not. An appetite is not called forth by an external stimulus, while an instinct is. An instinctive reaction is an answer to an external stimulus or situation. Some instinctive reactions like the food-seeking and sex instincts are reinforced and strengthened by physiological urges or appetites, but an instinct is essentially an urge to react in a certain way to an external stimulus.

There is no universal agreement about the number of instincts. While some writers recognise scores of instincts there are others who think that what may properly be called instincts are only two or three in number. McDougall in his *Social Psychology* started with eleven instincts and in his *Outline* admitted thirteen and the possibility of a fourteenth. As his list has generally been accepted by English writers on education we shall note here his "Fourteen" of the *Outline*. They are : Pugnacity, Flight, Curiosity, Repulsion, Food-seeking instinct, Construction, Acquisitiveness, Mating Instinct, Parental Instinct, Gregariousness, Postive Self-feeling, Negative self-feeling, Appeal, and Laughter (this last being peculiar to man). In his *Energies of Men* published in 1932 he expresses his belief that three more tendencies, i.e., Migration, Rest and Comfort are clear enough to be listed as instincts. It is remarkable however that in this last-named book the author who more than any one else has been instrumental in drawing the attention of educationists and laymen in psychology to the import-

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1. McDougall *Outline of Psychology*, Ch. V.

ance of instincts in life and in education has now dropped the word instincts as applied to man and has re-adopted in its place the old term propensity. Though the innate tendencies of man are much more modifiable than those of other animals, there does not seem to be any valid reason why a word that draws attention to the biological nature of man as having much in common with lower organisms should at last be dropped.

There are some instincts that are particularly necessary for preserving the life of the individual in safety and for keeping it strong and fit. There are others whose primary function is to provide for the propagation of the species. A third group of instincts are of special importance in maintaining the life of the group. These groupings are not in any way mutually exclusive. The tendency to construct for instance is an individual or self instinct, but the chief motive originally at work in building-activities seems to have been to provide for the needs of the coming family. The positive and negative self-feeling which respectively are associated in common speech with self-assertion and submissiveness are certainly self-instincts in a sense, but they are meaningless unless they refer to social life. The parental instinct is related to the mating instinct and provides for the continuity of the race, but it is hard to think of social instincts as disconnected from the parental instinct. Admitting thus the close inter-connection between the various instincts, we shall now try to group the most widely recognised among them as follows

The Self-Instincts Food-seeking Instinct, Curiosity, Pugnacity, Flight, Repulsion, Constructiveness, Acquisitiveness, and Cleanliness.[1]

The Sex Instincts Mating and Parental Instincts.

The Social Instincts Gregariousness, Positive Self-feeling (Self-assertion and Self-display), Negative Self-feeling (Submission), Appeal, and Laughter (peculiar to man).

The Self-Instincts are useful for the preservation of each individual life and for its effective functioning. Without food

1. Not mentioned by McDougall unless we take it as included in his "Comfort" instinct.

an animal cannot live, and all animals have a tendency to seek for their food. The sight and smell of food materials serve as stimulus and the animal goes about hunting or searching for its particular kind of food. An unusual sight or sound rouses its curiosity and the feeling aroused may be called wonder. If anything comes as an obstacle in the way of an animal achieving its purpose there is a tendency for it to destroy the obstructing agent and when its purpose is baulked it feels anger. If its own safety is threatened, it is inclined to run away and the emotion produced is called fear. We may not have words to describe the particular kind of feeling aroused by acquisitiveness and by the tendency to build ; nevertheless we share these tendencies with some though not all the other kinds of animals. Birds are good examples of the nest-building or constructing animals, and ants and bees of the acquisitive type. Many animals like birds and cats do try to keep their body clean.

The sex-instincts are the mating and the parental instincts. Except in the lowest kind of life where a single-celled organism divides itself to form two new organisms, all forms of animals reproduce their kind by the union of the male and the female. Nature it seems decided that it would be good for each member of the species if it started with equipment handed over from two different sources instead of one, as by the former method there is infinitely more scope for a given stock to be enriched by new qualities than would ever be possible if each organism originated from a single parent. The mating tendency is naturally followed by the parental or protecting tendency. These two instincts have been at the basis of all altruism in life. Reproduction itself is an act of sacrifice, though nature has sugar-coated it with the possibility of great emotional enjoyment. None the less it is a sacrifice, and the sacrificial aspect of it becomes unmistakably clear when we observe the parental instinct at work. Tiny mothers not seldom fight for the safety of their offsprings with much bigger enemies even at the risk of their own lives. The male parent may have learned much

in the direction from his mate, but he also is ready to fight and die for his family of helpless little ones. The strengthening of the parental instinct is associated with the development of intellect and morality. When an animal modifies its natural behaviour to safeguard the interests of its family, it inhibits some of its readiest reactions and takes recourse to alternative lines of action, thus giving rise to what we call intellect. When an animal is ready to think first of the food and safety of some other creatures such as its own children or foster children (animals do take an interest sometimes in the offspring of others along with or in the place of their own offspring) we find therein the origin of morality.

The chief of the social instincts is gregariousness. The animal in whom gregariousness is strong feels extreme uneasiness when it is separated from its kind. McDougall refers to a description given by a former writer[1] of a variety of South African oxen "that displays no affection for his fellows, and hardly seems to notice their existence, so long as he is amongst them ; but if he becomes separated from the herd, he displays an extreme distress that will not let him rest until he succeeds in rejoining it, when he hastens to bury himself in the midst of it, seeking the closest possible contact with the bodies of his fellows." We find animals herding together for defensive purposes like the deer, for offensive purposes like the wolf, and for a life of co-operation with specialised contributions towards the welfare of the group by different individuals or sub-groups as in the corporate life of the bees. Man combines with his fellows on all the three levels of gregarious life. In the group life of animals there is ample scope for the exercise of such secondary gregarious tendencies as the instincts of self-assertion and self-submission. Some members of the group are specially gifted as it were with qualities of leadership. They are blessed with strength, courage and circumspection which enable them to expect and obtain the regard and submission of their fellows.

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1. Francis Galton.

There are others who have the complementary qualities well developed in them—those who seem to have been endowed with the gift of being good followers. The same individual may evince both tendencies towards different members of the group —submitting himself to one and lording it over another. We spoke of the parental instinct which renders an individual ready to protect and give help to one that is weak and helpless. This instinct is as well a gregarious instinct as a sex instinct. Considered as the former, we see its counterpart in another group instinct of animals—of readiness to appeal in distress to other members of the group. Most gregarious animals can cry in such a fashion as to call to its aid other members of the species. The instinct of laughter is peculiar to man ; and had he not been endowed with an instinctive tendency to laugh he would have found life unbearable, especially when we consider that man is capable, and is called upon, to suffer a number of ills by virtue of his greater capacity to think and to communicate with others, a privilege and burden unshared to any great extent by his comparatively mute neighbours of even the higher animal species.

Instincts supply motive power for our activities. They, along with other urges and tendencies of a more general character which we shall study later, function as the dynamic or driving force in life. Had it not been for the energy released by these urges and tendencies the machinery of our life could not have worked. It is most necessary therefore that in educating the young these natural tendencies should always be taken into account.

There are three possible ways of dealing with the instincts. We can try to give *unlimited scope to all our instincts.* This is, by the nature of the case, an impracticable suggestion. For, in the first place, instincts themselves come into conflict with one another. Second, if we try to indulge in all pugnacious or sexual urges, to mention but two instances, we shall have to say farewell to all the achievements of civilized life. On the other hand, we may make an effort to *suppress inconvenient*

urges. But the attempt to deny the overt manifestations of an internal urge is no guarantee that the urge itself is done away with ; it is more likely that, denied a natural outlet, it will work as a canker inwardly. The suppression of instincts often—though decidedly not always, as some are inclined to assert—results in mental conflict and undesirable emotional tension. Many of the behaviour problems met with in the home and in the school are due to emotional disturbances brought about by ruthless but unavailing efforts at the suppression of instinctive urges.

A saner and more healthy way of dealing with the instincts is to *make use of them in so far as is practicable in a cultured society* which lays importance on the decencies and values of life. If it is true that indulgence in instinctive appetites lowers the human being to the level of the beast, it is on the other hand also true that even the most developed human personality has at every moment of his life to harness and regulate the dynamic energy released by his primary instincts and interests. To arouse the attention of the small child it is necessary that his instincts must be aroused. Even in the case of the grown-ups it is not possible to make them interested in a thing unless they can be made to see that it somehow matters to them in life directly or indirectly. The mature individual derives real satisfaction not only in doing things that may be of primary interest to him but also in withholding his pleasures and thereby winning a victory over himself (the instinct of fight !). If he is obliged to set the interests of humanity as he understands them, over the interests of his nearest relatives or his own community of friends, he exercises therein his positive self-feeling and also adheres to the interests of a wider "herd." Instances may thus be multiplied to show how even the most unselfish altruistic ideals are not unrelated to original tendencies, the rudimentary manifestation of which we dimly observe even in lower animals. To appeal to instincts is thus a sound principle in all educational efforts, particularly so where children are concerned.

A few applications of the principle are here suggested, and readers who pause to think will be able to amplify the sugges-tions and indicate new applications of them to their work-a-day experiences. Let us take first the instinct of curiosity. The desire to find out is at the bottom of all scientific knowledge, of all philosophical speculations and of all cultural progress. Desire to know how a thing is made helps the child to know his material world, and his tendency to find out more about the people round him extends his social environment. Science, history, geography and art would be impossible if the child's curiosity were not first awakened ; and when it is properly stimulated, even the study of a dead language becomes a live pursuit. Any of the instincts can be exercised without reference to other aspects of life and thus be abused ; but that is no rea-son why its legitimate use in life and therefore in education should be ignored. Thus curiosity, which may be misused when a boy pries into other people's affairs, is most legitimately and profitably used when it is the means of whetting his appetite for learning. Similarly the instinct of fight may be wrongly exercised when a boy quarrels with and assaults his comrades who may happen to give him offence ; but the same instinct is rightly used when he fights for his team, saves a weak com-rade from a bully, or struggles against the prevailing illiteracy and insanitary conditions of his town. That the instinct of fight may be sublimated even on a national scale was one of the bold theories of William James, who suggested the possibility of a nation adopting certain nation-wide enterprise to drain off the energy which is now all too often devoted to war—a sug-gestion that has not yet been seriously considered by national leaders in general, though in this connection we have a notable and praiseworthy exception in our own motherland, that of Mahatma Gandhi and his non-violent aggressiveness. Fear is one of the instincts that educators, national leaders and social workers try their best to eradicate. Even fear is not always unwholesome, as when it is the fear of the disapproval of those people whose approbation really counts—not necessarily of

people in authority but of those whose standard of values we try to appropriate in our best moments.

The instincts of construction and of hoarding are of immense use in education. The Project Method is based on the recognition of the fact that children delight to do things more than to listen or even to merely read and write. Reading and writing themselves become more pleasing and meaningful activities when they are associated with practical work and manipulative efforts occasioned by a felt need. Children delight to collect and keep toys, different kinds of seeds and grains, stamps, coins, portraits and pictures ; and this delight can be the means of valuable instruction and education. Even the collection of abstract bits of knowledge is enjoyable to them when young folk do it for themselves and when they can find a meaning running through their several acquisitions of knowledge and can thus make systematic wholes or patterns of them. That accounts for the success of the Dalton Plan where it has been properly attempted. These tendencies and the tendency to migrate and the ones we mention in the next paragraph are at the bottom of the popularity of movements like those of the Boy Scouts and the Girl Guides.

In maintaining discipline it is foolish and cruel to try to suppress children into submission and passivity. Discipline is ultimately useful only when it is imposed from within one's self, and in helping children to be self-disciplined we can count on their positive and negative self-feeling. Some boys are good leaders, and teachers do well who instead of discouraging these natural leaders try to obtain their co-operation in establishing helpful conventions and traditions and in generally maintaining the school tone at a high level. The rest of the school by the operation of their negative self-feeling will more or less joyfully follow the co-ordinated lead of the teacher and the student leaders. The tendency to appeal for help is natural ; but leaders of the young who should give help when needed should also be careful not to prejudice the aptitude of the appealers to be as self-reliant as possible. On the other hand

it is bad policy and worse morals to stimulate personal competition among pupils to such an extent as would make the better qualified among them think that they have no responsibility in helping their weaker school or class-mates.

In all these aspects of school-life—of learning, of acquiring skill and of social life—we find that loyalty to the highest ideals of life is not necessarily opposed to the operation of natural tendencies. It is true that often these tendencies cannot be exercised in crude form and according to first impulses : they have to be inhibited to a certain extent by those higher considerations and that wider outlook which are not manifest when action is first suggested. Many of the natural tendencies are to be regulated and to be re-directed before they are overtly exercised. This process of *regulation of natural propensities* is known as *sublimation.* It implies the expenditure of instinctive energy in socially accepted and morally approved channels or directions.

The applications of instinctive energy suggested in the previous paragraphs refer to some forms of sublimation. The term sublimation however is more commonly used particularly to designate one group of tendencies—those relating to sex. Sex-urge makes its existence unmistakably felt in adolescence. But it does not seem to be entirely non-existent even in normal infancy, and there is no doubt that there are abnormal individuals who feel the urge pronouncedly even in that early period. In most cases the urge is quiescent in most years of childhood and breaks forth into new activity with adolescence. It is however ruinous to individuals and to society if adolescent boys and girls attempt to satisfy their sex desires as they arise. They should learn to control their urge and to a certain extent even to suppress it it has not been any way definitely proved that all suppression is detrimental to the growth of personality. But they need not put all their effort into mere suppression, they can sublimate their sex energy. They can divert it into other directions, and in these new directions the energy which would otherwise have been expended on sexual

enjoyments can be made to co-operate with other impulses and thus make a greater success of the resultant enterprises. Freud himself believes that there is clear evidence "that instinctual impulses from one source can join on to instinctual impulses from another and share their further vicissitudes, and that in general the satisfaction of one instinct can be substituted for the satisfaction of another."[1] According to this suggestion, some of the energy of sex can be made use of in pursuit of objects of other instincts such as of curiosity, construction, hoarding or fight.

Sublimation is possible in another way too, inasmuch as an instinct stops, as it were, on its way to satisfaction. There can thus be a feeling of affection, as Freud points out, whose source undoubtedly lies in sexual needs but invariably renounces their qualification. Thus sympathy, courtesy and gentleness in dealing with others, especially with members of the opposite sex, may be a form of sublimation. The same instinctive tendency may be sublimated when one devotes himself enthusiastically to create forms of beauty through literature, music, drama or other forms of fine art such as painting or sculpture.

Young folk are helped to sublimate their sex energy if they have an intelligent idea of the nature of the urges that operate within them. Hence the importance of sex education. Sex education is important to the adolescent, but to keep the child in ignorance right up to that age regarding sex matters may be definitely unwise. Curiosity regarding sex crops up much earlier in life, and well-informed opinion favours the imparting of information as sought by the child in as natural, matter-of-fact, unemotional a manner as possible. Lessons on fertilization and reproduction in plants and animals form a suitable background to the study of sex problems in human beings.

Mere instruction in sex, however adequate and scientifically correct it may be, is not enough to help children to grow

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1. Freud *New Introductory Lectures,* XXXII, p. 126, Sportt's Translation.

into well-balanced, happy manhood and womanhood, into a life where the raw materials of animal existence have been converted into the finished products of well-adjusted social life. The examples of parents and teachers and other respected elders who lead a happy, well-balanced family life, of men and women who find the greatest joy and satisfaction in life in helping and pleasing each other and in looking after their children with sacrificial love, impress the younger people with the importance of self-control in sex matters and of controlling and sublimating their own instinctive urges until the time when they can build up a happy family of their own. Filial devotion of brothers and sisters and healthy friendship and social relations between boys and girls outside the family circle are useful in helping young people to respect members of the opposite sex and to form ideals of clean sex life. Above all and through all these means, it is of supreme importance that people who are just entering into adult life should believe that it is possible for men and women to lead a self-controlled and sublimated life so long as married happiness is not yet possible. There is no need however to disguise the fact that for most people the full realization of life urges is attained only through marriage and the care of a family.

In order that the teacher may be most helpful to his students in directing their instinctive desires and urges it is most necessary that he should know them individually. As a rule all boys and girls have the same instincts qualitatively as their fellow students. But the strength of the instincts differs from individual to individual. This is why we have individual differences in disposition. One boy may by nature be a great fighter, while in another the instinct of flight may be strong and he may have a timid disposition. In one the constructive instinct may be predominant while in another it may be the acquisitive instinct that stands out as the most marked characteristic. In one the strongest instinct may be that of sex and in another it may be the gregarious instinct. One may have in him the making of a good leader by disposition while another

may be content with the role of a follower. The wise teacher deals with his students in accordance with his knowledge of their natural bent and disposition.

The laws of *exercise and effect* are influential in regulating the strength of instincts in individuals. We have already observed that it is possible to control the manifestation of an inner urge, and as a corollary it may be held that the more an urge is disallowed expression the more difficult it is for that urge to find natural overt expression on later occasions. For the same reason if a certain instinctive urge is frequently allowed to function unchecked, the subject finds it hard to regulate or control it even if he cares to do so later in his life. Instincts such as of sex, flight and rage are accompanied by strong emotions and to allow them scope is like plying a boat over a cataract. When the boat is far away it is possible to regulate its course, but the nearer it approaches the fall, the harder it is to work against the rushing current. Especially apt is this example in regard to the sex impulse. One who wants to control his sex urges cannot expect to indulge with immunity in such "harmless" acts as petting and caressing members of the opposite sex. The force of habit applies similarly, though not with the same impetuous insistence, to other instincts as well. The more, for instance, a person fears, the greater coward he becomes; and the more a man delights in gathering and dislikes spending, the more miserly he turns out to be. The good teacher helps his pupils to persist in their search after the true, the beautiful and the good, and to resist the temptation of yielding to degrading impulses.

He also studies their physical and psychological development and finds that their characteristics vary from stage to stage even though he does not believe to the extent that James did in the law of transitoriness that "many instincts ripen at a certain age and then fade away." He understands, for instance, that the older child from eight to ten or eleven years is remarkably quarrelsome and delights in a fight, and that the adolescent boy and girl grapples with the excitement attendant

on the inrush of the sex urge. His knowledge of psychology and the recollection of his own life during these stages of development are helpful to him to deal with his students with patience, insight and sympathy.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Ogden	Psychology and Education, Chs. II—VI.
Sturt & Oakden	Modern Psychology on Education, Chs. II—IV.
Meredith	Bearings of Modern Psychology on Education, Chs. I—III.
Woodburne	Human Nature and Education, Ch. II.
Ryburn	Theory and Practice of Christian Education, Chs. II, V, VI, X, XII, XIV, XV.
Ragsdale	Modern Psychology and Education, Ch. IV.
Watts	Education for Self-Realisation and Social Service, Part III, Chs. V & VI.
Drever	Introduction to Psychology of Education, Ch. IV.
McDougall	Outline of Psychology, Ch. V. Social Psychology, Chs. II, III, X, XI, XII.
Nunn	Education Its Data and First Principles, Ch. VI.
James	Psychology Briefer Course, Ch. XXV.

VI

GENERAL TENDENCIES

SYMPATHY, SUGGESTION AND IMITATION

We saw in the preceding chapter that instincts are special tendencies evoked by special stimuli and resulting in reactions of a special kind, and that these tendencies along with some general tendencies form the dynamic factors of life—factors that seem to provide it with dynamic energy. If the life of an animal or of a human being may be compared to a machine —which evidently is not regarding it merely as a machine—it is these natural tendencies that seem to drive its machinery forward, supplying it with the power and energy necessary for its efficient functioning. Let us now turn to these general tendencies and see how they operate in life, particularly in that field of life in which we are specially interested, viz., the school. In this chapter, we shall deal with three of these tendencies—sympathy, suggestion and imitation.

These tendencies do not function independently of, but in close co-operation with, the special tendencies. The three general tendencies we have named are closely associated with the gregarious instinct and the negative self-feeling. They all involve copying other people's modes of thought, feeling and behaviour patterns ; and copying is implicitly an admission of inferiority on the part of the one who copies and of superior qualities in the person or persons copied. This means clearly the exercise of the negative self-feeling. These imitative or

mimetic tendencies are equally well related to the gregarious instinct. It is through the exercise of these tendencies that an individual conforms to the standards of feeling and conduct that prevail in society.

We may copy other people's actions, thoughts or feelings. When we copy their feelings, we have sympathy. The copying of their thoughts and views may roughly be called suggestion, and the word imitation is technically reserved for the copying of their deeds or actions though in a general sense *imitation* is applicable to sympathy and suggestion as well. Nunn uses the word *mimesis* to mean all the three, and suggests that the term may be used to denote the copying of all the three kinds in the conscious and unconscious levels. Imitation, as he puts it, bears to mimesis the same relation that conation bears to horme, and memory to mneme.

It has been believed that sympathy arises when one supposes himself in the place of another and experiences the feelings of the latter within oneself. This theory of sympathy as vicarious experience of another person's feelings presupposes a fairly high level of consciousness as a necessary condition for the existence of sympathy, and for that reason would make it impossible for small children and animals to be "sympathetic." This, however, is contrary to observation in daily life, for we come across numerous instances of sympathy even among animals, not to speak of children. McDougall's theory of the origin of sympathy seems to be much more reasonable and acceptable. According to him, every animal that reacts instinctively to a certain situation not only experiences a peculiar feeling, but is also capable of experiencing the same feeling when another member of the species experiences that feeling in a similar situation, even though the former animal does not meet with the actual situation but only sees the latter meeting with the situation and experiencing feeling appropriate to it. For example, a deer may see a tiger, get frightened, and run away. Another deer may not have seen the tiger but per-

ceives the fear symptoms in the first tiger and itself gets frightened. When a monkey looks at a strange thing with curiosity, another monkey that only sees the attitude of curiosity in him behaves as if its own curiosity is roused by a strange object. As McDougall says, " the behaviour of one animal, upon the excitement of an instinct, immediately evokes similar behaviour in those of his fellows who perceive his expressions of excitement."

It is sympathy of this kind that cements animal societies together, renders the actions of all members of a group harmonious, and allows them to reap some of the prime advantages of social life in spite of lack of intelligence. Human sympathy, as McDougall clearly points out, has its root in the capacity and tendency of one person to directly perceive the emotional condition of another. The human child, before it has any intellectual comprehension of other people's attitude, has by this tendency of sympathy the aptitude to enter into the feelings of others and to make the right kind of response to its social environment. Even grown-up people experience the effect of sympathy when they are made cheerful by the company of gay and joyous colleagues and are liable to be gloomy when associated with those who always carry with them an air of melancholy and pessimism. Teachers and parents have a special responsibility in the matter. If they are emotionally well-balanced and calm and have an optimistic out-look in life, they tend to make their children also happy and at peace with themselves. On the other hand it is practically certain that the neurotic teacher will tend to turn out neurotic children.[1]

The word suggestion is used in three different senses :— (1) In literature we use the word to denote the impression that a writer has touched only a few aspects of a situation that may be approached in a number of different ways and that he

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1. See Drever *Introduction to Educational Psychology,* Ch. VI.

has in no way exhausted the possibility of a complete discussion or presentation. In the same way, we talk of a suggestive teacher when he gives his students the impression that much remains to be tackled by themselves in the domain of knowledge or thought of which he has been able to give them but a glimpse. (2) Suggestion is sometimes used for the influence that works upon a person without any body planning definitely that his life should thus be influenced. A person may thus be spontaneously influenced by natural or social environment. (3) Suggestion is also used for direct and deliberate influence that one brings to bear upon another without letting him feel or know that he is being influenced from outside. In Psychology we use the word mostly in the last two senses. We may speak of either of these two meanings of the term suggestion if we define it as *the unwitting and unreasoning acceptance of an idea which tends to translate itself into activity.*

The clearest example of direct suggestion we get in hypnotism. A hypnotist may tell his subject when he is under the hypnotic spell that he will go the next day at a specified hour to a certain room and close one of its windows ; and the latter actually does it when the time comes. If asked why he does it he will give some kind of reason which practically had nothing much to do with the original motivation of activity. Another form of direct suggestion is what Baudouin calls " induced suggestion "—which is direct suggestion made possible by a fuller and more willing co-operation on the part of the subject than is the case in hypnosis. One of the most famous schools of experts of induced suggestion is the one associated with the name of Dr. Coue whom we have already mentioned (see Ch. IV, end). He calls his practice auto-suggestion to emphasise the importance of the co-operation of the subject (the patient). But auto-suggestion can also be induced without much initiative from outside, the subject suggesting ideas to himself. In order to get the best results in this purer form of auto-suggestion, the subject relaxes his will and dwells in imagination as wholeheartedly as possible on the idea he wants to suggest to himself.

Life is however more full of suggestions we receive from the outside world than we ever recognise—so much so that there are some who contend that all suggestions are really hetero-suggestions, and that even what is called an auto-suggestion must ultimately have been set working by some idea received uncritically from outside. All of us in every department of our life are influenced by suggestion. This is why advertisers, newspaper magnates, party-leaders and religious men have so great a hold on us. As Baudouin points out in his famous book on the subject our cognitive life with its opinions, images and judgments ; our affective life with its inhibitions and accentuations of physical and mental sensations of joy and pain ; and the series of our motor activities involving habits of speech and actions—all are affected by streams of spontaneous suggestions that influence us every moment of our life.

Prestige has much importance in spontaneous suggestion. The more a person is respected by an individual, the more he tends to accept suggestions emanating from the former. Thus we often find the opinion and prejudices of a popular teacher shared by a large number of his students. We are also powerfully affected by the attitudes and interests and enthusiasms of the group to which we psychologically belong. The teacher who cares to take a hand in the moulding of the inner life of his students has not only to sanctify himself for their sake but also to give due attention to the moral, social and æsthetic reactions of the group as a group. Personal and mass prestige are both fundamental factors in the regulation of life, social and individual.

A man is more suggestible in a subject he has not studied well than in one that he has mastered, and the same individual's suggestibility may vary from time to time even in the same subject according to varying circumstances. For instance, a man is more suggestible in weak health than when he is able and strong to look after himself all right. For the same reason children and ignorant adults are more suggestible than well-informed men and women. Those on the other hand who

are in the habit of critically examining every situation are less suggestible than those who are generally ready to agree with their fellows. But comparative non-suggestibility does not necessarily mean a higher intellectual calibre. For instance, those who put a gentlemanly trust in others may be more suggestible than those who have a suspicious outlook on life—a fact which does not at all prove that the latter are gifted with a higher intellect. Fox mentions the story of a French boy of seven who in spite of his better knowledge accepted incorrect names of colours as suggested by an experimenter (a foreign lady) and then went and told his teacher "That lady is not French, in her country the colours are not the same as ours."

Expectation plays a great part in suggestion. When we expect a thing to take place, even slight indications are enough to suggest its happening. This is why the thief takes every bush to be a policeman. A traveller who happens to travel without a ticket thinks that every Railway-servant watches him and that his fellow-travellers suspect him of trying to deceive the Railway Company. The rich man looks upon every unfamiliar visitor to his house as a prospective burglar. The deceiver believes that others try to deceive him and is always on his guard. Hence suspicious people who are not necessarily more intelligent than the rest are in some matters less suggestible than their better disposed neighbours. They too, however, have their numerous vulnerable points ; for even where they boast to be free of susceptibility to suggestions they fall an easy prey to contra-suggestion, being strongly inclined to do the opposite of what is suggested by their neighbours which, had they been left to themselves, they would not have done at all.

Teachers can suggest things to their students, and the greater the love and esteem in which they are held the more powerful are the suggestions that emanate from them. These suggestions are alike effective in helping or harming students in their work and in their conduct. A good teacher enables his students to have faith in themselves and to do their work

effectively. One investigator is reported to have found that those of his subjects (students) whom he encouraged in their work made a gain of 79% in their school work while on the other hand those whom he discouraged showed deterioration.[1] Also the teacher has considerable influence in making or marring the progress of students in their social adjustments and behaviour problems. Suggestions in this respect, however, are more powerful when they are indirect and casual than when they are direct. A remark on the need of loyalty to friends and causes, for instance, is more effective when made by a teacher in the course of a practical lesson in science than when made in a regular 'Moral Instruction' period. Also positive suggestions, suggestions on what is done by good or respectable people, are more effective than negative suggestions and prohibitions of the "Don'ts" type. These latter very often serve as an invitation to the listener to go contrary to the wishes expressed. This is particularly the case when the negative suggestions and prohibitions are made by an unpopular teacher. If an unpopular teacher keeps telling his students how dissatisfied he is with an untidy class-room, there is more often than not a chance for the contents of the waste-paper basket being occasionally found spread all over his class-room. Direct suggestions even of the positive kind may give the subject the feeling that he is too much being imposed upon by the suggester and the result may be contra-suggestion. This is to a certain extent true even where there is no positive feeling against the suggester ; but where the latter is disliked or disrespected, the danger of contra-suggestion is grave. From this, as from many other stand-points, it is most necessary that teachers should endeavour to receive and deserve the good will and sympathy and loving co-operation of their students.

The copying of other people's feelings and thoughts and view-points (sympathy and suggestion) leads to the copying

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1. See W. F. Book *Learning How To Study and Work Efficiently* Pp. 12-13, 309-310, 323-333.

of their activities—imitation proper. Animals and small children imitate what they see others doing. Their imitation may be said to be on the perceptual level. They are not conscious of what they do when they imitate. When a chicken finds its mother pecking at grains she also tries to do the same thing as her mother, and is thus initiated into the habit of picking up food for herself. The human baby of two or three months smiles back when his mother smiles, though he does not know that thereby he pleases her. This kind of imitation is in the original biological nature of the animal, and is therefore called *biological or organic imitation* by Baldwin, one of the first psychologists who made a thorough and systematic study of the rôle of imitation in life.

As against organic imitation we have the deliberate kind of imitation—"psychological, conscious, or cortical"—characteristic of man who is capable of setting himself the task of *deliberately copying* the action of others not only when the model is present but even in its absence. Man is capable of reproducing an activity by reading of it in a paper or a book—something which other animals cannot.

It does not mean that these latter have only biological imitation or imitation of the perceptual level. Some animals at least may be said to have what comes between these two kinds or levels of imitation we have described and which with Baldwin we may call *plastic imitation,* or imitation of the ideational level as Drever calls it. Kohler's apes were evidently imitating on this level when they revealed among them the vogue of certain fashions such as of digging the ground for fun or carrying certain things on their body for apparent decorative purposes. The spread of fashions among men and women, the prevalence of social customs, provincial distinctions in accents and pronunciation in the same language areas, peculiarities of costumes, mannerisms characteristic of certain families, the prevailing tone in a school—all these are mostly due to this level of conscious, but not deliberate, kind of imitation. As a matter of fact it is imitation of this and the

other kinds of imitation we have mentioned that make up for the absence in man of the much better defined instinctive equipment characteristic of lower animals.

Imitation is of great importance in the school-room. True, we all admit to-day much more than we used to do formerly the importance of encouraging students to express themselves with freedom and originality ; but imitation does not cramp originality. Even great people have to imitate others before they can make their own contributions to the knowledge and well-being of humanity. The greatest advances in science and art such as of the poet, the architect, the astronomer, and the administrator have all been made possible on account of the readiness of capable men to imitate and make use of the performances of those who went ahead of them. Imitation is most necessary in giving every one a start in his own individual performances in life. This is how the small child begins to walk, speak, and behave in a civilized manner. The danger of imitation is only when it ends there and does not lead on to self initiative and original means of self-expression.

In the school there is scope for imitation of those who are superior to one and for emulation of one's equals. As Comenius says, " It is when the steed has rivals to surpass or leaders to follow that he runs his best."[1] In a large institution there is much more scope for such imitation and emulation than in a small one.

Imitation along with the other mimetic tendencies is of special importance in forming the character of individuals and in giving a high moral tone to the school and in maintaining its right traditions. These tendencies provide the social environment of the school, and good social environment is as necessary for the culture of morals as good physical environment is important for the growth of trees and plants. But as we saw in Chap. III the growth of a plant is from within, and what the environment does is only to help or hinder from out-

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1. *The Great Didactic*, Ch. VIII (Keatinge's translation.)

side the organism's internal urge to grow. The same may be said about the moral and spiritual growth of a human being. The inspiration of the general body of the students and the suggestions that emanate from the teachers and student-leaders are of vital importance in the moral culture of individual students. But these are more or less external factors which, without conscious efforts put forth by the individuals themselves, cannot profit them much. For character in its essence is a personal acquisition and cannot be developed without deliberate voluntary attention being given to it by the person concerned. As Keatinge pertinently remarks, "Conscious effort is essential for all character-forming work. True education can never consist in producing mechanical and unconscious action. Painless dentistry may be desirable; unconscious morals are impossible." We deal with this subject at greater length in Chaps. XXI and XXII.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

McDougall	Social Psychology, Ch. IV.
Drever	Introduction to Psychology of Education, Ch. VI.
Fox	Education Psychology, Ch. IV (Pp. 128-134) & Ch. VI.
Keatinge	Suggestion in Education, Chs. IV, VI, VII.
Baudouin	Suggestion and Auto-Suggestion, Part I, Chs. I & II. Part II, Chs. II & VIII, Part III, Chs. I & VII.
Baldwin	Mental Development, Ch. XII.
Ryburn	Theory and Practice of Christian Education, Ch. IX.
Myers	The Learner and His Attitude, Chs. XIII, XIV, & XVI
Nunn	Education, Its Data and First Principles, Ch. X.
Ross	Groundwork of Educational Psychology, Ch. XV.

VII

GENERAL TENDENCIES PLAY, RHYTHM AND RITUAL

All men and a number of animals show a general tendency to delight themselves in activities that are not of immediate use to them, activities that are engaged in for the joy they give and are generally designated by the term play. Several attempts have been made to explain the possible origin of this general tendency. We shall here consider a few theories of the origin of play before we try to deal with its educational importance.

One view is that animals play because they have more energy than is needed to carry on their "useful" activities, i.e., activities that are absolutely necessary to maintain their lives in fit condition. This theory, usually known as the *Surplus Energy Theory*, has been associated with the name of a German poet of early nineteenth century called Schiller, and the same view was made popular later in England by Herbert Spencer. According to this view, play is something like letting off steam from an engine which happens to have stored in it more energy than is needed for its working. But we do find men and animals playing, especially the former, even when they are below par in physical energy. Men and women in convalescent stages after a serious or protracted illness, and old persons who evidently have no surplus energy in them, take part in play. Though surplus energy leads to play on many occasions, all play cannot be explained on the hypothesis

of an organism possessing more physical energy than it requires for the normal functions of life.

The tendency to play is peculiarly strong in childhood. It seems nature expects the young animals to have a free and comparatively careless life before they set out in life's hard and perilous journey. It is remarkable that playing animals on the whole imitate and *anticipate the activities* of the grown-up members of their species. For example, a kitten plays with a ball or even its own tail in such a manner as to remind the observer of the grown-up cat catching and teasing its prey. The human child in its own way exercises such instincts like construction, collection, protection, flight and fight as characterise the adult. Karl Groos, a German writer, has written two books, the Play of Man and the Play of Animals, drawing the attention of educationists and psychologists to this, the anticipatory nature of play.

Stanley Hall, an American writer, considers the view that play is practice for future adult activities as " partial, superficial, and perverse " and himself seeks to account for the important place that play occupies in the life of the human young by attributing it to man's organic tendency to recapitulate in himself the stages of racial and cultural evolution through which he has reached his present status. According to him the keys to all play activities lie in the past. He contends that true play never practises what is phyletically new, that the instinctive, untaught and unimitative plays of children are *reminiscent* of the motor habits and spirit of the past of the race ; that even if to-day the form of all human occupations were to change, play would still remain unaffected except in some of its superficial imitative forms. He believes that the children of civilized people in their young days pass through the experiences of the savage and primitive races before they themselves get civilized. The vigorous physical activity that characterised these early people reappears in the children of all civilized people.

Whatever the original propounders of these theories may have meant, for us there does not seem to be any difficulty

why all these view-points should not be accepted as complementary to one another and not as mutually exclusive. As a matter of fact any one of them considered as a self-sufficient explanation of the origin of the universal tendency to play is very inadequate. On the other hand when we examine the matter dispassionately we seem to find each protagonist laying his finger on one aspect of a many-sided problem.

Play is a good means of sublimation. We have already found that all instinctive urges cannot be indulged in, and that the only reasonable way of dealing with some of them is to drain their energy into socially acceptable channels. Now play forms a very good means of diverting the natural urges and impulses in agreeable, innocent directions. It affords scope for what the New Psychology calls *catharsis*. The impulse to self-aggression and fight and sex-satisfaction is thus diverted to play-ground activities. It is not necessarily the *surplus* energy that is thus made use of but the ordinary energy at the disposal of a given individual which he or she does not find suitable means of expending.

In all play we find an element of joy, and on this account we find play associated with the fine arts. The word play is used for music and dramatic performances in many languages. Play like the fine arts is not pursued for utilitarian purposes. Though there are people who make a profession of play and though even for ordinary people play has its practical uses, it is not the usefulness of play as much as the joy element that looms large in the minds of those who play. To those who do hard intellectual work participation in games involving vigorous physical exertion for a short while comes as a kind of relaxation. It recreates their fagged minds and turns them out fitter for the work from which they sought temporary relief.

Playing animals are not so deadly in earnest as to exploit to the fullest extent the weakness of their opponents in play. When two dogs playfully fight, the stronger one not only does not bite hard on the throat of his opponent but sometimes allows himself to be treated as the weaker party even in spite

of his superior strength and skill. We cannot say that the animals are not serious, for we find them go on playing for hours together as if they had a stake in keeping up the show for as long a time as possible ; all the same their seriousness in games is different from the seriousness they manifest in their real fights. Somehow they are able to restrain their activities in play. This element of restraint is a common feature in all play. Civilized man has safeguarded this restraint by elaborate rules for each game. The existence of restraint, and of the rules and regulations intended to safeguard the same even under severe provocation, does not mean that play is not serious. Any one who has watched good players—and all of us have done it some time or other—will have noticed with what seriousness they play. But this seriousness of effort in play-activity has its origin in the spontaneous joy that it gives to the player rather than in any material or other ulterior purposes.

For little children, play is work and work is play—" they are not twain but one." The baby does nothing but play the whole day, but he is as well working the whole day. Had it not been for his continuous play, he would not have secured motor control, would not have gathered experiences about the world, and would not have been initiated into social behaviour. It is therefore most necessary that in all schools meant for small children the play spirit should be predominant. This does not belittle the importance of hard work, for nothing worth having is attainable without strenuous effort. But strenuous work is guaranteed when the interest of the worker is enlisted. Hence the wide and generous appreciation of such new ventures in educational method as the Montessori System and the Project Method, such world wide movements as Boy Scouts and the Girl Guides, and even of such short-lived experiments as the George Junior Republic of America and the Little Commonwealth of England.

Unlike adults who when they play desire the company of others the small child is very often content to play alone. As

a matter of fact the desire for other children appeals as an irresistible fáctor only from about the eighth year. Smaller children do welcome children of their own ages to play with, if they are available ; but their company is not so much missed by them as by elder children. Very often the former are found playing with imaginary companions. In the group of students for whom these chapters have been primarily written it was found that out of ninety-four students who reported, eighteen had clear recollections of having regularly played with imaginary companions for pretty long periods of time in their infancy. The imaginative play of bigger children in which they suppose themselves to be great historical characters or some present-day leader of local or world-wide repute is useful in that it gives them scope to identify themselves with the heroes they admire and thus helps to raise them above their own little standards of achievements. Similarly the make-believe play of even still smaller children is of value as it enables them to control in fancy the environment which they could not otherwise control and manipulate.

It may be interesting in this connection to notice that Madame Montessori, a great lover of children though she is, definitely discourages the telling of fairy stories to children on the ground that it tends to make them dreamers liable to find easy satisfaction in fanciful rather than real achievements. No doubt there is danger if children are encouraged to rest content with an imaginary glory so easily possible through identification with the lucky characters frequently met with in fairy stories and legends. That is no reason however to deprive them of all joy and profit that comes through their imaginary control of men and things—objects which in real life seem to confound their little minds with their vastness and power. Inspired by the achievements of his imagination and encouraged by the example of his imaginary heroes and heroines the normal child tries gradually, as his abilities develop and his strength increases, to convert his triumph over imagined

difficulties to triumph over real ones. Moreover are we adults not all dreamers to some extent ? Had it not been for the time we manage to find to be idle and dream, to let our fancies play on vague ill-formed schemes and ideas, our lives would have remained poor, sordid and paltry. As Davies sings :

> What is this life if, full of care,
> We have no time to stand and stare ?

If children are not allowed to let their fancies soar with the help of such things, among others, as legends and fairy stories we virtually clip the wings of their imagination and therefore to that extent of their aspiration.[1]

Children play the same kind of games and tell the same kind of stories over and over again. They are not tired of repetitions. As a matter of fact the tendency to play is closely related to the tendency to repeat, and both tendencies are particularly strong in childhood. It may be conceded that old people also have a tendency to repeat. But the reason of their devotion to the old is that they no longer have strength adequate enough to confront an intractable world. Their repetition is an admission of their weakness. But youngsters cling on to the repetition of the familiar as the means of making those changes which they want to make as are not y under their control ; and they have to find satisfaction in showing their strength and liveliness in doing well the few things they can until they come to possess more adequate power to alter, manipulate, and create things as they wish. The routine tendency in childhood is, as Nunn puts it, " an expression of superabundant activity."

The tendency to repeat is at the root of all learning processes and of all enjoyment of life through recreation and art. Higher problems in mathematics are impossible unless the learner learns by rote arithmetical tables and algebraical for-

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1. For further discussion on this subject see Chap. XIII.

mulæ and makes mechanical by practice the elementary mathematical processes. The stylist in literature is what he is on account of much repetition and practice he made in the art of writing at the beginning of his career. The skill and mastery revealed in performances that appear to us as so easy for the master performers in fields of action, literature or art were not acquired by them by chance but by dint of hard work, practice and repetition.

The tendency to repetition is an aid that the teacher can rely on in his effort to maintain discipline in the school. If the school has a certain tradition all the new comers are content soon or late to fall in with the prevailing tone and spirit of the school, and usually do not want violent changes introduced into it by themselves or others. They are content to let sleeping dogs lie and do not want trouble by departing from the normal. For this reason it is necessary that if any change is to be effected in a school it should be done slowly and should not have the savour of a revolution. The patient and tactful creation of an atmosphere of self-control and orderliness is more important in school discipline than the formulation of pious and imposing regulations, for when once there is the right atmosphere the repetition tendency imbedded in the young will see to it that that atmosphere is maintained.

Repetition in the form of rhythm is met with everywhere in nature. We see it in the waves of the sea, the swaying of the heads of flowers, the movements of leaves and branches of trees in the breeze, in the periodicity of seasons, in the rising and setting of the sun and all other heavenly bodies, in the growth, decay and rebirth of grasses and crops ; in every movement of the body and mind of man, in his sleep and wakefulness, in his energy for work and his fatigue, in the movements of his legs and hands, and in the working of his respiratory system and of his heart. Rhythm gives unity to a series of events which otherwise would have remained but

disconnected and meaningless elements. Rhythm makes hard work bearable by its soothing effect—this is why the prosaic activities of manual workers and day-labourers throughout the world are made easier by rhythmic verses and songs. We found already that to the small child all play is work, and all work play. This play-work is rendered still more enjoyable by prevalence of rhythmic verses and rhymes, with or without sense, among children in all countries. Above all rhythm is a great unifier. It acts as a tie that binds together the various individuals or a group by breaking down the cold barriers of individualism giving warmth to common purposes, and producing mutual joy and pleasure of a high order. No wonder that rhythm has been glorified in the old adage mentioned by Hall that the parent of prose is poetry, the parent of poetry is music, the parent of music is rhythm, and the parent of rhythm is God himself. For these reasons it is most desirable that just as every nation has its national anthem every school should have its own song and every college its own yell. This has not yet been widely recognised by educational institutions in India.

Rhythm is seen most definitely in music and in dancing. There is a tacit belief in our country that we have done enough justice to the art of music if we give a period or two in each standard in a girls' school to group singing. Even there little attention is given to instrumental music. But it is not the girls alone that stand in need of the joy and rhythmic self-expression made possible in music. Creative music and its appreciation should be within reach of all young people, irrespective of sex. Corresponding to the rhythmic time-motions of music we have space-motions of delicate rhythmic nature in the dance. Though the training of professional dancers is outside the scope and duty of ordinary educational institutions, they cannot afford to be indifferent to the charm of the rhythmic physical movements characteristic of the dance. For rhythm, as a prominent educationist puts it, " is the connecting link between the train-

ing of the mind and the training of the body."[1] In western countries (both Europe and America) the importance of rhythmic physical movements has been given much attention due to the demonstrations and propaganda of Emile Jaques Dalcroze, a teacher of harmony at Geneva in Switzerland. Similarly it has been made clear by performances made off and on in a few of our go-ahead schools that the country-dances of India are easy, and eminently deserve to be adapted in our schools.

The tendency to repeat is remarkable in savage societies. For them, as for children in all countries civilized or uncivilized, there is no wide distinction between work and play and art. All the three are inseparably related to each other and are all enshrined in rites, symbolic activities and ceremonies. Unlike civilized people who are often content with the rôle of passive spectators leaving the active participation in ceremonies and rites to professional performers, the more primitive folk all personally take part in these common activities. Thus the group by its collective expression of emotions, ideas and ideals realises its oneness and integrity.

Whatever the civilized adults may or may not do, there is no doubt that educational institutions can profitably copy from the ritualistic life of the more primitive people and can safeguard the emotional life of youth from being starved for want of stimulus and means of self-expression. Occasions like Foundation Day, Parents Day, and National or Provincial or Religious Festival Days can be taken advantage of for common ritualistic performances and ceremonies. Singing, instrumental music, dancing, dramatization, pantomine and tableau vivant—none of these need be tabooed on such an occasion. As they give scope to boys and girls of different talents and temperaments to take an active part and as they make an effective appeal to passive spectators of different intellectual and emotional make-up, they

1. L. P. Jacks Physical Illiteracy, (*The New Era*, September-October, 1935).

all are worthy of being considered for inclusion in the programme of school festivities.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Lee	Play in Education, Chs. IX, XX, XXI, XXXV, and XLV.
Watts	Education for Self-Realisation and Social Service, Part III. Chs. III, IV.
Saxby	Education of Behaviour, Ch. X.
Stanley Hall	Youth—Its Education, Regime, and Hygiene, Ch. VI.
Nunn	Education—Its Data and First Principles, Chs. VI—VIII.
Ross	Groundwork of Educational Psychology, Ch. VI.
Shand	Foundations of Characters, Pt. II, Ch. VIII.
Adams	Modern Developments in Educational Theory and Practice, Ch. IX.
Adams (Ed.)	Educational Movements and Methods, Ch. IV.
Findlay	Foundations of Education, Vol. II, Pp. 155-263.
Rugg and Shumaker	The Child-Centred School, Chs. X, XII, XIV.

VIII

THE RÔLE OF THE UNCONSCIOUS

The mind of man has been compared to an iceberg. For every cubic foot of ice above the surface, scientists tell us, there are ten cubic feet below ; ignorance of this fact may mean ruin to mariners and their vessels. As well may mind be compared to an island that stands solitary in the vast deep. We see the surface of the island with its hills and dales covered by green trees and foliage and think it is all that matters, never suspecting that the delightful little island we see is but the top of a huge mountain peak that rises sheer from the bottom of the sea and is actually higher perhaps than even the loftiest peak on land. So is the mind of man. The sights, sounds, smells, tastes, and the feel of things given by touching which we call his sensations ; the inner pictures of the visual, auditory or tactile type which we call his images, the links that connect his various ideas and thoughts by what are known as relations and associations ; and many of his commonly recognised feelings and emotions—these are experiences that occupy the conscious mind of man which he can generally discover for himself by looking within, by introspection. But there is more in an individual than he is generally aware of and a new school of psychology has arisen in recent times which offers some help to the thoughtful man in his task of discovering for himself this unknown inner self.

The greatest figure in this new school is Sigmund Freud, a doctor in Vienna, who for about forty years now has been insisting on the importance of a man recognising the forces that

work within the unconscious regions of his mind. At first his ideas were ridiculed, but he persevered through thick and thin until today even those who most dislike the way he puts things have to admit that the unconscious aspect of life is something to be definitely reckoned with and not to be ignored. Other investigators like Dr. Jung of Switzerland and Dr. Adler of Germany, to mention but two of a remarkable band of psychologists, have made popular throughout the western world the importance of the study of the unconscious, though it must be admitted that these latter neither agree with Freud nor with one another in every important matter. But even when they differ violently from each other they all help in dispelling the prejudice that once prevailed in academic quarters about the practicability of understanding factors that did not come within the purview of our conscious mind.

The unconscious contains, as Dr. Jung teaches us, (1) the Primary or Racial Unconscious and (2) the Secondary or Personal Unconscious. The personal unconscious of each person is made up of experiences that were once conscious but have now become unconscious, " either because their intensity being lost they were forgotten, or because consciousness was withdrawn from them." This personal unconscious is as it were only a superficial layer. It would seem that, to use Jung's own words, " beneath this layer there is an absolute unconscious that has nothing to do with our personal experience. This latter would then be a psychic activity that exists independent of the conscious mind and even of the surface layers of the (personal) unconscious independent and untouched—perhaps untouchable—by personal experience. It is a kind of supra-individual mental activity, a collective unconscious, in contrast to a superficial, relative, or personal unconscious."[1]

The racial or collective unconscious contains racial tendencies such as instincts and other universal urges, impulses and

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1. C. G. Jung *Contributions to Analytical Psychology*—Chap. on Mind and the Earth.

ideas which express themselves in myths, legends and common superstitions in all parts of the world. Important as the racial or collective unconscious is, it is each man's personal unconscious that naturally looms large before us when engaged in the study of the inner life of individuals. Let us therefore try to understand how each man's personal unconscious is built up.

First of all, the power of attention of every individual is strictly limited and no man can afford to keep within his conscious comprehension all his past experiences. It is nature's economy to forget things that need not be kept in self-conscious memory. Naturally they are forgotten—but not lost to the subject, who is able to profit by all his past experiences even when he is not aware of the details which he once apprehended in the past. In the common language of to-day we speak figuratively of such experiences as being stored in the unconscious chamber of the mind. Forgetting is also due to conflict. Constant conflict is going on in the inner life of every person. There is conflict between one natural impulse and another for instance, in the face of a new situation there may be conflict between the instincts of curiosity and fear, and one of the impulses has to go under. Conflict occurs between the sex-urge and the instinct of flight when a member of one sex confronts the opposition of a stronger rival. Conflict between two divergent instinctive urges naturally leads to repression of one of the impulses. Conflict also arises when there is incongruity between a subject's desire to satisfy his natural propensities and his keenness to conform to the ethical and social standards of the group to which he belongs. Cultured life and unrestricted freedom to act according to all instinctive urges are conflicting goals, and no man can serve two masters faithfully. One of the two sets of desires has to be suppressed in order that some kind of internal harmony should be possible. Again man has a tendency to repress the memory of unpleasant experiences of the past. We are all inclined to dwell in imagination as a rule more on the pleasant things that we have done or have happened to us than on the unpleasant ones. Thus repression takes

place in each individual's life for a number of reasons and the experiences that are thus repressed form each man's personal unconscious.

When mental experiences are repressed it does in no way mean, as we have already observed, that they cease to exist ; on the other hand suitable stimuli may revive part or whole of the forgotten experiences. When however an experience that was unpleasant and painful has been repressed, anything that tends to bring to consciousness any aspect of the repressed experience or any idea associated with that repressed experience also becomes disagreeable and painful to the person concerned. Such an experience forms, as it were, a painful constellation within the unconscious, and the new psychology of the unconscious calls it a *Complex.*

Complexes may be formed round a person or a thing or a concept ; and perhaps the largest number of them are formed in childhood, say in the first five years. One of the commonest complexes is what is known as a *Father Complex.* The father is very often represented as the representative of all restraining authority, of tyrannical power—as the child conceives it. So however great may be the love and respect the child has for his father, he very often has a dread of him and even a sort of hatred, and if Freud and his strict followers are correct, he has also some jealousy towards his father for possessing the woman he himself loves, i.e., his mother. This dread and dislike however is not allowed by the child to be openly manifested. It is repressed. The more tactless and unsympathetic the father is the greater and more intense is the conflict caused in the inner life of the child between his sense of devotion and respect to his father—the protector and provider of good things—and the feeling of hatred, dislike and inward opposition to the man who from his position of vantage can rule and tyrannize over his tiny dependent. The thirst for power and independence of children in even good and sensible families is evident in the words of a little one who was once shown an orphan child passing by and inquiringly asked who

an orphan was. "One who has neither father nor mother," said mummy feelingly. The baby expressed much sympathy and after a moment asked "Can she then do whatever she likes ?" The sternness of the parents, especially of the father (though in every house it is not the father who is the stricter of the two parents) may at times produce such a strong and abiding reaction in the child that when he grows up he may have a tendency to regard every one placed in authority over him as an oppressor and a tyrant. Many maladjusted members of society have unfortunately come, we are inclined to believe, from loveless homes or from homes where the air of relentless authority was more in evidence than mutual understanding, tenderness and tactful love. Just as the Father Complex may show the evil effects of harsh treatment and rigour, what some people call a Mother Complex may show the evil effects of undue indulgence at home, and the sense of dependence thus generated in a person may have a tendency to cling on to him for life making him always too anxious to get his problems solved for him by others, himself being unwilling to shoulder responsibility or to take upon himself the burden of independent thinking.

Another commonly recognised complex is what is known as an *Inferiority Complex.* The feeling of an individual that he does not count for much may act as a determiner of his activities. Such a person generally "suffers from self-consciousness, is pre-occupied with the impression he is making on others, is touchy about fancied slights or sensitive about the amount of recognition he obtains as he passes through life."[1]

A sense of inferiority is caused in all children by their helplessness and dependence upon adults. It is however likely to be heightened in them while they grow up if they are specially handicapped by such things as want of friendliness in the home circle or on the other hand by outsiders not giving them that indulgence which they received at home, by the poor

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1. Ernest Jones in *How the Mind Works,* Ch. IV.

social and economic position of the parents, by defects in physical constitution, by the handicap of personal ugliness, or by faulty intellectual or temperamental conditions. In order to make up for these disadvantages, a person very often puts forth extra effort which sometimes results in healthy results but as often leads to unhealthy physical conditions or anti-social behaviour patterns.[1] Similarly complexes may be formed round such ideas or persons as the teacher, the creed, the family, etc. Each man has his own complexes and they cannot be studied apart from the intimate personal experiences of the individual concerned.

Complexes of all kinds have one thing in common—they are all the result of internal conflict. They are not able to come out into the open on account of the subject's sense of propriety. The tendency to keep down Complexes below the threshold of consciousness is called by Freud the work of the Censor—a picturesque metaphoric expression to describe each person's sense of reality and semi-conscious mental effort to conform to prevalent social standards.

The unconscious however may escape the vigil of the Censor and express itself in a number of ways. Slips of the tongue or pen often declare in unvarnished fashion what we believe in the inner recesses of our minds. A gentleman once revisited an institution which he believed he had faithfully managed for a few years. He saw there a new assistant who had joined the institution later, and when someone asked whether the new man was there during his administration he wanted to appear polite by saying "No, he had not the misfortune to serve under me," though what he actually did was to betray himself by using the word "good fortune" in the place of the better-sounding "misfortune"! Once I had to write a letter to a brother on a matter that was considered

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1. One wonders whether there is such a thing as *Superiority Complex*, what usually passes for Superiority Complex being very often a manifestation of some kind of an Inferiority Complex.

bothersome. When after writing a couple of lines I read them again I found to my horror that the letter *r* was dropped in the address, "My dear brother"! Forgetting to do any unpleasant bit of work is not so innocent or accidental a lapse as we usually take it—it is very often the unconscious cropping up to do us a good turn by giving us an excuse for not doing what our more refined sense of propriety obliges us to do.

The unconscious expresses itself in phantasies and daydreams. In idle moments the mind wanders, and what is worse it wanders even when one believes that he is engaged in a definite line of thinking. If we take a piece of paper and write whatever comes to the mind at any moment we shall be surprised at the way our mind wanders. As a matter of fact this method, technically known as the Free Association Method, has been employed by Freud to discover the repressed ideas and hidden complexes of his psychotic patients—men and women with complaints brought about by the intervention of the unconscious. In all mind-wandering or phantasy there is generally an element of wish-fulfilment, the subject trying to realise in and through his phantasies the wishes he cannot achieve in real life. Phantasies are particularly strong and natural in childhood. They are pathological in the case of children and of adults, especially the latter, when those who engage in those fancies or phantasies have a tendency to be satisfied with the achievements of dreamland and not of practical life, when they tend to make phantasy a substitute for reality.

As fruitful as the day-dream, if not more so, is the regular dream, the dream that obtains in sleep, in providing the expert with clues in his attempt to discover the repressed self of the subjects. As in the case of the day-dream or phantasy, there is unrestrained wish-fulfilment in the night-dream also. According to Freud—who has the credit of being the first psychologist to give definite help in the study and interpretation of

dreams as of a piece with our waking life—almost all dreams are wish-fulfilments and almost all wishes fulfilled in dreams are sex wishes, however much these wishes are condensed, caricatured, and dramatized by the unconscious to escape as it were the vigilance of the Censor. Other exponents of the psychology of the unconscious do not agree with Freud in every respect. Jung and Adler whom we have already mentioned, the late Dr. Rivers of England, William McDougall and a number of others have accepted much of Freud's theory of dreams, but in details they find his interpretation too narrow and one-sided. According to them generally—though of course all of them as has already been observed do not agree among themselves in every respect either—dreams may be caused by all kinds of internal conflicts and not merely by conflicts of a sexual nature and they are not all wish-fulfilments but are often continuations of the thoughts of our waking life. All these exponents of dream psychology, however, agree that dreams are not only helpful in diagnosing the diseases of psychotic patients but also they throw much light on the unconscious life of even normal people, (though, of course, the interpretation of dreams should generally be left in the hands of experts).

Hidden complexes manifest themselves in a number of ways even in the case of people usually considered normal. The unconscious however steps in to save them as it were from a full knowledge of their true nature and for this purpose makes a number of devices—*defence mechanisms* as they are called—intended to hide from the conscious self the true nature of the motives and impulses that operate in the unconscious. What is known as *rationalization* is one of the commonest of these defence mechanisms or defence processes. It consists in the giving of a plausible, well-sounding reason for a certain action or series of actions promoted by some not very respectable real motive. The worst of the situation is that the rationalizer himself believes that the plausible, overt reason he gives is genuine. In many marriage-pandals in India there

are found people ready to pick up a quarrel for trifling reasons. The true reason is that where many people meet there are some who feel their inferiority to others, and the quarrel that they create is caused by a desire—unconscious of course—to get attention directed to themselves. Similarly there are boys who refuse to play in a match just when they are wanted to. They may be afraid of not being able to play up to the expectation of their friends ; and to raise such trifling objections as their names not having been originally put in the first eleven, may save them from losing prestige on the play-ground when the whole school watches them.

Projection is another common defence mechanism. The teacher who has an uneasy feeling that his work is not efficient finds it easier to project his weakness on others saying that the class he now coaches is one of the worst he has had for a number of years. A man with a guilty conscience about his private life may try to *compensate* for this defect by throwing himself whole-heartedly into some form of social service. Or he may *identify* himself in imagination with some holy man and may read his life with great enthusiasm and may weep over his trials and afflictions. His identifying himself with the afflictions of the saint does not however mean understanding sympathy with him but is in reality only a kind of phantasy. "The same sort of identification occurs", says Geraldine Coster commenting on a similar instance, "when we blush with shame and discomfort at the sight of another person committing an act of folly or exhibiting unseemly emotion," though we do not have the least intention to help him out of his ludicrous situation. The mechanisms of identification and compensation are of some use in our private and social life, but being unrelated to our general outlook on life they tend to a certain degree of dissociation. Our loyalties and devotions are divided with the result that we are not those strong, unified personalities that we should be. Another defence mechanism is what is called *Transference of Affect*. Those teachers whom

students love are esteemed by them as good and efficient teachers. "Love me, love my dog," says the proverb. If the teacher is liked, his teaching is also liked. This shows how important it is that teachers should be careful not to estrange the feeling of their students but should try by all fair means to win their affection and good will.

There are more serious defence mechanisms which reveal themselves in unadjusted social behaviour. A trifling remark by a neighbour or colleague leads at times to a violent outburst of emotions in adults. In small children we witness for similar reasons that are known as passion tantrums or convulsions of ill-temper. Calm, well-behaved, angelic children sometimes develop an uncontrollable temper when a younger brother or sister is admitted into the family circle. The reason is the fear the elder child has that he has lost the love of his parents. Lying, stealing, truancy, scribbling indecent things on walls, quarrelling for almost the love of quarrelling—these may bespeak buried complexes in the adolescent. Unreasonable worry, fear and suspicion sometimes take possession of the minds of persons young or old, and they become incapable of doing their work. When such serious consequences are met with we call the sufferers neurotic patients.

Neurosis sometimes results in physical troubles. A lady student was assigned lessons in a Training College but whenever her lesson was publicly announced she used to get a kind of rash on her face and she could not take the lesson with the result that the kind Principal ceased to announce her practice lessons on the common notice-board and she had no more of that facial trouble before her lessons. More serious cases of illnesses also are brought about by the intervention of the unconscious such as asthma, fever, stammering, nervous debility, etc. The sense of propriety of an individual drives him onward in a certain line of activities which in his inmost heart he really may not want to do with the result that there is intense con-

flict in him. In order to solve his conflict and to give the subject a good excuse the unconscious brings about an illness.

Other not insignificant evidences of buried complexes we come across in *inhibition* (failure to muster courage or will to do some necessary thing), *obsession* (uncontrollable urge to do some unnecessary bit of work or routine like the famous Dr. Johnson's habit of touching lamp-posts), *fixation* (refusal to grow up or develop in certain matters) and *regression* actually going back to some childish ways of doing things). When these things occur the layman too can understand that there must be some complex working in the person observed. In all serious cases however it is only an expert in the unconscious, a qualified psycho-analyst, that can give substantial help to the sufferer. In all such psycho-therapic treatment there are two essential steps " first, the process of exploration by which the nature and origin of the morbid state are as far as possible brought to light and made clear to the patient ; secondly, the process of readjustment of the patient's mental life, more especially of his affective tendencies."[1]

The chief methods of exploration are Free-Association (employed by Freud), a modification of it elaborated by Jung called Word-Association, analysis of phantasies, and dream-analysis. Hypnosis is also resorted to at times for the same purpose. As the means of cure or readjustment have been suggested abreaction, re-education and sublimation. Abreaction is the name given to " the revival of the emotion which is presumed to have accompanied the disturbing experience and to have played some part in bringing on the neurotic symptoms." It is true as McDougall points out that the mere re-experiencing of an old forgotten emotional event need not bring relief, but the patient certainly finds the renewed experience of the old emotional situation helpful when it is made an element of a

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1. McDougall *Outline of Abnormal Psychology*, Ch. XXIX.

larger process called re-education. The experience of Coleridge's Ancient Mariner has been paralleled by that of many others :—

> "O shrive me, shrive me, holy man !"
> The Hermit crossed his brow.
> "Say quick," quoth he, "I bid thee say,
> What manner of man art thou ?"
>
> Forthwith this frame of mine was wrenched
> With a woeful agony,
> Which forced me to begin my tale ;
> And then it left me free.

A confession that is free and frank and full like that of the Ancient Mariner made in the presence of a sympathetic "Hermit" or of a tactful and understanding doctor has not rarely been the means of revealing the patient to himself and of helping him to have a new sense of values, a new philosophy of life. In this process the task of the expert physician "is to listen and to help by assisting the patient to understand himself, to recognise and realise the occasions of his maladjustments, and to relate together as cause and effect his sentiments and general views of life with his illness. This method reveals the patient to himself. And in the process, aided to see and formulate for himself rather than taught by the physician, he comes to frame a general scheme or plan of life. He comes to appreciate real values and so to form effective sentiments."[1] He is re-educated in the real sense of the word, and he begins his life again as a unified personality leaving behind him the fears and symptoms from which he had hitherto suffered. It is true that suggestion plays an important part in this process, but the whole thing is possible only through the unreserved co-operation of the patient himself. Granted this latter condition, even hypnosis may be of use in the process of re-education. Another important factor in re-education is that the patient should have scope for the sublimation of his instinctive energy, (see Pp. 63-64). The

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1. F. Aveling *Directing Mental Energy*, Ch. XII.

evil that started with unadjusted conflicts of divergent impulses and the consequent indiscriminate repression of natural tendencies, as practically all complexes do start, is remedied not by further repression but by the patient being able to divert his libido or instinctive energy into healthy channels of self-expression.

(The subject matter of this Chapter is closely associated with that of Chapters XXIII and XXIV, and readers are recommended to read as far as possible the three Chapters together.)

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Valentine	The New Psychology of the Unconscious, (at least Chapters I-IV).
Aveling	Directing Mental Energy, Ch. XII.
Miller	Psycho-Analysis and its Derivatives, pp. 13-37.
Coster	Psycho-Analysis for Normal People, (at least Chs. I-IV).
Low	The Unconscious in Action, Chs. II and III.
Saxby	Education of Behaviour, Ch. IV.
Badley	The Will to Live, Chs. XIII, XIV.
Green	Psycho-Analysis in the Classroom, Chs. VI, X, XI, XII.
Nunn	Education, Its Data and First Principles, Ch. V.
Ross	Groundwork of Educational Psychology, Ch. XIX.
Drever	Introduction to Psychology of Education, pp. 199-225.

IX

MEMBERSHIP OF THE GROUP

In the course of this study of the fundamental principles of education we have frequently been referring to the interaction of individuals on one another and of the influence of society in general on the individual. As we saw in the previous chapter, no man can live in society and give an unbridled sway to all his native passions and impulses. Regard for the good opinion of one's neighbours leads to many unconscious complexes even in the case of normal people. That social life is a determining factor of our actions has been also made clear from what we said of the place of rituals and play in organised life and of the far-reaching influence of such general tendencies as we considered in Ch. VI. The subject is so important that we wish to pursue it here in greater detail. This does not imply in any respect ignoring the importance of the individual. As a matter of fact we study the principles of social life and the nature of its organisation in order to give the individual the utmost scope for the development of his individuality. For we believe that educational efforts yield their best results only when we give importance to the individual. We cannot care for society without giving attention to the individuals that form society.

One may perhaps think of improving the morals and widening the outlook of society by keeping before him the requirements of the normal man. But where is the normal man ? Take any one person and we shall find that his history, heritage, environment, disposition and temperament are diffe-

rent from those of others. This is for instance what the parent of two twins report. " I can answer most decidedly that the twins have been perfectly dissimilar in character, habits and likeness from the moment of their birth to the present time though they were nursed by the same woman, went to school together, and were never separated till the age of fifteen."[1] If there can be this difference in twins—though of course we admit that there is more similarity among " identical " twins—it becomes clear how important it is that for educational efforts to be crowned with any amount of success we should treat every individual as a unique personality giving special attention to his general intelligence, his special motor and intellectual aptitudes, his interests, his physical size and age, and to such detailed character traits as his vigour, determination and vivacity. In short, each individual should be dealt with according to the measure of his educability and his individual needs.

This does not mean that every individual should be taught by himself. The existence of schools is not solely due to the economic fact that every parent does not have the means to employ an efficient private tutor for his children. Man being a social animal, the young humans also are deprived of most indispensable opportunities of the full life when they are denied contact with their fellows. It is man's interaction with his fellow men that has led to all advance seen in human society in the standard of his comfort and culture. Man, distinguished from other animals, is what he is—human—on account of his social life and the corporate action and the corporate thought that are implied in his social life. Indeed it is hard to imagine what a human being would be like if he had not the chance of sharing experiences with other men. It is in the group that his nature grows and develops. Personality in others develops his own personality the feelings and attitudes of others produce similar feelings and attitudes in him. It is in the group to which he belongs that the individual learns to

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1. Quoted from Galton by Starch *Educational Psychology*, Ch. VI.

consider the needs of others as well as his own, and to accept group ideals, customs and standards of living, which eventually become his own.

How has this social life been brought about? Why did man originally come together to form a society? Some believe that human society has been made possible because primitive man felt—though of course he was not explicitly aware of it—that the company of other individuals of the same species would be useful to him in his efforts at self-defence and in securing his food and shelter. Modern man too has the same needs and they are satisfied in his case as well by his corporate life. It is therefore presumed that man has begun and continued to lead a social life on account of an implicit "social contract." But the human being is neither a special type of intellectual machine knowing what is best to itself and strives for it, nor are his needs mere economic needs. "His actions, at any rate at the outset, are not governed," as Cyril Burt says in a broadcast talk "by a deliberate search for pleasure or a conscious resolve to shirk pain; they are the result of certain primitive emotions driving him to behave in a specific way, without letting him stop to think what private benefits will ensue."

What are these primitive emotions, or as we would prefer to call them impulses or urges, which have been at the basis of the group life of man? First of all there is the gregarious instinct by virtue of which man finds it extremely irksome to lead a solitary life. Then there are the positive and negative self-feelings the predominance of one or the other of which tends to make a person assert himself as a leader or to be happy to follow the lead of someone else. Another important urge is the parental instinct which inclines the adult members of society to protect and nourish the younger members. The appealing tendency of the weak strengthens the urge of the stronger to care for the former. The tendency of self-display and the desire for recognition also help the group-sense to be strengthened. These innate special tendencies are reinforced in the case of man by such general tendencies as primitive sym-

pathy, suggestion and imitation. It is thus by virtue of natural tendencies rather than mutual arrangements based on expediency that man has always sought to live in groups.

It is also worth noticing that many natural groups or communities such as clans and tribes had their origin from common ancestors. Kinship is one of the ties that keep primitive societies together. Freudian psychology believes that it is the father-idea that is at the basis of all common life even where actual kinship does not exist. When kinship groups take to agriculture and become permanently settled on the land the common affection to their native land also helps to keep the group together, though in course of time the kinship factor may tend to weaken on account of the inclusion of alien elements. Common traditions and common occupations too tend to keep up the group sense. Add to these the economic advantages that accrue from men living together, and we can easily understand why society tried to safe-guard its social existence by evolving folkways, customs, rituals, and regulations to which all its members had to submit.

The collective life of the group influences all its members. " It is a notorious fact," as McDougall points out, " that when a number of men think and feel and act together, the mental operations and actions of each member of the group are apt to be very different from those he would achieve if he faced the situation as an isolated individual." It may be that we know each individual intimately, but this individual knowledge is not enough for us to make a forecast of what the individuals will do when they come together as a group. In order that this may be possible we must study the interactions between the members of the group and of the group as a group with its several members. The mentality of a group is neither the sum total nor the average of that of the individuals that make up the group. The whole in this case may be greater or less than the sum of its parts, according to the nature of the group organisation.

Groups may generally be said to be of three types the crowd, the club, and the community. A fortuitous company of people do not make a crowd. In every busy street we find numbers of people jostling against each other, but they do not make a crowd. If meanwhile a motor accident takes place they gather round the scene of the accident and they all are interested to know how the thing happened and what the principal characters are going to do next. This common experience gives them the rudimentary character of a group organisation as all those present "experience in some degree the same emotion, and the state of mind of each person is in some degree affected by the mental processes of all those about him." For the essentials of a collective mental experience are these a common object of mental activity, a common mode of feeling in regard to it, and some degree of reciprocal influence between the members of the group. For this reason the mob described in *Julius Caesar* by Shakespeare or a lynching party we read of in newspapers in one of the Southern States of America have some kind of a collective life, but like all crowds or mobs these are all transitory aggregations of persons. *A crowd* as such has no history and no future. It is here now, but it will be no more within a few hours. In spite of this fact, however, the several individuals feel a new sense of power experienced by them by virtue of their participation in the crowd. As a corollary to this the members feel themselves free from the restraint that each one exercises over himself on normal occasions. No particular individual in the crowd feels himself responsible for the decision and action of the crowd as a whole. Consequently we very often find the standard of intelligence and morality of a crowd often appreciably lower than that of its ordinary individual members.

The *community type* of the group is very different in these respects from the crowd. Whereas the crowd has no past the community has a history which influences the judgments, decisions and activities of the group as a group and of its individual members. It has an organisation or system of

organisations to ensure its continuity as a corporate body. This continuity of the highly organised group is material or formal, or both. When the members do not change except through death, or expulsion which rarely happens, we say that the group has material continuity. When the members periodically change while the organisation continues as such we have what is called formal continuity. Legislatures of most countries have formal continuity in this sense, but no material continuity. The chief characteristic of the psychological group or the community is that its members have the consciousness and pride of being members of the group. They have a clear idea of the organized body they constitute. "They think of that body as having a definite ideal or a definite aim. They are interested in it, proud of it, fond of it ; anxious for its welfare and survival. They name it ; they talk about it amongst themselves ; they develop a love and a loyalty towards it."[1]

This group self-consciousness is strengthened, as already observed, by kinship, and by devotion to a common territory (country or some subdivision of it), to common traditions, and to common historical or national interests and associations. Contact with other similar bodies in co-operation or conflict also tends to intensify group self-consciousness. War is a dreadful evil, but it has this redeeming feature that it draws together the citizens of the warring country. Collective recreations and amusements such as folk-dances, mass-drill exercises, popular group-games, national festivities and other common ritualistic ceremonies and observances help also in fostering and maintaining the group spirit.

In a community there may be smaller and less organised groups of *the club-type* which also inspire their members, though not to the same extent as a community does. The same individual may belong to more than one of them with the result that he develops what is called a multiple group consciousness. Churches, trade unions, professional organisations,

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1. Cyril Burt in *How the Mind Works,* Ch. XII.

regional organisations such as village or district board, universities or colleges—these are among the smaller groups that help to create and strengthen this multiple group consciousness. The existence of such different institutions as would draw the loyalty of the same individual in different directions is welcome in that they serve as a means to widen his interests and strengthen his altruistic spirit. Whereas membership of a crowd has a tendency to lower the standard of morality and intelligence of its ordinary members, membership of the group-conscious community helps its average members to rise above their own individual level of thought and action.

The life of a well-organised community calls forth the services of intelligent and public-minded leaders. When such leaders are wise, unselfish and self-disciplined they naturally raise the moral tone of their group. It happens not rarely that the most intellectual and the most disinterested and catholic-minded among the group are too great for the common folk to follow with understanding appreciation their standards, goals and motives. They do not however thereby lose all hold on the common body, for they influence the better brains and the better hearts among the people, who in their turn translate the aims and motives of the most gifted leaders in terms which the common mind can understand. The actions of the group under such leadership are thus rendered more resolute, broad-based and effective than they should otherwise be. The members begin to be expansive in their outlook instead of remaining narrow, parochial and self-centred. It is a mistake however to suppose that all these social advantages accrue solely on account of the example and inspiration of leaders of outstanding merit. Even where such great leaders are lacking, the sense of group self-respect and group prestige goes a long way to bring about this healthy reaction in the individual members. Each man is anxious that he should not bring shame on his group by thoughtless or unbecoming decision or conduct, and he is also keen to see that his neighbour should not do so either.

From the days of Plato down to our own days when Mussolini and Hitler hold undisputed sway in their respective countries there have been attempts to elevate one group—the State—above all other groups and above all individuals. The philosophy underlying this effort to glorify the state presupposes that individuals have in the state only that position which cells and corpuscles have in the body. But the physical body is a well-defined clear-cut unit, which cannot be said of every state. Nor do we yet know that cells or corpuscles have a consciousness of their own. On the other hand the consciousness of the group whether of the state or of any other collective body is possible only in the individuals that make up the group. How easy it is to treat an analogy as a conclusive argument! Moreover we should keep in mind the fact that where the personality of the individual is made subordinate to anything outside—state, church or whatever else it be—we fail to give credit to that joy of self-realisation and that sparkling spontaneity which is associated with all distinctly human achievements. It is not inconsistent however to consider personality as a primary factor and to admit that in order to get the full development of personality we require the ever-present and indispensable influence of and participation in social institutions of the kind we have mentioned.

The school is one of the most important institutions or groups membership of which helps the physical and spiritual growth of the young, and the aim of all good schools should be to approximate as much to the community ideal as possible. Residential schools have more opportunities in this direction than day schools, but the latter have no ground for despair either. For every school—residential or not—is usually made up of a more or less homogeneous population. They belong to much the same age group, generally come from families of the same social position (though remarkable exceptions are not infrequent), and live in the same cultural and moral atmosphere for the major part of the working day.

Schools are not haphazard collections of individuals.

They are permanent institutions and have continuity both of the formal and to a considerable extent of the material type. Though in India schools of the modern type have been in existence for no longer than a century we have still a few institutions which have had the privilege of being an *alma mater* for three generations of students hailing from some of our educated families. Even schools founded comparatively recently do have a continued though short existence, and most good schools have a number of students who in the ordinary course of affairs stay on for six or seven years.

All schools, new and old, try to establish or maintain traditions ; and the older the school the greater is the prestige of its traditions. Even the most independently minded individual finds it hard to escape the pull of its traditions. Some of the geniuses who happen to pass through such an institution may find life within its fold fettering to the flights of their creative urges, but a great many of its ordinary members find in its traditions a help in leading an integrated life. Participation in the activity of a crowd or mob may have, as we have already noticed, a tendency to lower the standard of conduct of an individual, but membership of a psychological group raises individual standards of behaviour. This is what a good school does to its members when tempted to do a mean or cowardly thing, the individual concerned is strengthened to resist the temptation by the realisation of the fact that such an ignoble thing is 'not done' by a member of the institution. Discipline is generally easier to maintain in such an institution as has a distinctive tone of its own than in one where such a tone or tradition is absent. Of course there is a corollary to this situation which is not very pleasing to recognise for, if virtues may be strengthened, it is also hard to rectify customs or practices of a doubtful nature provided they are long standing. Any long standing practice is often justified for some thing good that may be said about it, but here is no guarantee that the sum total of its influence is more beneficial than baneful. The system of fagging in the Public Schools of England provides a well-

known instance of the kind. Many educators have tried to discourage the system, but we are told that in many Public Schools it still continues in some form or other. On the whole however an appeal to the tradition of the school meets with a ready response from its young members in maintaining its reputation in studies, games and in problems of social adjustment.

In a school there are frequent common enterprises that foster and strengthen the community spirit, the feeling that all its members—teachers and pupils, seniors and juniors, those skilled in handicrafts and those gifted with special aptitudes for one or the other of the fine arts—belong alike to a common institution, a corporate body. Even participation in the daily "school assembly" is helpful to the individual in identifying himself with the school. Foundation day, parents' day, annual athletic meets, terminal or annual social gatherings—these are some of the special occasions when the school as a body meets representatives from outside and thus realises afresh its community sense. These occasions are of special importance in the life of the school inasmuch as they give scope to different individuals to make those characteristic contributions which each one is specially capable of making to the joy, happiness and sense of achievement of the whole school. When an individual makes a contribution, however humble it be, towards raising the prestige and reputation of a corporate body, he experiences a heightened sense of the importance of the institution to which he belongs and at the same time enhances his own self-respect. He finds life worth living both as an individual and as a member of the social group.

The contact of a psychological group with similar other groups heightens the group sense of its individuals. Hence the importance of inter-school functions, where representatives of different schools meet for co-operative or competitive efforts. Inter-school exhibitions of school productions such as hand-written magazines, drawings, sketches and paintings, collections of stamps, coins and specimens ; inter-school debates and recitations ; out-door fixtures like inter-school football or cricket

matches—these are some of the factors that keep alive and reinforce the group sense in educational institutions, factors that help to convert the different individuals into a community or a psychological group.

The good school is a community with a heirarchy of official and non-official leaders. The head of the corporate body is the head-master or the principal as he is variously called. Under him are the several assistant masters in charge of different standards or subjects. They all help him in stimulating the creative energies of the pupils and in directing and regulating them. Incidentally they help in fostering the loyalty of the young folk to the school and in maintaining the school order and, as it is often described, in maintaining discipline. Discipline, however, is a term that is better applied to the control that an individual applies over himself, and this can rightly arise only from within the individual and out of his sense of relative values. External order and the interaction of individuals on each other are undeniably helpful for an individual to exercise self-restraint or discipline. It is the function of school authorities to help in the creation of an atmosphere conducive to the exercise of such self-discipline by the young. Teachers need not always rely on their own unaided efforts. Though responsibility in the matter is particularly theirs, they can get much help in this direction from the student body itself, especially from those among the pupils who are gifted with a capacity for leadership. In every normal group we are sure to find certain leaders in whom an aptitude for leadership is pronounced just as there are many who are content with the rôle of amiable followers. Not a few teachers find themselves in awkward and nerve-racking situations on account of a mistaken unreadiness or hesitation on their part to recognise the leadership of some outstanding individuals from amongst the students. Wisely managed these latter will give immense help to teachers in maintaining order and in fostering a sense of loyalty to the school in their recalcitrant fellow-students. Modern educators are generally agreed that the best form of school

government is where the students themselves recognise that an orderly system is essential for efficient work to be done in the school and themselves help in maintaining such order. Where the teacher appeals in the right way to the sense of responsibility of the young and invites them to share in the work of administering the school he is sure soon or late to get ample response. It may not be forthcoming immediately, but all good things are worth working and waiting for in patience and hope. Where these conditions obtain, even the newest entrants readily recognise the position of the school as a happy social group and try to uphold its honour and prestige by their orderly conduct.

Within the school there are minor group-units such as the different standards, houses (where the house-system prevails though this is rather rare in our country), athletic clubs, debating societies, co-operative stores and dramatic unions—all subordinate to the main group which is the school itself. This internal organisation of the school group into minor groups also strengthens the devotion and pride which the members feel towards the *alma mater*. The social sense engendered in these and several other ways is commonly called *esprit de corps*, and it silently persuades the student to subordinate his ego-centred desires and impulses to the demand and rights of his little society and thus slowly to discover for himself the great fact that his freedom and individuality can only be fully realised in the give and take of social life. These are some of the means which, wisely employed, help teachers not only to maintain what is popularly known as "discipline" which in itself is but a minor affair, but to raise the intellectual, social and spiritual standards of the young and to send them out into the wide world to face with courage and confidence its manifold responsibilities and ever-new opportunities.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

McDougall	The Group Mind, Chs. II—IV.
Wheeler R. H.	The Science of Psychology, Ch. II.
Cyril Burt & others	How the Mind Works, Chs. XII, XIII.
Drever	An Introduction to the Psychology of Education, Ch. XI.
Raymont	Modern Education, Chs. X, XI.
Nunn	Education, Its Data and First Principles, Ch. XV.
Ross	Groundwork of Educational Psychology, Ch. XV.
Watts	Education for Self-Realisation and Social Service, Pt. I.

X

HEREDITY AND INDIVIDUAL DIFFERENCES

It is a common belief in democratic countries that given the right education every individual can be turned into a healthy and efficient citizen and that equality of opportunities brings about equality of achievements. The American nation was dedicated, as one of its greatest Presidents[1] is reported to have said, to the proposition that all men are created equal. It is a noble ideal that every citizen should get all opportunities possible to realise the best in him, but in actual life we find that all individuals are not capable of equal performances. There cannot be any doubt that each one should be encouraged and given opportunities to grow to the utmost of his capacities, but there are individual differences in capacities and dispositions that cannot be ignored. Not rarely there is much disparity in the standard of accomplishments of indiyiduals coming from similar social surroundings and educated in identical institutions. The results of mental tests performed by skilled investigators also bear abundant testimony to the truth of this observation. We are thus forced into some kind of belief in innate differences.

Innate differences are not all necessarily hereditary, though all hereditary differences are innate. The word heredity comes, as MacBride points out, from a Latin word, "hereditas", (originally a piece of property which belongs to a man and passes at his death to his son). The word now means

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1. Lincoln—(See B. H. Bode *Fundamentals of Education*, Ch. III).

all those traits, physiological and mental, which an individual derives from his parents. No one denies the fact of heredity, though there is strong difference of opinion among biologists and educationists as to the degree of the importance of hereditary factors in the achievements of individuals. Even those who recognise the important rôle that heredity plays in individual development do not all speak with one voice on the matter. For instance there has been keen controversy as to whether acquired traits, or characteristics which an individual has come to possess or manifest as a result of his own efforts in adjusting himself to his environment and which he did not inherit from his forbears, can be passed on by the individual concerned to his progeny.

A French scientist named Lamarck who published a book on the subject in the beginning of the last century (1810) was definitely of opinion that such acquired traits could be inherited, an opinion which cheered educationists as they thereby were strengthened in their hope that they were laying the sure foundations of a new world order through their educational enterprise. About fifty years later Francis Galton and August Weismann especially the last named did much to spoil the optimism thus generated by Lamarck. Weismann cut off the tails of successive generations of mice which in spite of all these mutilating assaults still gave birth to little ones which duly appeared with their ancestral tails, a fact which proved to the satisfaction of the experimenter that acquired characteristics were not inherited. In spite of the fact that the loss of tails was not the result of any adjustment on the part of the mice but was a mere accident as far as the mice themselves were concerned, scientists and laymen widely accepted the contention of Weismann that acquired traits or the effects of habits cannot be passed on to successive generations. Lamarckism or faith in the possibility of acquired traits being inherited was thus generally discredited.

Experiments made recently (in the second and third decades of the 20th century) go to prove that Lamarck's view

deserves better consideration at the hands of thoughtful and scientifically minded people. Kammerer, a research worker in the Institute of Experimental Biology at Vienna, experimented with two species of salamander and found that one variety known as salamander *maculosa* which has a black colour spotted with patches of yellow can not only be made, if left to live on a background of yellow loam, to have its patches of yellow increase in size but pass on this disposition to have increased yellow patches to the successive generation of salamanders provided that they also are left on a similar background. "The yellow pigment, which in the parents had increased till it found two longitudinal rows of large spots, grew in the children to such an extent that the rows of spots became amalgamated so as to form longitudinal streaks and finally the streaks became connected by transverse ridges until the whole dorsal surface was predominantly yellow."[1] Kammerer not only experimented on the inheritance of changes in colour but also on the breeding habits of this and another variety of salamander known as *salamander atra*, and found that the breeding habits of both species could be progressively altered from generation to generation.

Similar experiments were made independently by Durkhem, a biologist at Breslau, on the common white butterfly and its pupæ and he found that it was possible to alter the colour of successive generations of butterflies by exposure to an orange light. A Russian physiologist named Pavlov experimented with white mice to which he endeavoured to teach an association of ideas. We quote from MacBride's account of the experiment "They were fed once a day, and each time food was put into their cages an electric bell was rung. It required 300 lessons to impress on these mice the meaning of the ringing of the bell. When, however, a first "filial" generation of mice was bred from them, 100 lessons sufficed to teach these younger mice to seek their food when the bell was

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1. MacBride *Introduction to the Study of Heredity.*

sounded. In the second filial generation this result was accomplished in 30 lessons, and in the third filial generation in 5 lessons."

Experiments similar to Pavlov's have been made on white rats by McDougall who found that in the course of seventeen generations the ratio of the average time taken by the best "control" rats to accomplish a certain task to the average time required by trained generations was 17 to 10—a result far in excess, as Fox points out, of anything that could reasonably have been anticipated. All these experiments thus give the same result, viz., that the exercise of a habit on the part of an animal renders the formation of the same habit easier in the offspring.

It should however be confessed that acquired habits by their very nature are of immensely shorter duration than racial or hereditary habits and that, unless the newer habits are constantly strengthened by the continuance of the new environmental factors that originally brought them into existence, the species will readily recede to the racial type. For thousands and thousands of years have the racial characters been ingrained into the system of the present species and what has thus been done by numberless generations in the past cannot now be easily altered in the course of a few generations. All that we can reasonably expect to find is that the offspring is able to show some slight trace of increased facility in acquiring a modification of inherited traits. This advantage is likely to be lost unless adequate opportunity is given for exercising the new trait repeatedly and constantly.

This is made clearer when we give some attention to the mechanism of heredity. In the lowest forms of animal life—of unicellular animals—a new organism is born by the first animal splitting into parts, each of which assumes the rôle of an independent being. Here continuity of life is a literal fact. But Mother Nature abhors monotony and she has evidently thought that the best way of achieving variegated effects was to provide for the birth of new beings from the union of two mature organisms, each of which would give a part of its own

special characteristics to the offspring. Imparting of one's own life is a costly process and to make the animals willing partakers in the self-giving undertaking nature bribed her children by making sexual union a highly pleasurable affair. Thus we see throughout the world and in all except the most elementary stages of life male and female individuals joining together in the work of procreation. The germ plasm of the male mingles with the germ plasm of the female and in the process one cell of the female (in the human being no bigger than 1|125 of an inch in diameter) receives into it the germ cell of the male which in man, as Sandiford says, is about 300,000 times smaller than the female cell. From this fertilized egg or zygote comes the full grown organism of the next generation.

The fertilized egg grows rapidly by a complicated process of cell division, in which elements from both parent cells actively participate. Some of the elements resulting from this complex process become the basis of bodily organs and functions ; and some remain as germ cells so that when the new organism grows into a full grown man either this very same germ plasm (as many biologists believe it) or similar germ plasm that takes its piace (as some others hold) become the means of transmission of life and body to the generation that comes after. Whether the germ plasm of the adult is the identical substance that remained as germ plasm in the infancy of that adult or not, there is no doubt among any of the biologists that the germ plasm of the adult has resulted like his somaplasm from the germ cells of his parents. The little zygote is thus the mysterious bridge between millions of generations of the past and countless generations that are yet to be. When we realise that he is but one link in an uncountable succession of generations it becomes easy to understand why many biologists are slow to give any importance to the transmission of acquired characters even in the face of a few evidences of such transmission mentioned by painstaking experimenters.

As children are born of the germ plasm of the parents

and as the germ plasm does not undergo any considerable change from year to year at any rate after the organisms have attained maturity, we can easily account for similarity among siblings, brothers and sisters born of the same parents. Why should there be on the other hand any difference at all among them ? To answer this question we should give some attention to the composition of the germ cell.

The cell of every animal male or female contains a definite number of smaller parts known as chromosomes. The number of chromosomes differs from species to species, but it remains constant in all the members of the same species. Thus the body-cell of the ox or the guinea-pig carries 16 chromosomes ; the salamander, 24 ; monkey, 54 ; mouse, 40 ; garden pea, 14 ; wheat, 16 ; etc. In man the number is 48. In the germ cell also the number is the same as in the body cell to start with, and this number is known as the *diploid* number. When the germ cell matures and gets ready for fertilization a curious phenomenon takes place. The number of chromosomes by a strange process gets halved, and to take the instance of man the mature germ cell in the male or female carries only the *haploid* number of twenty-four. In fertilization the haploid number of chromosomes from the two parents join together, thus restoring the diploid number in the fertilized cell of the zygote, which by elaborate process of cell divisions develop in course of time into the little babe that is ready to leave the shell of its mother's body. Turning again to the division of the original diploid number of chromosomes in the mature cell into the haploid we find that—to take the instance of man—the reduced number of twenty-four chromosomes in say the male is not necessarily made up of twelve chromosomes he derived from his father and twelve he derived from his mother. It is possible that the twenty-four chromosomes in the particular germ we are considering are made up of ten chromosomes from one parent and fourteen from the other, or sixteen received originally from one and eight from the other, etc. Thus calculating by permutation and combination it is possible to have

more than a million variations in the mature germ cell of each uniting male and female—a sufficient explanation of differences that exist in the various children of the same parents. This is not the end of the story either.

It is believed that each chromosome is made up of a number of determiners or genes, and that each gene is the carrier of one or even more than one hereditary character. It may happen that the ripening or maturing cell does not contain the chromosomes or the gene which accounted for a certain character or trait in the parents, and the consequence would be that the offspring will not have that trait which was in its immediate progenitor.

The transmissibility of traits or characters was studied in the middle of the last century by an Augustinian monk, Gregor Mendel, who lived in a monastery at Brünn in Moravia (Czechoslovakia). He experimented with the crossing of several varieties of peas and published a paper in the proceedings of the Natural History Society of his place. His results were not much thought of until in 1900 De Vries and others, each independently, arrived at similar results. Their results are now generally known as the Mendelian Theory. Mendel crossed a kind of pea whose plants were tall with one whose plants were short. The result was a crop of peas whose plants were all tall. These peas were sown and self-fertilized and the resultant crop was made up of three times as many tall as dwarfs. The dwarfs, being self-fertilized, produced nothing but dwarfs. The talls were self-fertilized and in the third generation it was found that out of the talls came one third talls that bred true and two third talls that behaved like the first cross generation which themselves being tall became parents as it were of some pure talls ($\frac{1}{4}$), some pure dwarfs ($\frac{1}{4}$) and some impure talls ($\frac{1}{2}$). Here tallness is regarded as the dominant character. Similar cross-fertilization was made of peas that had wrinkled skins when dried and round skins when dried, peas of yellow pods and green pods, etc. The result was the same, viz., the first generation had the dominant trait throughout, and

the second generation consisted of pure dominants, pure recessives, and impure dominants. The practical application that suggests itself is that segregation is helpful for the perpetuation of dominant traits.

Applied to man, it may be admitted that segregation and in-breeding of individuals with the desirable dominant traits will be of service, if it were possible so to treat them. But segregation on a large or thorough scale is far from easy for a number of social, moral and practical reasons. Secondly, even assuming that segregation were possible how shall we select the desirable traits? The units of a good character or of a sound intellect have not yet been satisfactorily analysed, for what we call character or intelligence is a combination or linkage of several factors. Again the most desirable person we wish to produce through our educational, social and religious agencies is a man with a good physique, a reliable character and a powerful intellect. An ideal eugenic marriage should keep all these requirements in view. Thirdly, biologists have not yet been able to identify, so far as man is concerned at any rate, the genetic carriers of characters or traits in the chromosomes and genes. The difficulty is still more complicated by the view that a single gene may affect more than one unit.

The above considerations, discouraging to a certain extent as they are, do not make acquaintance with the known laws of heredity useless to us, though we recognize that there is no ground for the exuberant optimism of certain writers who seem to think that a new heaven and a new earth can be ushered in through the application of eugenic laws. We occasionally find a high or a low level of achievements is generally maintained, though not without remarkable exceptions, in certain families. American writers on heredity rarely fail to mention the family of Jonathan Edwards and his brilliant wife from whom up to the year 1900 have descended 1394 persons including

13 college presidents, 295 college graduates, 65 college professors, 60 members of the medical profession, 100 clergymen, 75 army or navy

officers, 60 prominent authors, 100 lawyers, 30 judges, 80 public officials, 3 congressmen, 2 United State senators, and one vice-president of the United States.

Similarly English writers point to the number of genealogies brought together by Galton in his *Hereditary Genius*, (published 1869). Among the types investigated by him were judges of England between 1660 and 1863, eminent statesmen and commanders, literary men and men of science, poets and musicians. Over against them are mentioned the Jukes and the Kallikaks, people with most unfortunate records. The Juke family, reported by Dugdale in 1877, sprang from a shiftless truant in New York State who married an equally worthless woman. They had five daughters, from whom arose a prolific company of men and women.

In five generations the family including 200 persons, who married into it numbered 1200 among whom were included 310 paupers, 7 murderers, 60 habitual thieves, 50 prostitutes, 130 convicted of crime, 300 who died in infancy, and 440 physical wrecks from debauchery. Only 20 learned a trade, and 10 of these learned it in prison. The family as a whole is said to have cost the State over a million and a quarter dollars in 75 years.

A like sorry tale is told of the descendants of one Martin Kallikar (name fictitious).

He was a soldier in the Revolutionary war who through a feeble-minded girl became the head of a little tribe which up to the year of study (1912) numbered 143 feeble-minded, 292 unknown, 36 illegitimates, 33 prostitutes, 24 alcoholics, 3 epileptics, 82 died in infancy, 3 criminals. 8 keepers of disreputable houses, and only 46 normal individuals.[1]

The same Martin after his return from war married a normal woman and became the progenitor through her of a group of 496 people of whom all except five were normal individuals. These figures make us say with Starch that human nature does not gather grapes of thorns or figs of thistles.

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1. For greater details on the Jukes and the Kallikaks, see Starch or Keatinge.

From what we have already noticed in connection with the transmission of acquired traits and of the Mendelian law of dominant traits, we can understand that it is not the characteristics of the immediate ascendants or parents alone that decide the nature of the descendants. Roughly it may be presumed, following the lead of Galton, that the offspring inherits half of its nature—physical and psychological—from its parents, 1|4 from the grand-parents (together) 1|8 from the great grand-parents, and so forth. If this is so, and many people agree that this is a useful though very rough statement of truth, it is to be expected that two tall parents say of 72 and 70 inches need not have offsprings of 71 inches in height but may have by regression to type sons and daughters whose average heights may range somewhere about 67 or 68 inches. This confirms the view that heredity is the sum total of all the past experiences of the race in which the nature of parents plays a considerable part, though this part is not so overwhelmingly important as some have a tendency to suppose.

What is the upshot of all this discussion on heredity in relation to our chief interest in this study, i.e. education ?

We have observed already that eugenic marriages on a wide scale are neither practicable nor desirable. The laws applied to the breeding of animals will if thoughtlessly applied to man degrade him as humanity has developed moral and social values which primarily do not rest on hereditary factors. The superiority of man over other animals is more a matter of his social and moral life than of his biological inheritance. Nevertheless educators can do some service with their knowledge of genetics if they try to acquaint young men and women with some of the primary laws of heredity which will save many of them, even if unfortunately not all, from rushing headlong into the selection of a life-partner through the impulsive haste of a fleeting fancy. Love in actual life is not generally so blind as is pictured on the pages of romantic fiction.

Some extreme geneticists are inclined to despair of the wisdom of spending those huge amounts of money which all civil-

ized governments do on national education. They are in no way convinced that acquired characters, such as civilized manners and a cultivated outlook on men and things, are inherited and they woefully point out that these have got to be acquired by every succeeding generation with almost as much effort as the generation that went before. But in our opinion these economic geneticists stand condemned out of their own mouths. If these traits are not transmitted by natural inheritance but are acquired by personal experiences then there is greater need why education should be given due attention ; for, under these circumstances education, direct and indirect, is the only means of continuing the fruits of civilized life.

It does not however follow that the same kind of education and the same methods should be applied to all. If modern biological sciences teach us one thing it is that there are differences between one individual and another in aptitudes and tendencies. These individual differences should be recognized and the necessary changes in the content, method and progress of instruction be effected so that each individual may be enabled to make the best out of his own life. We cannot make, as the saying goes, a silk purse out of a sow's ear. Nor need we, for there are purposes which the sow's ear can serve and the silk purse cannot.

Individual differences are often innate, but they are not, as was pointed out at the very outset, all necessarily hereditary. A great father need not always have a great son, and most of the famous men in the world have been born of parents who were not any thing like as remarkable as themselves ; for instance such heroes of peace and war as Buddha, Mohammed, Shakespeare, Newton, Napoleon, Lincoln, Gandhi or Kagawa —to mention a few representative names from various parts of the world—have all had fathers of the ordinary type. There are undoubtedly certain families which produce greater men than others, but to think that all the children that come from backward communities or low social circles are all or even generally made of poor intellectual and moral stuff is to read a distorted

meaning into the findings of the biologist. Even if there is a slight difference between one community and another community or one race and another race, the differences between race and race or community and community are nothing compared to the wide differences that are found among the talented and untalented individuals of the same race or community. This should make the teacher cautious and wary in the application of his knowledge of heredity to the class-room.

If after the exercise of all his knowledge, skill and enthusiasm the educator still finds differences in the response he gets from his several students he may reasonably suppose that some of the variations in individual perfomances are due to innate differences in his students and that innate differences are much affected by hereditary factors ; but he has no reason whatever to naïvely believe that all the differences he comes across are due to hereditary or other innate causes. There are other important factors to be considered, some of which we deal with in the next chapter.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all

MacBride	Introduction to Study of Heredity, Chs. IV & IX.
Sandiford	Educational Psychology, Ch. I.
Starch	Educational Psychology, Ch. VI.
Ragsdale	Modern Psychologies and Education, Ch. VI.
Gates	Psychology for Students of Education, Ch. III.
Nunn	Education, Its Data and First Principles, Ch. IX.
Ross	Groundwork of Educational Psychology, Ch. V.
Keatinge	Studies in Education, Ch. II.
Fox	Educational Psychology, Ch. I.

XI

ENVIRONMENTAL CONDITIONS AND INDIVIDUALITY

Before passing on to the process of education we have yet to consider at some length one of the most important factors in education which we have had occasion more than once to refer to in the course of our studies, viz. the environment. Operating sometimes in harmony with heredity, oftentimes in opposition to it, the environment as one of the important data of education deserves to be studied at least as carefully as heredity in order that we may be able to make the best out of it in our educational efforts.

By environment we mean whatever influences the conduct or behaviour of an organism from outside, and it consists, as Dewey puts it, of all those conditions that promote or hinder, stimulate or inhibit its characteristic activities. To the fertilized germ cell or zygote even the body of its mother forms an environment. When the human child comes out of his parent's body his environment is immensely extended. His home and its neighbourhood, all physical and climatic conditions of the locality in which it is situated, the social and economic conditions of his people, their history, ideals and traditions, their language and customs—all these and numerous other things form his environment.

The factors we have referred to above may be seen to belong to two different orders, i.e. (1) material or natural and (2) social or spiritual. Without adjustment to the natural environment no organism can be expected to live. But there

is much difference between man and other animals in the kind of adjustment they make to natural environment. Other animals generally manage to adjust themselves to their environment as best as they can, and if they fail to do so they die out and their race may also become sooner or later extinct. Just as a gardener weeds out undesirable species of plants found in his garden, nature also evidently selects, as it were, those species that she favours, and destroys the rest. This is the process called natural selection by Darwin. It is the glory of man that he can not only like other animals adjust himself to his surroundings —and much more effectively too for that matter—but that he can also adjust the environment to suit his needs and purposes. To take a simple and familiar instance, man, besides learning to eat such different kinds of grains as are found in the various climatic regions of the world, also has learned to grow new kinds of grains in places where they never grew before. Among thousands of other instances of his triumph over nature may be mentioned man's capacity to sail on the sea, to travel in trains that speed through mountain tunnels, to race in aeroplanes through the air, and to arrest the progress of a deadly disease by a surgical operation. All these achievements have been possible because man first learned the secrets of nature by adjusting himself to them. Seeming to stoop before her relentless elemental forces, he has managed to conquer in numerous directions.

Great as man's achievement in the realm of natural environment is, his kinship to creative divinity is manifested still more gloriously in the manipulation of his social environment. Man is what he is to-day, just a little lower than the angels, on account of his social life. It is true that the original endowment of man in the form of native abilities is greater than even that of any of the primates. But this greater wealth of native abilities does not by itself account for the immense superiority of the average man to the highest of the animals. "His vast and undeniable superiority is for the most part due", as McDougall puts it so unequivocally, "to his acquiring,

in the process of growing up in a social group, a great part of the traditional skill, knowledge, and wisdom possessed by the group." The experiences of the cleverest and the most gifted members of animal societies are mostly limited to the here and the now. On the other hand man is capable of transcending the limits of time and space by his social institutions and perhaps still more so by his power of speech as expressed in language.

Language is the crystallized result of the efforts of countless generations of men who strove diligently to give expression to their impressions or inner experiences and thus tried to make them available for sharing and participation by their fellow men. It conserves the moral and intellectual achievements of the past ; and it makes it possible for men to share the hopes, fears and expectations of those who live in remote parts of the world. One of the important facts we have to notice here about the use of this great social organon, viz. language is that it is acquired by each individual almost unconsciously.

The unconscious assimilation of nurture we find also in the manners and customs that prevail in any social group. In certain places the putting on of a head-dress is a mark of respect to a superior, in other places it is more polite to remove it in a similar situation. Europeans use the left hand in eating as freely as the right, while to the Indians it is an abomination to touch food with the left hand. The various ceremonial customs and rites which all people, civilized and savage, observe in their respective countries are the result of social life, and acquaintance with them grows in individuals without much conscious attention being given to them. In personal relations we sometimes come across men and women who are credited with a good heart but are often described to be unmannerly or rude. The possession of such rough manners is often due to lack, especially in childhood, of wide social contacts.

Similar unconscious influences are at work in artistic taste. If in childhood the eye and the ear are accustomed constantly to harmonious and graceful sights and sounds, a standard of taste and elegance and æsthetic appreciation is established. On the other hand disorderly and tawdry associations established in early life make it hard for people to keep to standards of tidiness and gracefulness when they grow up. The fact is that the environment exerts its suggestion on the growing mind at all times. Whatever the child sees and hears or in other ways experiences makes a sure impression on him. "Give me a child until he is seven, and I care not who has him afterwards", so runs an old pedagogic adage. We do not now believe that the years that follow are unimportant, nor that great changes are impossible in subsequent years. Still no one can deny the extreme formative importance of childhood experiences, and hence the need of surrounding the child with the best we can provide in the realm of the beautiful and the artistic. What the adult members of the family admire and appreciate is usually admired and appreciated by the child. If he hears good poetry or lovely tunes or sees beautiful pictures drawn by the elder members of the family, he will be inclined to attempt producing forms of beauty himself. Nobody need tell him to express himself artistically; as a matter of fact, to be forced to admire the works of others or to be forced into forms of self-expression when the child himself is not prepared to do so, is a sure way of creating distaste for beautiful things. Even too great an attempt to make a child well-dressed may make of him indifferent to, and may sometimes even make of him a rebel, in matters of dress. On the other hand the child brought up in a family devoted to the pursuit of the beautiful and the artistic is naturally drawn to the appreciation of beautiful things and is often impelled to attempt producing beautiful things himself. When the child attempts production of something beautiful—let it be the poorest picture, the most halting tune or poem, or the least consistent story—he feels an ex-

hilarating experience which spurs him on to further effort on his own part and to the careful study and appreciation of the works of others.

What is true of language and manners and æsthetic taste is also true of the acquisition of a sense of moral values such as truthfulness, loyalty and other virtues which we usually associate with a noble character. These are essentially personal virtues, but in their cultivation each person is powerfully influenced by environmental conditions. As a matter of fact apart from one's social milieu, the moral sense does not develop. The child's notions of right and wrong are first determined by adult attitudes. When he does certain things the grown-ups appear pleased and they praise him, and when he does certain other things they are evidently displeased. He therefore tries to continue doing those things that meet with the satisfaction and approval of the adults with whom he grows up, and is filled with a sense of fear and remorse when he is impelled to do those things that are disapproved of and discouraged by them. In course of time he begins to accept these adult standards of conduct as his own. So long however as he does not appropriate these standards as his own but only tries to adjust his conduct to the requirements of an external objective environment, so long, in other words, he does not "interiorise" the regulations and inhibitions of the outside world, he cannot be expected to make any great moral progress. In the self-appropriation of external standards, the child is very much helped by his interactions with other children ; for in his play with them he finds any happiness beyond his reach unless he submits to a certain extent his individual wishes and adjustments to those of his playmates. Thus is developed the spirit of co-operation and reciprocity, where the child willingly submits himself to general standards of morality rather than to what Jean Piaget calls the unilateral respect of adult authority. It is through this habit of internal discipline, of mutual respect and of self-government, that the child is better prepared for its

future task of citizenship than through the influence of unilateral respect and adult authority.[1]

The greatest single environment factor in the life of a person is the home of his childhood. Parents and other senior members in the home may try to teach the young whatever they know through precept and example ; thus practical skill, family traditions of art and culture, and moral conduct are all constantly brought to the notice of the child in the home. No wonder that the conscious and unconscious influences of the home leave an ineffaceable impression on the child which remains with him through life. In the last chapter we referred to certain well-known genealogies, good and bad, and considered the view that family characteristics continued in succeeding generations on account of certain biological peculiarities. But the continuance of most of these characteristics can be fairly accounted for even without reference to transmission of characteristics through blood. One of the old Jewish prophets once said " The fathers have eaten a sour grape, and the children's teeth are set on edge " and suggested that in an ideal society each one should be held responsible for only his own actions, " Every man that eateth the sour grape, his teeth shall be set on edge."[2] Whatever may be said about this latter ideal, we find a law of sequence in that the fathers act and that the resultant reactions continue in the succeeding generations as well. But the continuance of this reaction need not be due to transmission of acquired characters. There is what Adams calls an apparent transmission. " Characteristics acquired by the fathers may appear among the children not because they are transmitted, but because they are again acquired by the children." The sour grape eaten by the father leaves a temptation behind in the form of a suggestion which may act on the children who, if they happen to be overwhelmed in later life with grief

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1. See J. Piaget *The Moral Judgment of the Child.* Chapters II—IV, the main part of the book, deals with this problem. See particularly Chapter IV, p. 366. Marjorie Gabain's Trans. Kegan Paul, 1932.

2. Jeremiah Ch. XXXI Vv. 29-30.

or are forced to face keen mental conflicts, are likely to think of the sour grape as an easy way of escape out of their troubles.

Cyril Burt in his masterly study of delinquency among the young shows how home conditions very often lead directly or indirectly—more often the latter—to a course of unsocial or antisocial conduct on the part of the young. He gives eloquent facts and figures to show how the material, the conjugal, the disciplinary and the social status of the household affects the moral and social conduct of the child. It is no wonder if in poor, insanitary and overcrowded households where families are huge, where the parents largely depend on charity or inadequate means of livelihood, and where the children cannot be sent to school on account of dire poverty, there should exist strong temptation for the young to lead questionable lives ; the wonder on the other hand should be that in the face of all these degrading and miserable factors the majority of people still manage to lead clean lives.

In the same way defective discipline—expressed in rigorous repression or unrestrained freedom to do whatever the child cares to do—affects the normal development of the young. In either case, he does not find the tactful understanding and sympathetic love and companionship that he should find in the home. An intelligent observer once returned from a visit to an orphanage and said that the children got there everything that they wanted in the form of necessities and comforts except love ! From the days of the ancient Greeks down to our own days of the Soviet, attempts have been made by doctrinaire philosophers to popularize the ideal of making children the care of state institutions rather than of private homes, and almost all of them have failed hitherto to make any impression on the outside world, as the latter believe that no institution can give that love and loving individual care that parents, brothers and sisters give so abundantly and uncalculatingly to the little child. Second in misfortune to the neglected child is the only child who does not get the healthy comradeship of brothers and sisters.

More unfortunate and more productive of evil than want of love or comradeship is the presence of vice in the home. Drunkenness is one of the worst misfortunes that can come into the sacred precincts of the home. Several other evils also may exist in the family :—

"Crime, brawling, bad language, irregular unions contracted by the parents, immorality on the part of other inmates of the house, sexual molestation of the child by its own relatives, heartless or brutal usage in countless forms and varying degrees, all tend to set up, by their progressive effect upon the young and sensitive mind, such a sense of injustice, such feelings of indignity, wretchedness and apprehension, that as he grows more critical and independent, he finds himself at length impelled to seek relief or distraction by some vehement deed of his own. He may lose all self-command, and blindly strike an offending or unoffending party. He may hand on the maltreatment to one of his own tiny juniors, hurting as he has been hurt, cursing as he has been cursed. He may seek to escape it all by refusing to live with his family, perhaps supporting himself by theft or by other immoral means."[1]

Where these conditions obtain the home becomes a veritable hell, home which evidently was meant by providence to be a miniature heaven on earth. For, delightful beyond the power of words is a loving home where the young members of the family grow in grace and wisdom, rejoicing in the love they receive from others and making them happy in return by the doing of all those little things which a guileless joy of service inspires them to do. Children who grow up in such family circles have the best chance, other things being equal, of leading an adequate, efficient and cheerful life of social adjustment when they pass on into the wider world.

Many homes fail to come up to this ideal on account of ignorance on the part of adults and on account of the limited nature of the social and economic means of the overwhelming majority of homes throughout the world. Hence the importance of the school, which can attempt to do a number of things which even the most fortunate homes cannot. Very few homes can expect, for instance, to teach well the boys and girls

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1. Cyril Burt *The Young Delinquent.*

of to-day such subjects as are taught in schools by specialists in those subjects. We want our youth to be acquainted with the thoughts and aspirations of people who lived in olden days like the ancient Hindus and the ancient Greeks. We also want them to be in touch with modern conditions and situations in other parts of the world. We wish them to know the rudiments of modern science and to have a glimpse into the scientific achievements of to-day. All this means such a complex system of instruction as could not possibly be provided for in private homes. The function of the school, as Dewey says, is therefore to select the most essential things and to present them in *simplified forms* to the young. Everything in modern civilization and in the modern system of knowledge is not worth presentation in this manner. So schools eliminate as far as possible those features of the environment that are likely to do harm to the young and their mental and moral attitudes. By *selecting only the best features* of our complex environment we are in a position to strengthen the efforts of all those who strive for a better future society. A third function of the school is *to balance the various elements* in the social environment so that each individual may get an opportunity to escape the limitations of the social group in which he was born and to come into living contact with a broader environment. The intermingling in the school of the youth of different communities and different social traditions and different religious organisations creates for all a new, richer and more potential environment, the beneficial influence of which will be fully evident when they go out and become full citizens of the wider world. To perform well this three-fold function of the school it should have efficient and enthusiastic teachers who know their subjects well, have some knowledge of human nature, are acquainted with modern movements and trends of thoughts and events, and who are above all fired with an ideal of service.

The home and the school each tries to cater for the all-round progress of the young as much as is attainable

in any single institution. They want the young to be developed in their physical, social, intellectual, æsthetic and spiritual life. There are a number of other institutions which do not give equal attention to all these aspects but try to specialise in certain directions, though they do not thereby minimize the importance of other institutions and other departments of life.

Churches and other religious organisations for instance specialize in their efforts to bring the individual into personal relation with other religiously minded persons and to draw the attention of them all to the necessity of thinking of life not only in terms of time but of eternity, not only in terms of economic advantage but of ultimate spiritual values. They try to give the old and the young a definite spiritual environment by surrounding them with the ennobling influence of faith in the unseen but none the less real spiritual forces and in God the ultimate source "from whom all holy desires, all good counsels, and all just works do proceed."

The appeal of the public press is mostly though not exclusively to the cognitive aspect of life. It tries to stimulate the thoughts of its readers by giving them selected reading material and to influence their conduct by direct, and still more skilfully by subtle and indirect, suggestion. As effective as the news-sheets, and at times even more so, in forming and cultivating the views and tastes of readers are the advertisement pages of daily papers, monthly magazines and other periodicals. No wonder that the youth on account of their inexperience, keen receptiveness and readiness to apply in practical life the implications of new views and suggestions, are influenced by the press much more profoundly than the adults.

National and other public art galleries and museums tend to stimulate and satisfy the æsthetic nature of man. Occasional arts exhibitions also are helpful for the same purpose. Well-kept public parks and zoos have other educational values, but they can as well be made to serve an æsthetic purpose. Buildings are primarily for accommodating men and things, but

those with adequate financial means, whether they are Government or other public bodies or rich individuals, cannot be excused if they think only of utilitarian ends and do not consider the fact that the architecture of a country or a people is an indication of the level of its spiritual and artistic attainments.

When we think of the environmental conditions under which the young are educated we should particularly take into consideration their games and amusements, both in the school and outside. Provision for healthy, creative, self-expressive recreations should be one of the first concerns not only of all educational institutions but of all who guide and control public life. Amusements such as dramas, musical concerts and cinemas which are provided for the young and which they themselves do not produce have also not a little share in cultivating their tastes and forming their attitudes.

The Cinema has particularly become so ubiquitous and popular that a few more words about it may be allowed. There is much in the cinema that commends it as an educational means of a high order. It makes the distant and the abstract near and concrete. It makes things real much more effectively than the spoken word or the printed page. Again by its wide prevalence in all civilized and half-civilized countries of the world it tends to bring about a certain uniformity in modes of dress and social manners. Above all through its portrayal of those feelings and passions which have a universal appeal, the cinema has become a powerful means of introducing and strengthening international understanding and sympathy. But the film has its darker side, and very often it is that which makes it a justifiable target of virulent attack.

"Quite apart from the definite presentation of wrongdoing, the social dramas and the pictures of high life, with force as suitable as it is cumulative, stir the curiosity, heat the imagination and work upon the fantasies, of boys and girls of every age. They provide models and material for all-engrossing day-dreams ; and create a yearning for a life of gaiety, a craze for fun, frolic, and adventure, for personal admiration and for extravagant

self-display to a degree that is usually unwholesome and almost invariably unwise. It is most of all, in its treatment of the social relations between the opposite sexes that the effects of the film are most injurious. Nor are the ultimate effects confined to habits, thoughts and vice of a specifically sexual character. Here, once more, direct and immediate imitation is the rarer outcome. More frequently there is, first of all a furtive perplexity and mental conflict ; then, an intolerance of the strain ; and, finally, a burst of violence or adventure, which on the surface may have nothing whatever to do with sex, but is calculated to relieve the deeper tension, and to drown the hidden promptings, by some wave of desperation, more turbulent perhaps, but less ruinous and degrading."[1]

It is therefore in keeping with the responsibility of the State that it tries to exercise control over the cinema and all the other environmental factors we have considered above, through its laws and criminal codes and its hierarchy of officers who are entrusted with the faithful execution of these rules and regulations. The State itself thus becomes an environmental factor of the first order, with its laws and regulations, its power and resources to protect, encourage and support its law-abiding citizens and institutions, and its authority to restrain minor environmental factors from acting unfavourably on the young. It should therefore be the study of the State to see that the lives of its youth are not spent in unfavourable environments. For exactly the same reason that it establishes the school and endeavours to create an ideal environment there, it should try to clear away slums, uplift backward and rural communities, discourage child labour, arrange for medical examination of school children, and establish child clinics and juvenile courts for problem children and young delinquents.

This leads us to a question that is of utmost importance to students of education. Can environmental conditions well-directed and wisely applied make all young people behave in a socially efficient manner and develop in them noble sentiments and virtues ? Granted that a person has noble ancestry and that his surroundings are as wisely arranged as is possible in our imperfect world, is it certain that he will in course

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1. Ciril Burt *Young Delinquent*, Ch. IV.

of time develop into a noble citizen making the best of his own life and caring for the welfare of others? It is likely, but there is no guarantee that it should be so. For every human being is endowed with a will which is more or less free and with a capacity for self-determination. He is capable of forming his own purposes and ideals and of working for their realization. He not only acts in accordance with instinctive urges and makes adjustments to natural and social environments but is capable of thinking in terms of the internal world of values, of goodness, beauty and truth. In short he is an architect (though not with unlimited powers) of his own life and takes a leading part in making or marring it. The extreme eugenists and the extreme euthenists both fail to recognise the uniqueness of the individual. What Sir Percy Nunn says of the living organism in general is still more true of the human personality, " that it is a centre of creative energy which uses endowment and environment as the medium ; so that the elements it receives from nature and nurture do not themselves make it what it is, except in so far as they are the bases of the activity which is the essential fact of its existence."

Instances are not rare of ordinary men and women who starting with no unusual original endowments or special environmental advantages render remarkable services to their fellowmen. The secret of their achievements in most cases is that their personalities are made rich and radiant by high ideals of service and that they spend all their resources, material and spiritual, towards the realisation of the uplifting goal they set themselves. On the other hand there are born big men who make tragic failures of themselves—men who squander the wealth of their high intellectual and other special talents and fortunate social advantages, as they do not feel in them the pull of any great life-interest except that of eating and drinking and making the best of the sensuous world. These make themselves poor though nature intended them to be great, while the former transcend their natural and social limitations and make themselves indispensable to the world

through their toils and sacrifices. To such a group of obscure men who were beginning to have a glimpse of spiritual values, one of the greatest constructive geniuses of the world wrote : "Look at your own ranks, my brothers, not many wise men, not many leading men, not many of good birth have been called ! No, God has chosen what is foolish in the world to shame the wise, what is weak in the world to shame what is strong, what is mean and despised in the world, things which are not, to put down things that are." [1] That it is the essential nature of man to strive with his environment is clear not only from the lives of the great who war against their limitations and succeed, but even from the lives of those who fight and lose. Who will withhold sympathy and respect from those unfortunate but courageous persons who despite all their failures keep up the good fight, men and women movingly pictured to us by Stevenson as hailing from "all the world over, in every stage of history, under every abuse of error, under every circumstance of failure, without hope, without help, without thanks, still obscurely fighting the lost fight of virtue, still clinging in the brothel or on the scaffold, to some rag of honour, the poor jewel of their soul !" [2]

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Dewey	Democracy and Education, Ch. II.
Burt	The Young Delinquent, Chs. III & IV.
Adams	Evolution of Educational Theory, Ch. II.
Horne	Philosophy of Education, Chs. III & IV.
Howerth I. W.	The Art of Education, Chs. I & IX.
Rusk	Philosophical Bases of Education, Chs. III & IV.
Nunn	Education, Its Data and First Principles, Ch. IX.

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1. St. Paul *To the Corinthians I*, 1, 26-29.
2. R. L. Stevenson *Across the Plains*—Quoted by Ruskin in *Philosophical Bases of Education*, Ch. VI.

XII

THE BASIS OF INTELLIGENT ACTIVITY SENSE PERCEPTION

Until about thirty years ago psychology was mostly concerned with conscious mental processes ; and conscious life was analysed into its apparent elements of cognition, conation, and affect. Though to-day psychologists have begun to give due importance to such unconscious aspects of life as have been mentioned in the earlier chapters of this book (especially Chap. VIII), the problems relating to conscious process have not in any way grown less important. The old division, made by *Analytic Schools* of psychology, of mental activity into cognition, conation, and affect still holds good ; though it should always be borne in mind that these divisions are only abstractions which we make in order to have a clear idea of how life asserts itself, and that they are not isolated entities that somehow coalesce to make a mind-whole. Cognition itself can conveniently be treated as made up of sensation, perception and conception—though it is hard to say where sensation stops and perception begins, and where perception gives place to conception.

Sensation may be described as the immediate result of a sense organ being acted upon by a stimulus. The stimulus rouses to activity the nerve-ends in the sense organ, which pass on the impulse to the central nervous system. The central nervous system is concerned in helping the mind to find a meaning in the impulse, and we are thus able to take notice of the thing that served as a stimulus. If the original

impulse coursing to the central nervous system could by virtue of itself have enabled the person to take notice of the original object as a dog or a tree or a table, it could with some justification be held that there was a sensation of the dog, tree or table, as the case may be. But to notice the object, say, as a dog, the person must make use (no doubt unconsciously) of all his past experiences. Though now he has seen only a glimpse of an object, that object has been immediately associated with an animal that has four legs, runs after a monkey, barks at other dogs, and accompanies its master in his evening walks. In short, this one sensation has been associated with a number of other sensations, and all these sensations have together been grasped in the mind as one related whole, and the result is the perceiving of the object as a dog.

Thus we find that what is commonly called a sensation is not merely the stimulation of a sense organ, but a perception which is essentially a synthetic process. In order to show the intimate—and for all practical purposes inevitable—association between sensation and perception, we sometimes use the expression "sense perception", for not only is all perception directly or indirectly based on some sensory experience, but sensation itself into which some kind of mental activity or meaning does not enter, is hard to think of. An instance of meaning facilitating sensation is found in the noticeable difference in auditory keenness that we experience in theatres where our own mother-tongue is used and some other language which we but partly understand. In the latter we feel unable to hear many of the words uttered, while in the former we seem to hear everything without strain on the ears.

If sense perception is a synthetic process, it is as well an analytic process. Take for example the percept of the dog we have already referred to. When the object stimulates our different senses and we interpret the different impressions and perceive a dog we for the time exclude from our minds all those impressions that do not seem to hang together round

the object concerned. For instance if when we perceive a dog our ears are stimulated by the noise of a motor-horn or by the rustling of leaves in the wind, we do not respond to them. If we do, we automatically separate the two kinds of stimuli, and have different percepts of them. When we perceive an object, to that extent we dissociate our selective energy (attention) from all other objects. Our minds interpret or give a meaning to one set or pattern of things and tend to ignore all other stimulations or sense impressions that do not seem to belong to that particular scheme of things. The total field of sense-impression is so vast and complex that any meaning or sense of relationship—in short, any perception—is possible only by neglecting most of it and giving attention to certain objects or groups of objects (or patterns as they are called) at any one time. A remarkable example of the selective nature of sense perception is provided by the wild boy of Aveyron who heard instantly "if a nut were gently and cautiously plucked from a tree, or if the key of a door which kept him confined were quietly turned," but took no notice of "loud shouts or even pistol shots."[1]

If the mind with the help of the central nervous system had not given a meaning to the sense impression, the person would not have known the source of stimuli as a dog or a table, or any other living or lifeless object. Infants in the first few days of their life may have what may approximate to pure sensation, but in the case of grown up persons every sensation generally results in some perception. A concept marks a still higher phase in mental life. When we can think of not only our dog, our neighbour's dog and a hundred other dogs but also of a dog in general—when we can make generalizations of a dog in the abstract—we have the concept of a dog. About cognition at the conceptual stage we shall learn more in the chapters that follow. We shall now devote attention to the basis of all cognitive and intellectual life—sense perception.

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1. R. J. Fyne *Montessori and Her Inspirers*, Ch. II.

All sensations are derived physiologically, as we have already observed, through the sense organs. We are familiar with the list of five senses of sight, hearing, smell, taste and touch. The first two, and to a certain extent the third also, may be called long distance receptors. The eye may be compared to a delicate camera with a lens behind the pupil of the eye, an adjustable diaphragm called the iris, and a sensitive plate called the retina. The retina contains sense cells of two forms, rods and cones. Light from objects stimulates these cells, which pass on the impulse through the optic nerves to the brain. Here we have an experience of the stimulus, a sentience, which, as Spearman graphically points out, is not merely physiological but also mental. The inner ear is similarly stimulated by vibrations in the ear, which result in our experience of hearing. In the same way the nose is stimulated by gaseous substances in the air and the taste buds in the tongue are roused to activity by substances in solution, solid food being made tasty by being partly dissolved in saliva. The skin contains warmth and cold spots, pain spots, and touch spots ; and by their stimulation we get thermal sensations, pain, and the sensation of contact.

In addition to the sensations aroused by these commonly recognized five gate-ways of knowledge, are also to be mentioned the kinaesthetic and organic senses. The kinaesthetic sense (literally, sense of movement), variously known as the sixth sense or the muscle sense, is the source of feeling within muscles, tendons and joints, and " furnishes important information regarding weight of objects, their firmness or looseness, hardness or softness."[1] The capacity to maintain our postures, to judge the position of our limbs without the aid of our eyes, and to move and adjust the movements of the body, is dependent on the proper functioning of the kinaesthetic sense. In manipulations by the hand we exercise both the kinaesthetic sense and the sense of touch ; and in maintaining erect posi-

1. Woodworth *Psychology*, Ch. XV.

tions the labyrinth of the inner ear co-operates with the kinaesthetic sense. The giddy sensation one feels when one rapidly whirls round is due to the over-excitement of the inner ear. Organic sensations include hunger (caused by the rubbing together of the stomach walls), thirst, nausea, feeling of suffocation, and certain ill-defined bodily feelings which seem to originate in the digestive and other internal organs of the body.

If senses form thus, along with the nerves, the physiological basis of all physical well-being and of all growth of knowledge, it is no wonder that careful attention is given to their development. It is said that at birth most of the senses function very inadequately. Averill points out,[1] on the basis of painstaking experiments of Miss Shinn and others, that in the earliest days there is little sensitivity to light, that hearing is probably absent altogether for two or three days, that the sense of taste is but rudimentary, that smell develops even still more slowly, and that the temperature and pain aspects of touch function but vaguely. Things however change rapidly, and by the end of the first year the child lives in a world of sensation and spends most of his time exploring his own body and the outside world. In this work of exploration he is immensely helped by his ability to walk and by his newly acquired power of speech. As days go on, his acquaintance with the world widens and he gathers lots of useful information from his own observations and manipulations and from his contact with other persons. In the first few months he seems to find his greatest satisfaction from the exercise of the senses and muscles of his mouth which at birth "is the most acutely feeling and efficiently acting organ of the body."[2] Later he finds, as the psycho-analysts tell us, much satisfaction in the exercise of his excretory organs, and still later in the exercise of other parts and limbs of the body. All sensuous activities of infants and

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1. See Averill *Elementary Psychology for Teachers*, Lesson XXXII.
2. Merrel P. Middlemore in "*On the Bringing Up of Children*", edited by John Rickman, 1936.

children are doubly useful to them they are thereby enabled to add to their limited knowledge of the external world, and to find much emotional satisfaction in the process.

It is therefore the duty of all parents and teachers to give as much scope as possible to their children to exercise their sense of touch and smell, sight, hearing and taste ; to ramble about exploring "distant" space ; and to make contact with other children and with adults living in environments different from their own. The reported insistence on the part of the Nazi government that not only pupils but also teachers should have spent at least a term in the country is certainly a move in the right direction. Such an experience is valuable to teachers, but is particularly useful to children.

Colvin mentions a number of experiments made by experts in different countries towards the close of the last century to determine the range of perception in children, and they all arrive at almost the same conclusions that there is not much of pedagogic value the knowledge of which it is safe to assume at the outset of school life ; that the teacher who does not want to waste his efforts should seek to understand for himself the particular kinds of handicaps and limitations of experience that his pupils are subject to ; and that he should co-operate with the parents to make children acquainted with natural objects, especially with the sights and sounds of the neighbourhood of the school. This direct experience should begin with the given locality and neighbourhood of the school, but not end there. The wider the field of direct experience we can give to children, the better. Colvin quotes from Stanley Hall, one of the experimenters mentioned, the following passage which shows the high rate of ignorance of American children of the locality tested, which he thought would surprise most people "skeins and spools of thread were said to grow on the sheep's back or on bushes, stockings on trees, butter to come from butter cups, flour to be made of beans, oats to grow on oaks, bread to be swelled yeast, trees to be stuck in the ground by God and to be rootless, meat to be dug from the ground, and potatoes to

be picked from trees. Cheese is squeezed butter ; the cow says bow-wow ; the pig purrs or burrows While no one child has all these misconceptions, none are free from them and thus the liabilities are great that in this chaos of half-assimilated impressions, half right, half wrong, some lost link make utter nonsense or mere verbal cram of the most careful instruction." Indian children cannot be regarded as better informed generally than these American children referred to, and we too should therefore take those precautions mentioned earlier in this paragraph to extend the scope of the sense perception of the children. It is most desirable that children from rural areas be given chance of having direct acquaintance with facts of city life, and that children living in cities be taken out for an occasional stay in the country.

An occasional visit of children from the country side to towns or of town-children to the country, highly useful as it is, is not all that has to be provided to widen the sense experience of children. A number of things that they see once or even several times may not perhaps be noticed by them at all. The fact that they see objects a hundred times without acquiring consciousness of them suggests that we should draw at times the attention of children to significant facts or relationships in a given situation. This may sometimes be done by a talk or by appropriate questions by the teacher, or better still by encouraging children to ask questions. Let the children react in some efficient way to the situation, and the perception of the situation will thereby become clearer than when the situation is viewed with passive interest. If they know that later on they will have to tell us what they saw, or have to make a picture or sketch of it, they are sure to observe things better and to notice more things than they would otherwise.

Expectation and readiness on the part of the subject (the experiencer) tends to extend the scope of perception. This is why the thief in the proverb sees a policeman in every bush. For the same reason we find the expert in any subject seeing many more things in a given situation than the

uninitiated., The astronomer notices any strange phenomenon in the heavens much quicker and with greater fineness of discrimination than the layman who notices them only when they manifest gross deviations from the ordinary. What a difference in observation there is between the medical man and others who attend a patient ! Many facts and symptoms not noticed by even the closest friends of the patient are seen by the doctor. " It is obvious," as James points out, " that the things which a given experience will suggest to a man depend on his entire (psycho-physical) condition, his nature and stock of ideas, or in other words, his character, habits, memory, education, previous experience and momentary mood."[1] Charles Fox follows the lead of James and gives special attention to the expectations of the moment as affecting perception. He shows how consciously and unconsciously expectation affects perception. Unconscious expectation in the form of suggestion has already been referred to in Ch. VI. Conscious expectation of certain things to be presented or to take place leads to an ampler cognition of the situation. Fox experimented with two groups of University graduates, mostly honours men, who were shown lantern slides of a suit of armour and were then asked to note down all the things they observed. One of the groups was given lectures on the different parts of a suit of armour previously, and the other was not. In the result it was noticed that the " lecture group " did on the whole unmistakably better than the " non-lecture group." The experiment was repeated in different ways, and always the group that had previous experience did better than the unpractised group. The practised group knew what to look for, and this their pre-perception—" this anticipatory thinking of the thing to which we attend ", as James calls it[2]—enabled the subjects to ignore non-essentials and to introduce order into their observation. Educational institutions nowadays

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1. James *Text Book of Psychology*, Ch. XX. I have used the word psycho-physical where the Text gives *psychostatical.*

2. *Text Book of Psychology*, Ch. XIII.

arrange excursions to water falls, museums, mills, power-houses, workshops, and other places of interest and beauty spots. In order that they may be of maximum advantage to the young participants, teachers and others responsible will do well to spend a little time giving them some idea of what they should look for in their excursions.

There are not a few schools that place the greatest reliance on the method of talk and chalk, not to mention those which seem to grudge expenditure even on an abundant supply of chalk. In order however that instruction may be as fruitful as we can make it, it is necessary that as many senses as possible must be exercised. Though there is nothing to prevent a strong and lasting impression being made through but one of the sense organs, it is on the whole a clearer and fuller impression of an object that we get through the stimulation and co-ordination of different senses than if the same object were either only seen or heard or touched as the case may be. The little child often employs instinctively almost all his senses in his attempt to explore his surroundings. When he gets a toy he looks at it (sense of sight), rattles it (hearing), touches it (tactile sense), smells it (olfactory sense), puts it into his mouth to see how it tastes (gustatory), and tosses it up or tears it into pieces (muscle sense). In the schoolroom too we can copy the wisdom of the child we can give opportunity to children not only to read and write, but to handle, sketch, mould, manipulate and build.

There is another reason why the mind of the child must be appealed to through as many sense organs as possible. Our minds do not directly come into contact with any object. Our sense organs and the nerves running through them are stimulated by near or distant objects, and it is only through this stimulation of senses and nerves and not through any direct action of a universal mind that we apprehend things. It follows therefore that each person is living practically in his own world and not necessarily in a world which is identical with any other

person's. His conception of the world depends upon his own sense perception, and it may happen that any one or more of his senses may be defective. If in a classroom the teacher does most of his work through talk, those students who have a defective hearing badly suffer. 'I remember a boy who looked quite intelligent, but who often, when he stood up on being asked a question, used to stare confusedly or give an irrelevant answer. Later it was found that his hearing was poor. There are not a few who suffer much and are retarded in their progress on account of such defects of eye-sight as myopia, astigmatism, colour-blindness, etc. One sad aspect of it is, as Starch observes, that a great many children have sensory defects of which neither they themselves nor their parents and teachers are aware. These defects often become serious and remain as permanent handicaps. They not only affect progress in schools, but often "have far-reaching consequences upon a child's life as a whole through the production of headaches, nervousness and dislike for school work." What one sufferer writes about his misfortune in this respect may in essence be true of many others: "Books and school were to me a nightmare, a source of unutterable disgust. I drove myself to my tasks with the scourge of duty; I never took one moment's joy or pleasure in the acquisition of knowledge, unless it was the satisfaction of a task accomplished or conquest gained. I have no memory of a sense of pleasure connected with my studies at school or college. Verily, my school and college days would have been a joy to me had my ears and distant vision been my means of acquiring knowledge. I was nervous to the point of madness at times, and the more nervous I was the more diligent I became. Prolonged application to books would be followed often by sleeplessness, or violence in the field at play."[1] He discovered only much later that he had been suffering from hypermetropia or difficulty to see near objects. The worst of

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1. Dr. J. H. Clibmore quoted by Starch *Education Psychology*, Ch. IX.

such sensory defects is that sufferers being unable to cope with their studies and other duties and pleasurable occupations are likely to develop a sense of inferiority ; and this sense of inferiority may express itself in social ill-adjustments and give rise to behaviour problems.

Medical examination of pupils should be arranged for in all schools, and wherever there is any sensory defect or any diseased condition of such organs as teeth, tonsils, etc., it should be reported to parents. In this as in many other matters the school and the home can profitably co-operate. Many of the acquired sensory defects can be remedied, or at any rate their progress arrested—if they are noticed and attended to, especially so in the early stages. But there are numerous instances of congenital defects, where the organs function poorly from birth. That the education of children with even such handicaps is not impossible has been demonstrated by a few specialists hailing from different countries of Europe from the sixteenth century onwards. The most remarkable figures among them are Pereira, Itard and Seguin.

Pereira (1715-1780) was a Spanish Jew who in his boyhood migrated to France. From early manhood he was interested in the education of congenital deaf-mutes. He studied the works of others before him who had given patient attention to the subject, and improved on their methods. He not only made use of and extended the manual alphabet of his predecessors, but by his extensive study of human anatomy and physiology was able to teach his deaf-mute pupils to recognize sound vibrations and, by perceiving the vibrations, to reproduce the corresponding language sounds. He thus "practically made his pupils hear through the skin, and utter exactly what they so heard."[1] By this method of developing the sense of sight and touch, one of his deaf-mute students learned French literature, the mathematical and physical sciences and such foreign and classical languages as Italian, Latin and Hebrew.

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1. R. J. Fynee *Montessori and Her Inspirers*, Ch. I.

This remarkable achievement has to a certain extent been excelled in our days by Miss Helen Keller of America who, despite the treble affliction in early infancy of blindness, mutism and deafness, has still been so well educated (thanks to her own indomitable will and the sympathy and understanding of her friend and nurse Miss Sullivan) that she can now not only address public meetings but can also claim the authorship of several books, one of which is on *Optimism!*

Dr. Itard, an eminent French physician (1775-1838), was able to give some kind of a sense training to the famous wild boy of Aveyron, who had not only grown up in the forest but was also, as was later ascertained, an idiot with very little sensitivity.

That there is hope even for idiots if they are trained by experts who have both technical mastery and genuine patience and sympathy was amply proved by another Frenchman, Edouard Seguin (1812-1880), who for his apostolic zeal in the cause of education of children of the lowest intellectual equipment is reverently known as the Apostle of Idiots. Many of the pupils of Seguin had been so ill-developed mentally that even such elementary physical acts as walking, taking hold of things, and letting them go were not within the range of their ability. Such unfortunates however were helped to shift for themselves to some extent by Seguin, who devised special apparatus and instruments to remedy the physical defects and malformation that stood in the way of their educational progress. A beginning was first made with the simplest and lightest tasks. The use of tools and implements was gradually introduced with a view to facilitate motility. When a child made any progress in these exercises which presented both physical and intellectual problems, he was encouraged to do the same in the emulating company of others. Here aided by music and by example all forgot fear, enjoyed their tumbles, and performed charming little braveries. The spirit of the man is revealed in the beautiful quotation that Fynne makes in his most sympathetic study of Seguin and his work : " The girl who

begins to wipe the dishes, the boy who picks up the stones in the field, are above all helping to save themselves from the horrors of idiocy." "These children," says Seguin again "could not move of late, and to-day they are in their first well-earned perspiration ; do not let them catch cold, particularly in the moral sense."

The examples and writings of the two doctors, Itard and Seguin, inspired another medical practitioner—Madame Montessori of Rome—who like them started her educational enterprise with the training of the dull-minded and the idiot. Soon afterwards she took in hand the education of normal children and applied the same principles in their education also. As in the case of her inspirers Itard and Seguin (as also of their predecessor Pereira of whom Montessori perhaps did not know much) sense training is the corner stone in her system too. In emphasizing the rôle of the senses in education as well as in her insistence on freedom for the child she has done signal service in the field of education. If all educational psychologists do not agree with her in all her contentions it does not mean that these aspects we have mentioned are of little value. This granted, we shall refer to one important criticism that is made in connection with her doctrine of sense training.

Montessori believes that if children exercise their senses they will have a richer mental life, which all people admit. But it is doubtful, as her critics point out, as to how far they will be able to carry the benefit of this training to other fields of mental activity. If a child is able to make fine distinction in the matter of a colour-band, or in sorting different articles according to weight, it does not guarantee that he will be able to make accurate estimate of other people's motives and purposes, or that he will always discriminate in his taste and choices. People do not believe now, as they used to, in formal training or transfer of training. The doctrine of *Transfer of Training* has been subjected to much experimental testing by James, Thorndike and many others. When the field of practice and the new situation are alike in certain elements, there is a certain

amount of gain in practice in the new sphere. But this gain is due more to the common elements in the two situations, rather than to any improvement in the general capacity of the mind. The keeping in view of and the striving after an ideal in the two situations also leads to some gain in the new situation. Apart from these things, psychologists do not find it possible to assert that the training of the senses leads to general intellectual development.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Woodworth	Psychology A Study of Mental Life, Chs. XIII and XIV.
Fox	Educational Psychology, Ch. VIII.
Colvin	Learning Process, Chs. V and VI.
Fynne R. J.	Montessori and Her Inspirers—at least one of the first four Chapters.
Starch	Educational Psychology, Chs. IX and X.
McDougall	Outline of Psychology, Ch. VIII.
Sturt and Oakden	Modern Psychology and Education, Ch. X.
Drever	Introduction to Educational Psychology, Ch. X.
Sandiford	Educational Psychology, Ch. XIV.
Woodburne	Human Nature and Education, Ch. XIII.

XIII

IMAGINATION AND DAYDREAMS

The apprehension of an object that makes an impression on us through our senses is known as perception. But we are able to apprehend things that are not physically present before us ; and such things as are not immediately present but nevertheless present a picture before our minds are said to be imaged by us. We do not directly perceive them but have an image of them in our minds. Unlike percepts which are primarily occasioned by external stimuli, images are brought about by internal excitations. Though the image often involves the same adjustments of the sense organs as in sense perception, the image-experiences are not generally so clear and definite as percepts. They are able, however, to start an activity as well as percepts. For instance, the image of a tamarind fruit leads to a free secretion of saliva in most persons who have tasted that acid fruit. The image of a dear friend in distress leads a person to do something on his behalf. The close connection between percepts and images is also noticeable in the fact that all images are ultimately based on previous sense experiences. It is very doubtful, for example, whether a man born blind has any visual images, or a born deaf has any sound images.

Persons vary remarkably in the kind of mental images they usually possess. Some are said to be visiles or "eye-minded", and some audible or "ear-minded" it is even supposed that there are people whose mental images are predominantly of the motile, tactile, or olfactory (smell) type. Whatever may be said of the view that there are persons whose men-

tal images are pre-eminently of the three types mentioned last there does not seem to be much doubt that some persons are more visiles than they are audibles, while some are better served by images of sounds than by visual pictures. These latter "seem to hear again the sounds accompanying the original experience ; the voices of their friends sound in their ears, the past speaks to them its messages, they learn better what they hear than what they read ; duty seems to call to them, and the cry for help reaches their ears from afar."[1] Cyril Burt believes that he belongs to the audible type ; he can enjoy a mental concert at his fireside by simply opening an orchestral score, and what is more—if he picks up a book by his former tutor, who had an impediment in his speech, it takes him ten times as long to read each page, because he hears his tutor's voice stuttering at every *p* and *t*. Cyril Burt knows a professor who belongs to the visile type, who "jots down the notes for his lectures on the back of a long envelope, and usually loses the slip ; but he has only to look up at the ceiling, and he sees all his headings arranged in order on the whitewash, like the message on the wall at Belshazzar's feast !"[2]

Few persons however belong to any one type exclusively. Most individuals, when they think of a past situation, seem to have mental pictures of the things seen, but when they try to recall the whole situation, they seem to experience other images as well. Let us think of a dinner party we attended. Many of us, perhaps a majority, see once again the guests coming one after the other, and the way they were seated can be visualized ; they also seem to hear again the music rendered on the occasion ; when we think of the dishes served we get gustatory and olfactory (taste and smell) images ; if on the occasion we happened to help the host to remove some piece of furniture that happened to come in the way we may have a kinaesthetic image of the occurrence. Each person

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1. H. H. Horne *Psychological Principles of Education*, Ch. XI.
2. Cyril Burt in *How the Mind Works*, by Cyril Burt and others, Ch. II.

may thus belong, to some extent, to all the types, tending to recall things according to the dominant sense-experience of the occasion. To most people the image of a bell is somewhat auditory, of a painting somewhat visual, of velvet somewhat tactile, and of a druggist's shop somewhat olfactory, though it need not at the same time be denied that many persons predominantly belong to one type rather than another.

Though it cannot always be presumed that the adult with the largest number of images in his mind is better equipped for life's vicissitudes than the one who has fewer images, and though it may even be granted that some times a plenitude of images may even hamper the work of rational thought-processes which are often carried on with symbols rather than with direct images, we should yet recognize that images form the chief stock-in-trade of the mental life of children. They should, therefore, be helped to form a wealth of mental images, their intellectual progress being a good deal dependent on their forming numerous mental pictures of all relevant aspects of life. This is effected not so much by devoting any special effort to train children in "cultivating" images as by giving them plenty of occasions to extend their sense-experiences, as indicated in the last chapter.

Distinction is made in psychology between imagery and imagination, though both are derived from the same etymological source, from which we also get the verbs to image or to imagine. Imagery may be said to refer to the content and imagination to the process of ideal representation. Imagery is made up of an incident—more often a group of incidents—that makes one picture before the mind ; whereas we use the word imagination for the capacity to form or manipulate new pictures by combining in the mind elements from different scenes and experiences. Imagery is taken to be of a more or less passive nature, while imagination is used for a more creative and therefore much more active process. When we want to speak of the mind entertaining certain pictures or *re-presentations*, and

not of the active manipulating of new patterns, we preferably speak of *imaging* them, or having images of them rather than *imagining* them. Convenient as the distinction is, we should bear in mind that this is more a distinction in degree than of kind ; for normally, there is an element of creation in even mental recall, and the higher processes of creative imagination often —though not inevitably—employ mental pictures or imagery.

When imagination is exercised in the recall of past events it is hardly different from what we usually call memory—a subject we pursue at some length later, (see Ch. XVII). Here we shall merely note the fact that whether we think of imagination as reproduction or production, we think of it not as a special ability of the mind which has any separate or distinct existence of its own by virtue of which we recall or create things, but only as *one activity of the mind as a whole.* We shall again have occasion to speak of other aspects of the organism such as thinking, attention, will, etc. When we speak about them too we do not think of them as distinct and self-existing entities but as aspects of the mind, or better still, of the organism as a whole. It is the whole organism—and not any part of it—that imagines, just as it is the whole organism that attends or thinks or wills, as the case may be. The man in the street calls them faculties, and conveniently he may, *provided* he does not jump to the conclusion that the organism or the mind is made up of a number of independent or semi-independent faculties that somehow combine to make a whole which we call a man or his mind. The differentiations we have mentioned are hypostatizations made with a view to understanding the organism better and more intimately—but they do not have independent existences.

Every one requires imagination, and every individual who is capable of sustained thinking is using imagination whether he knows it or not. The man who adjusts his behaviour according to the occasion, the teacher who anticipates the difficulty of his pupils without their mentioning it, the police officer who puts together different bits of evidence to prove his case, the

politician who seeks to please his constituency, the mad-man who "sees more devils than vast hell can hold," and the poet whose eye

> in a fine frenzy rolling,
> Doth glance from heaven to earth, from earth to heaven,
> And, as imagination bodies forth
> The forms of things unknown, ——
> Turns them to shapes, and gives to airy nothing
> A local habitation and a name.

—all these regularly exercise imagination. As a matter of fact the more eventful and glorious the work one has to do, the greater is his need of imagination.

No one is able to accomplish any thing great unless before setting his hand to do it he lets his imagination play on it. The man of ambition goes over his projects several times in his mind before he begins to execute them. No one suddenly attains to saintliness and no one suddenly falls into moral degradation. Before an overt step is taken, the noble or ignoble act has several times been performed in one's fancy. The great general several times arranges and re-arranges his forces in imagination and anticipates his enemy's movements before he takes the field. The business magnate is likely to make stupendous mistakes unless he studies carefully the possible risks and the vicissitudes of the market. Imagination plays an important rôle in all practical life.

Corporate human life is impossible without social imagination. If we do not understand what goes on in the minds of others we are likely to make gross mistakes in our relations with them. We get some idea of what takes place in the minds of others by observing their behaviour ; but it would not have been possible for us to interpret their behaviour unless we knew that they also have the same kinds of feelings, wants, urges and aspirations that we possess. It is through imagination aided by the introspection of our own inner life that we understand what passes through the minds of others. Even persons of

good intentions find it hard to get on pleasantly and happily with others unless they possess an adequate social imagination. On the other hand those who imagine the inner state of others find it possible to share their thoughts and feelings. They experience the give-and-take of joyful friendship with their fellow-men to a degree unattainable by their less imaginative neighbours. Social imagination leads thus to the enrichment and winsomeness of personality.

The make-believe games of little children where they seriously pretend that they are any kind of moving things, animate or inanimate, such as a motor-car or a train or a cow or a goat or father or mother, and the dramatizing activities of elder children, are highly useful in that they give a chance to the actors to identify themselves with things and persons outside their own lives. As a poet puts it into the mouth of a child :—

Tinker, Tailor,
Soldier, Sailor,
Rich man, Poor Man,
Ploughboy,
Thief—
And what about a Cowboy,
Policeman, Jailor,
Engine-driver,
Or Pirate Chief ?
What about a Postman—or a Keeper at the Zoo ?
What about the Circus Man who lets the people through ?
And the man who takes the pennies for the roundabouts and swings ?
Or the man who plays the organ, and the other man who sings ?
What about a Conjurer with rabbits in his pockets ?
What about a Rocket Man who's always making rockets ?
Oh, there's such a lot of things to do and such a lot to be
That there's always lots of cherries on my little cherry tree ! *

Children project themselves into the characters, human or subhuman that they imagine themselves to be ; and get an internal view unconsciously though

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1. A. A. Milne *Cherry Stones,* (*The Times of India,* Juniors' Corner, 25-8-'38).

it is of their thoughts and passions. A child of about four years once saw a small chicken in a dying condition and cried out in tears, "Please now get its mother —let her have a look!" He was projecting himself into the mother-hen and describing her feelings—as he understood them —from within. This process of feeling *into* the object, where the observer identifies himself with the thing observed is sometimes called *empathy,* as distinct from sympathy where we feel *with* others. Perhaps the interest that even grown-ups take in a huge mountain, or a rocket that flies through the stratosphere, or any other natural or man-made object of fascination is partly due to an unconscious desire on their part to transcend the limitations that circumscribe them and keep them always small, helpless and bound. We look at the vast ocean or the high-flying eagle or the mighty electric power-station, enjoy their power and splendour, have empathy, and feel some satisfaction, as though through them we have asserted something of our freedom from irksome restrictions. Thus even grown-ups have not outgrown this spirit of empathy and identification, though we are too sophisticated to admit it to ourselves. Children however glory in their freedom to be what they wish. Without this unrestricted, unabashed and to a great extent unconscious identifications with external things, living and life-less, practised in our childhood, our lives would have been still more relentlessly imprisoned than is the case at present in the narrow shells of our individual selves.

"As a man thinks, so he is" said the ancient Hebrews. This is true both in the physical and in the psychic life. One of the effective ways of falling ill is to imagine that one has something seriously wrong in his physical system and to frequently brood over it. Very often the conscious will is unable to contend on equal terms with the suggestions made by imagination. That is how Emile Couè and the philosophical exponent of his ideas, Baudouin, say that when the will and the imagination are at conflict the latter always wins. What Couè and Baudouin mean by imagination is *the whole mind* dwelling

on a certain line of actions or a state of affairs. If the whole mind—the unconscious part as well as the conscious—desires a certain state or a certain line of actions, that desire tends to be realized. For instance, when a man persistently tells himself that he cannot do a certain thing well he is not able to do it satisfactorily even if he occasionally makes a voluntary effort to do so. In order that the thing may be possible the man should believe himself able to do it—his imagination must dwell on his ability to do it. "He can who thinks he can,"—but that thinking must be of the whole man. If a person's imagination is at war with his will he cannot devote "concentrated attention" to what he consciously desires to do. If a man harbours evil thoughts in his mind whenever he is not particularly busy, he has no right to feel surprised when his spasmodic effort to be noble-minded is found to be an up-hill task. This is why one of the most creative thinkers of the world says

> "Whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report; if there be any virtue, if there be any praise, think on these things." [1]

Imagination is often coloured by the emotional experience of the subject. When a man is joyful, say after a game of tennis where he has defeated in a stiff fight a strong opponent, he is inclined to recall happy incidents of the past, and his plans for the future whether they are well formed or are still in the nebulous stage of mere fancy have a note of optimism about them; while the same man is likely, after an experience of defeat and disappointment, to dwell on the things he has not and is likely not to have, rather than on the good things with which he has actually been endowed. Ideas are as it were linked together by laws of association such as similarity, contrast, and contiguity but the dynamic activity that brings ideas and images together from distant times and scenes is not

1. St. Paul *Letter to the Philippians* iv 8.

rarely the common emotional tone. Daydreams and the more creative mental efforts are all affected by the prevailing emotional tone.

Daydreams are different from memory images in that the latter are mostly reproductions of past experiences while daydreams "typically look toward the future, as if planning for possible action ; only, it is not a serious plan—which would be controlled imagination—nor necessarily a plan which could work in real life, but merely play of imagination." Woodworth classifies most of our daydreams under three convenient types the conquering hero type, the suffering hero type, and the worry type. All daydreams have a hero and the hero is mostly the dreamer himself or some one with whom the dreamer identifies himself (or herself, as in the case of the mother who centres all her daydreams round her son). The story of the milkmaid who dreamt of wonderful business transactions arising from her humble routine work—from selling milk she passed on to the keeping of poultry, from there to still bigger and bigger business, until at last she became the richest damsel in the whole realm—appears in different forms in different countries and languages of the world, and bears testimony to the ubiquitous existence of *the conquering hero type*. What we cannot be in real life we would at least be in our imagination. A sickly man thinks in his daydreams of the wonderful physical feats he would accomplish, feats that would strike the world dumb with wonder ! If however a person cannot win distinction by the things that he can accomplish, he can at least draw the attention of the world to himself by the number of things he is made to suffer —*the suffering hero type*. This is the unconscious motive that inclines a person who is in pitiable and harrowing situations to say to himself in self-pity "I may be defeated and discomfited, but I can satisfy myself with the exposure of the wickedness of my adversaries and the heartlessness of circumstances which would make all sensible people sympathize with me in my great distress." *The worry type* of daydreams is entertained by us when we can do nothing ef-

fective to relieve ourselves of a painful situation. "It is a substitute for real action when no real action is possible." The patient's relatives begin to worry about his life not when they give him the best medical help and he improves under the treatment, but when they find that all that they could do for him does not help him and that they cannot do anything more.

In dreams too, as in daydreams, imagination is active and creates new forms and new combinations of pictures. We have already found (see p. 94 f.) that wishes are expressed in dreams. But the wishes expressed are not easily recognized by those uninitiated in the interpretation of dreams ; for the *latent* or real content of the dream is very often different from the *manifest* content (or events as actually portrayed in the dream). "Lack of surprise, absence of all remorse or repentance for immoral actions we commit in dreams, indifference in the face of events which should afflict us deeply"[1]—these are some of the characteristics of dream activity. It does not however follow that dreams are of no consequence. Both dreams and daydreams, the latter more or less clearly and the former in more obscure and mystifying a fashion, give us insight into a person's inner life. Both kinds of dreams, daydreams and dreams of sleep, give expression to views and desires that are not allowed free scope in real life. In real life our plans and schemes are checked and controlled by the necessity to take into account external objective circumstances, the opinions and points of view of other people, and our own reason and sense of propriety. In the mental activity of dreams and daydreams we are not any way hampered by these considerations. Of the two, however, the teacher is necessarily much more interested in the daydream, and to this we shall give some more attention. The study and analysis of ordinary dreams is not in the province of the teacher but of psycho-analysts (psychologists who have specialized in

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1. Rignano *Psychology of Reasoning*, Ch. XIII, p. 299, Holl's Trans., Kegan Paul, 1923.

this branch) and of psychiatrists or medical men who have been specially trained in the treatment of mental diseases. Those of the readers however who care to have some further idea of the significance of dreams are recommended to refer to the points mentioned in the tabular scheme of the various forms of imagination given on p. 166.

A moderate entertainment of daydreams is a normal experience not only for children but for many adults as well. The children whose imagination is keen have vivid daydreams, and adolescence is particularly rich in them. The real danger of daydreams is that those who inordinately indulge in them are apt to be satisfied with their imaginary achievements and may fail to make proper adjustments to real situations. They are a positive trouble to children if they are unable to distinguish between falsehood and truth in real life. The statements of children may be perfectly true as far as their fancy-experience is concerned, but they should be able to understand the distinction between their fancy and real life. The daydreams of children even when they are over-active are not however as serious a source of danger as the regressive daydreams of adults. The little child may outgrow his exuberant daydreams, but when a grown-up person retires into them it is an actual retreat from reality, and deserves the careful attention of his friends. In more serious cases, skilled mental experts have to be consulted.

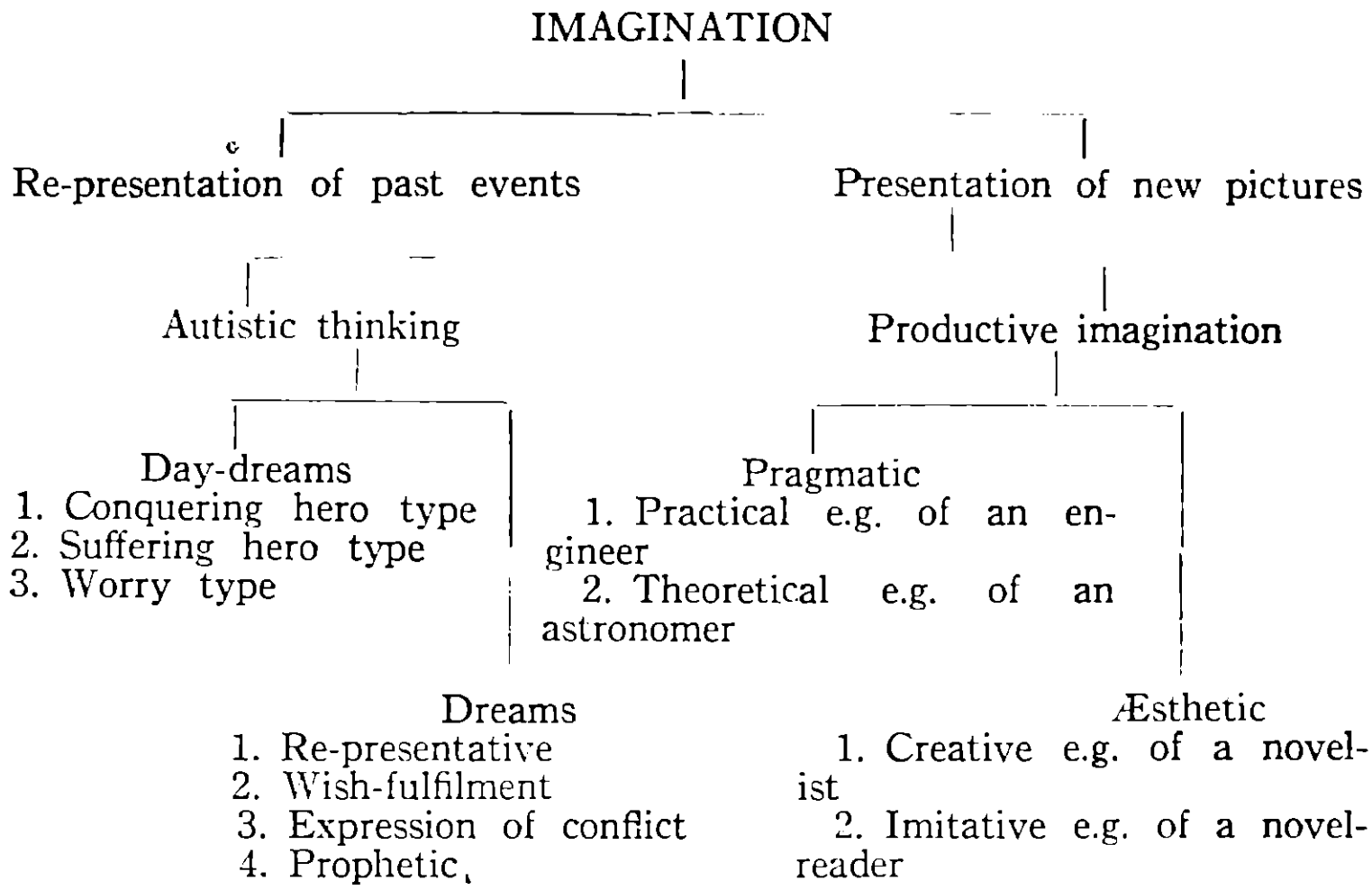
Both daydreams and dreams may be said to belong to what is sometimes called autistic thinking or phantasy thinking. In autistic thinking, conclusions are arrived at from very imperfect premises. "Things are considered to be identical or to be in the relation of cause and effect simply because they happen to be associated together in the mind."[1] A

1. See E. S. Conklin *Principles of Abnormal Psychology*, Ch. X., p. 229. (George Allen and Unwin, 1928.)

peasant from round about Poona once said to the late Sir Narayan Chandavarkar that as soon as "Tilak Maharaj" set his foot in England the world-war came to an end, and the listener said, "As soon as Tilak Maharaj set his foot back in India the world-epidemic of influenza started!"

Real productive works of imagination, whether of the pragmatic or æsthetic kind, however much they may differ in other matters, are alike in this—that they are based on wider experience and obey more effectively the principle of self-consistency. Unlike daydreams and autistic thinking in general, works of productive imagination of both kinds are subject to criticism both by the author of the works himself and by others.

How then does pragmatic imagination differ from æsthetic imagination? First of all there is an important difference of purpose. Pragmatic imagination is employed for utilitarian purposes, while the chief purpose of æsthetic imagination is that it should give pleasure. Pragmatic imagination—the imagination necessary for the man of affairs such as the business man, the lawyer, the administrator, the engineer, etc.—may and often does give pleasure, but its chief purpose is that it should help us to meet the problems of work-a-day life. Pragmatic imagination is, as Drever points out, (a) practical, as that of an administrator or of an engineer, or (b) theoretical, as that of a scientist or a philosopher whose interest is more in understanding things than in actual doing. Æsthetic imagination gives us pleasure or makes our feelings joyful. It is necessary both for the production and for the enjoyment of all beautiful things and of all works of art and may therefore be said to be of two kinds (a) creative, as that of the poet or the novelist, and (b) receptive or imitative, as that of the reader who *re*-creates passively the situations created by the active imagination of the author.



As a natural consequence of this difference in the purpose of the two kinds of productive imagination, pragmatic and æsthetic, there is an important difference in the test applied to the efficiency of either kind also. Pragmatic imagination, however much pleasure it may yield to the individual in the process, is judged by the practical results achieved. " It involves congruity with the conditions of real existence, which are conditions independent of the individual, to which his activity must adapt itself." On the other hand, the constructive activity of æsthetic imagination " is essentially free. Consistency and congruity with certain conditions may be demanded, in order that the aim or the aims may be attained, but the conditions are in general self-imposed, and are felt self-imposed."[1]

Pragmatic imagination is involved to a certain extent in all rational thinking, to which we devote attention in the next chapter. Let us now see what place æsthetic imagination has in schools. The problem is twofold—of æsthetic creation and æsthetic appreciation. Works of art cannot be

1. Drever *Psychology of Education*, Ch. X, p. 193.

made to order, and each boy or girl attending a school cannot be turned into an artist. Still it must be admitted that creative imagination is not such a rare thing as it is sometimes believed to be. We have referred to the daydreams of children, and daydreams are works of creation. In passing from scene to scene in the daydream the child may occasionally be encouraged to pause for a while to retell his daydream as a connected story, and he may perhaps be able to give a presentable story. In writing stories in or for the class too, children may sometimes be encouraged to write their own stories rather than follow the lead either of a book or of the teacher or of one of their own class-mates. The following is the translation of a story told to the writer by its proud author—a child of eight years—in his mother-tongue.

Once the king of a country died and they cast lots to see who should be the next king. The lot fell on a poor Brahmin, who eventually became king and a good ruler of his people. The king had a young son. Once the prince was out walking, and he saw a poor frog away from water and about to die. The prince had pity on it and took it to a river. The frog was grateful and hoped that he might some time be able to do a good turn to the prince. He laughed at the idea. Another day the prince was out hunting. He saw a hare and was about to shoot it down when it said "Please spare my life, and I may be of service to you." The prince did not care for the hare's help, but he still took pity and let it go. In course of time the king died, and the prince became king. The young king heard of a pretty princess and wanted to marry her. But she put two conditions she had lost a garland in the river and it must be found, and she had heard of a certain precious stone somewhere in the earth and it must be brought to her. The prince was sad and did not know how to please the princess. One day the frog saw the young king and asked him why he was sad. He was unwilling to tell the frog; still in the end he told the story. The frog at once dived into the river and brought him the garland. The prince had some hope but again he grew sad, as he did not know where the precious stone was. Then the hare saw him and asked him why he was sad. The prince was unwilling to tell the hare; still in the end he told him the story. The hare went into a cave and brought out the stone. The king was happy, he gave the princess the garland and the stone, and they were married.

Similarly children may be encouraged to draw and to compose songs and verses. The most important help that the teacher, the parent, or the senior friend can give is to appreciate the efforts of the young artists. With encouragement children will go on producing and in course of time they will master technique too. There is no doubt that for creation of the most beautiful forms mastery over technique is highly necessary. But no aspiring little artist should be deterred in the beginning for want of technical skill. The urge to create and the keenness for self-expression is more essential in the beginning of an artist's career—as a matter of fact it is so later too—than any technical knowledge.

Not only the creation of beautiful things but even the appreciation of beauty in art and nature by the young is affected by the attitude of the teacher. The teacher who does not himself appreciate beauty cannot inspire others with the joy of a thing of beauty. If he delights in the presence of beautiful things and tries to share his joy with his little friends they will be encouraged to take interest in music, painting and drawing, poetry, drama and other forms of art. The wise teacher knows the limitations of his children too, and never forces his views and attitudes on them. The fine discrimination of the grown up lover of art is naturally not in the power of the little ones, neither is a complete intellectual apprehension of a situation a necessary condition of æsthetic appreciation. Critical interpretation and analytic study are certainly not useless but they must always be regarded as only means for deepening appreciation. While appreciation is in progress the minds of pupils are likely to be distracted by comments and by study of isolated facts.[1]

Imagination in all its stages is to a great extent dependent on past experience. Reproductive imagination as the term it-

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1. See H. Jagger *Poetry in School,* Chap. V.

self indicates is dependent on it. So also is productive imagination. This is why we sometimes find novelists touring over distant places to get first hand knowledge of the men and places they intend to refer to in their works. For the true basis of imagination, as Madame Montessori puts it, is reality ; and the more perfect the approximation to truth, the more perfect is the art. " This does not mean that art is only a mere copy of what any casual observer happens to see round him. It is reality *as the artist sees* that he makes use of in his creative works."[1]

Madame Montessori seems however, as we have already noticed (Ch. VII), to have carried her passion for reality a little too far in her attitude towards fairy stories. She has no faith in their usefulness and is definitely dissatisfied with their wide popularity. She says that when she is told that a child no longer believes in fairy stories she rejoices. " We say then He is no longer a baby." Her fear is that fairy stories make children credulous. To help children delight in fables and fairy stories because this delight is natural to them is, according to her, like " compressing the gums of babies to prevent the teeth from coming out, because it is characteristic of babies to be toothless."[2] One may then naturally retort that if fairy stories can make children credulous, the more serious artistic types of work which she praises as " the vast treasures of art, scattered almost like crumbs of gold wherever the intelligence had time to mature in peace " should also be taboo, for they also often contain situations and scenes which never existed except in the imagination of the artists. Fairy stories may be called daydreams of the race, and daydreams are not all harmful except when the distinction between fancy and reality is ignored. Neither the child nor the grown-up person lives

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1. *Advanced Montessori Method,* Ch. IX, p. 251. (Italics not in the original.)

2. *Advanced Montessori Method,* p. 262.

by bread alone, nor is the method of positive science, as Dr. Montessori has a tendency to suggest, the only "formative method of the new generation."

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Drever	Educational Psychology, Ch. X, Pp. 189-200.
Montessori	Advanced Montessori Method, Ch. IX, Pp. 231-272.
Burt & Others	How the Mind Works, Ch. II.
Woodworth	Psychology, Ch. XVIII.
Fox	Educational Psychology, Ch. IV.
Colvin	Learning Process, Chs. VII and VIII.
Green	Psycho-Analysis in the Classroom, Chs. II, III, V
Lee	Play in Education, Chs. XIII, XVII, XXXV.
J. J. B. Morgan	Psychology of the Unadjusted School Child, Ch. VII.

XIV

REFLECTIVE THINKING

Sense-perception is possible only when objects are present, i.e., when they make an impression on us through any of our senses. A higher grade of mental life is indicated by the capacity to form ideas, to form mental pictures of things when the things themselves are not present to the senses. This is sometimes called a mental activity of *the ideational level,* and is further differentiated from activities of *the rational level,* at which level we reflect, form judgments, and reason. In a wider sense rational thinking may be said to be an aspect of pragmatic imagination, for when we reason and solve problems we exercise our creative imagination in following a certain line of thought or action in preference to all others that may present themselves for our acceptance. At the same time we do well to remind ourselves of the fact we have already noticed that the distinction between perception and the higher thought processes, useful as it is, is not an indication of any clear-cut difference between one process and another and that the transition from one stage to the next higher is so gradual that we cannot definitely say where or when one ceases to function and the other begins. In all perception our general notions and ideas—our classified experiences—are pressed into service, and even in the most abstract thinking we have ultimately to depend on sense-experiences.

Reflective thinking or mental activity of the rational level arises when we are confronted with some kind of a doubt or perplexity. When we can re-act to a situation instinctively or

by force of habit and there is nothing to prevent our instinctive or habitual reaction to the situation, need for reflection does not arise and we do not *think* in the usual sense of the word. If on the other hand, there is an obstacle for this natural or customary reaction, we pause and think. When we go by a familiar road to any place we do not think as to whether we are on the right track or not. But if the route is not quite familiar and we come to a branching of the main road, we stop to think as to which of the two branches we should follow. All thinking arises in what Dewey calls a *forked-road situation*—a situation that presents a dilemma, an ambiguity, a possibility of alternative courses out of which one should be preferred. Reflective thinking is purposeful, and is directed toward a definite end ; but the means of reaching that end is a matter of choice, of selection out of two or more alternative courses. As long as our line of action is clear and unimpeded, or as long as our fancies have free and unrestricted scope to run on their own lines, there is no demand for reflection. Reflection arises when there is need to find solution for a situation that occasions a doubt, perplexity or puzzle.

" Reflection " in other words is in the nature of a mental experiment. While these pages were first in print, I bought same tomatoes from a villager on his way to the market, and I owed him four annas. I gave him a rupee and asked him to give twelve annas back. But he was not quite convinced. He took the rupee, gave me sixteen annas, and said " Give me now four annas." Only when I had given him the four annas back was he convinced that the deal was in order. The counting and the calculation, totally different as they appear at first sight, differ, as Rignano observes on a similar situation, only in that the villager " found it necessary actually to perform all the operations of counting whereas I had performed them mentally, because I knew the final result experimentally." Or to take another example, I find that I have not my pen with me. I wonder whether I left it in the college or whether I have misplaced it somewhere in my house. Then I remember that I signed in the

drawing room the Lesson Notes of a teacher-under-training who had come to my house for the purpose, and that I did not do any writing work afterwards. I go to that room and find the pen on the table. It was not necessary for me to go to the college or even to go to the next room in the house to have arrived at the conclusion that the pen must be in the drawing room. The going there was done as it were experimentally. In the same way, in solving riddles, in games like chess where much reflective effort is necessary, and in meeting difficult life situations we make use of reflective thinking or reasoning which, as Rignano defines it, consists of "a series of operations or experiments that we imagine performed on one or several objects in which we are particularly interested, and that we do not perform actually because by a series of similar experiments which have been actually accomplished in the past, we already know their respective results." [1]

We shall now consider *the process of reasoning*. The first step in the process is the cognition of the problem to be solved. This may appear quite self-evident, but there are not a few persons who seem to proceed to find solutions of difficulties before they *realize what the difficulty actually* One of the perennial remarks of examiners who evaluate the answer books of candidates in examinations is that the latter do not always seem to envisage the purport of a question before they begin to answer it. Examiners too are not perhaps guiltless in the matter as it not rarely happens that they themselves are not quite sure what they wish to examine ; for, they often seem to ignore the fact that the same question cannot at once be an ideal one for the purpose of testing knowledge of subject-matter, skill in presentation, originality, and flawlessness of language. The first step in solving a problem, in doing any piece of work which involves reflective thinking, is to be definitely aware of the task in hand, to find out the true nature of the problem. In doing this, it is helpful to

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* Rignano *Psychology of Reasoning*, Ch. IV, p. 81. Holl's Translation.

analyse the given situation into simpler units. The problem-solver must observe the details of the situation by using his senses and by recollecting observations he himself or others in similar situations made in the past. In this way he is able to take stock of all conditions. Some of the conditions may be obstacles, some may be aids, and a great many may be of neutral value. Whatever their value, they have *to be reckoned with according to their importance.*

When the data are thus carefully observed and classified, there arise diverse—and sometimes conflicting—suggestions of possible lines of action. These *alternative suggestions* are considered and their relative merits discussed in the mind. The efficient thinker does not immediately follow the first suggestion that offers itself but turns again to the facts so that he may be able to *make fuller observations,* with the help of which he tentatively arrives at a certain way out of the perplexing situation. This is technically known as the *formulation of a hypothesis.* The formulated hypothesis is again *subjected to various tests* and if it can stand these tests it is accepted as the solution of the problem which started the reflective process.

These different stages in a reasoning process—a perplexity, intellectualization of the situation, classification of data, diverse suggestions to get over the felt difficulty, formulation of a hypothesis, verification of the hypothesis, and the final solution—need not, as Dewey well observes, follow one another in a set order.[1] The formulation of a hypothesis, for instance, may occur at any intermediate stage. Again in what we call *intuition,* the final situation may as it were be immediately arrived at, being the result of spontaneous and sudden observation or recognition of some fact or relation which hitherto, as Rignano says, has been neither observed nor suspected. "This realization happens suddenly at a given moment,

1. Dewey *How We Think,* Ch. VII.

although in the external circumstances nothing has changed."[1]

Reasoning thus is problem-solving, and is useful for the overcoming of practical difficulties in life. It is made use of for other purposes also. For instance a kind of reasoning is employed by those who try to use what the psycho-analysts call the mechanism of " rationalization." We do things often without deliberation. We do them by force of innate impulses. But we still try to give a respectable reason for our impulsive conduct in order that it may appear justifiable to others and that our own conscious sense of propriety may be satisfied. Reasoning is resorted to also when we try to explain the behaviour of other persons. It is highly helpful to us in predicting natural events and the probable attitudes and behaviour of our fellowmen. Again, reasoning is an inevitable necessity if we want to verify the unusual or unconventional assertions of others.

We often employ two different methods of reasoning—the deductive and the inductive. In the former we apply accepted general principles to particular instances. For instance we know that the farther we go to the north or the south of the equator, the colder it becomes. We also know that Karachi is farther away from the equator than Madras. From these two premises we deduce that Karachi is cooler than Madras. These two methods are not however so distinct as we may sometimes take them to be. For instance, how do we know that the farther we go from the equator the colder it becomes? It is by inductive experience, if not of one man at least of society. It is by comparing the temperature of thousands of places that we have arrived at the general principle. At the same time we shall not be in a position to arrive at general principles from numbers of isolated instances, if we do not make the hypothesis of common elements in the several disconnected and discrete individual cases. In the school-room we have need for both methods. The deductive method may be logical but it need not psychologically be the most suitable method to pupils.

1. Rignano *Psychology of Reasoning*, Ch. VI, p. 122.

For example the calculation of simple interest can be explained in half a dozen sentences ; but the class will not be able to comprehend the matter adequately unless their human interests are awakened by concrete instances. The opposite tendency which in extreme cases should even be called a mistake is likely to occur in those schools that are keen on trying new methods. They are inclined to despise the usefulness of definitions and what they consider to be too early an enunciation of general principles.

The function of synthesis and analysis has already been referred to in connection with sense-perception. The same processes of synthesis and analysis are operative in reflective thinking also. Suppose we wish to write an essay on 'Persistence.' We think of how we proceeded in similar situations in the past when we wrote essays on other topics. We think of persons whom we have known personally and of persons we have read about as having been remarkable for their persistence. We think of talented persons who failed for want of it. Matter for the essay is thus gathered from different places and different ages. This is synthesis. At the same time we also analyse. A number of points and instances may be suggested, but we do not make use of them all. We exclude all irrelevant matter. Even when we mention by way of illustration the names of some persons who were remarkable for persistence we do not write all that we know about them. We choose, select and arrange the materials available. In this we use analysis. This "analytico-synthetic process," as Nunn calls it, is an essential factor in the intelligent solution of all practical problems, in all mathematical and scientific reasoning, and in all æsthetic activities.

We have more than once referred to the common notion that animals have no intelligence and that their actions are solely guided by instincts and other natural impulses. What do we say, then, of the conduct of a young female dog who was about to have her first puppies ? She came to the writer of this book and whined before him and moved round about him

as if she wanted to tell him something. Luckily for her he understood her purpose and went to a room in the out-house and prepared a place for her. She walked before him when they started for the place, and when it was got ready she lay down peacefully and did not care to return with her master when he came away. In the morning she was found happily licking a brood of beautiful puppies. Her approach to the master when she wanted him to understand something was certainly not an unintelligent act. Rignano gives a number of examples from Jennings and from Romanes of animal intelligence. Jennings's example of the infusorian stentor who attempted to escape the torment of a jet of carmine has been referred to by a number of later writers. Jennings also mentions a wasp that went to a caterpillar's nest. "The wasp examined both ends, and finding them closed, it soon clipped a hole in the leaf at one end of the nest about one-eighth of an inch in diameter. It then went to the other end and made a noise which frightened the caterpillar which came rushing out of the hole and was thus seized by the wasp."[1] He mentions a cobra which thrust its head through the bars of a cage and swallowed a toad. Finding that it could not get itself back on account of the swelling produced, it disgorged the toad —after a second attempt also had proved unsuccessful—and dragged it in by its leg and then swallowed it. The performances of Kohler's chimpanzees, especially of Sultan, as mentioned in *The Mentality of Apes* will convince readers that animals are capable of more intelligent behaviour than they are popularly believed to be. It is, however, very probable that the thought processes of animals do not take " the form of a long and complicated succession of acts, imagined step by step under the impulse of a primary " urge (*primary affective tendency*, as Rignano calls it) and corrected by secondary considerations.

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1. H. S. Jennings *Behaviour of Lower Organisms*, New York, 1906, quoted by Rignano in *The Psychology of Reasoning*, Ch. V, which gives examples also from Romanes, *Animal Intelligence*, London, 1898.

Their behaviour may rather be described as belonging on the whole to the perceptual than to the rational level of mental activity. Their thinking is more particular and concrete than general and abstract. The command of general concepts which makes the mental life of even normal men, not to speak of superior individuals, so rich and efficient is not possessed so far as our present knowledge goes, by even the highest animals.

What then are the characteristics of concepts? The term concept is commonly said to be derived from two Latin expressions *capere* meaning to grasp and *con* meaning together. Conception thus literally arises when we are able to grasp a number of things together under one common notion. Spearman points out that the word also implies the notion of fixity. Though he does not discard the notion of generality or commonness, he prefers to think that a concept refers to any apprehended character associated with a word, character or aspect "which has somehow become stably fixed in the usage of a person or society." This stability or fixity owes a good deal to the coming in of language; and the fixity of a character, notion or aspect of a thing becomes still more pronounced when words are not only spoken but are committed to writing. Concepts thus become like "molten bullion poured into coining moulds, whence—after due rolling, punching and pressing—they issue as legal tender for general circulation."[1] A concept has also what Spearman calls discreteness it distinguishes one thing or one class of things from all others. In other words the concept implies a process of isolation. As Woodworth has it, "To define a concept, you must discover what is common to all objects covered by the concept, without being present in the objects that do not belong under the concept. A chair is to sit on, but you can sit on other things. Chairs themselves vary in many ways, and any one chair has characteristics that do not belong in the concept of a chair. The difficulty is to peel

1. Spearman *The Nature of Intelligence and the Principles of Cognition,* Ch. XVI.

off from a chair in thought, something that does not come off physically, namely the essential characteristics of a chair. It is a task of isolation."[1]

Concepts express meanings and may signify, as James points out, things, events, or quality. " Any fact, be it thing, event or quality may be conceived sufficiently for purposes of identification."[2] But the meaning of any thing implies a comprehension of relationship. A thing has no meaning for us unless we consider it in its relation to other things, for meaning implies that the fact, event or quality which is supposed to have a meaning for us, *stands for* or *signifies* something outside of itself. Spearman brings all relationship under three general laws which he calls ultimate principles of cognition. The first he calls the *apprehension of experience* any lived experience tends to evoke immediately a knowledge of its characters and of the experiencer. The second principle is the education of relations : the presentation of two or more characters (objects, events or any other objects of attention) tends to evoke immediately a *knowledge of relations* between them. This relationship may be of similarity, contrast or nearness or it may express the relationship of the whole and its part ; of an object and its quality, etc. For instance if we hear the two words love and hate, we at once say they are opposites, if the words table and legs come together we have a " part-whole " sense. The third principle is the eduction of correlates. The presenting of any character (object) together with any relation tends to evoke immediately a *knowledge of the correlative character.* If we think of day and the relation of opposition we think of night, which is the correlate of day. These laws of relation, of experience and eduction, operate in all thinking processes. The inter-relatedness of all objects that form a field of experience has been particularly emphasized in modern days by Koffka, Kohler and other exponents of Gestalt Psychology.

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1. Woodworth *Psychology,* Ch. XVII, p. 484.
2. James : *Psychology, Briefer Course,* Ch. XIV, p. 240.

The importance of linking up new experiences with old as an effective means of helping forward thought was stressed by Herbart, who described the process as apperception. The mind was supposed to be made up of ideas and new ideas were regarded as forming part of the mind by being taken up into the old mass of ideas. Though now we do not postulate independent existence to ideas, we regard Herbart to have been perfectly right in his insistence that the whole past experience counts in the assimilation of the new knowledge. Every lesson in order that it may be a success must be related to what the student has already known or experienced. The five steps of Herbart—preparation, presentation, comparison, generalization and application—may not as they stand be of particular help to the teacher in the drawing up of a lively and inspiring lesson ; but we thankfully acknowledge that four of the five steps definitely imply the interrelation of the old and the new.

The new and the abstract are to be made familiar to young learners through the help of concrete instances and illustrations. Even persons of mature minds find such things as models, pictures, graphs, charts and other symbols highly helpful in the understanding of abstract and unfamiliar things. It is particularly important that books and lessons intended for small children should be amply illustrated. Even with illustrations and symbolizations, lessons may become uninspiring. Much depends on the material taught. If what is presented is too simple, it bores the learner. On the other hand the lesson may be much too difficult for the class ; in that case an efficient teacher may be able to make the pupils remember certain things. But the mere remembering of a thing—" cramming," as it is popularly called—is no guarantee that it has been understood or assimilated. It may be the form of the scheme or the words of the teacher that is remembered rather than the form of the subject-matter which is intended to be apprehended by them, if what is offered is beyond the intellectual range of the learners !

Models, charts, figures, pictures and graphs are all helpful as symbols in conveying and clarifying thought, but the greatest of all symbols is language. Language need not always be verbal. Gestures, attitudes and rituals may all be called language in a wide sense ; but usually, and it is in this sense we apply the term here, we mean by language speech which is spoken or written, and in civilized societies is both spoken and written. In this sense language is helpful to us in communicating thought and in preserving it. Without words we would not have been able to talk about the distant and the abstract. Even if things were present we should not have been able without words to express relations and to definitely refer to "discrete" or abstracted aspects of those things. Again without words we should not have been in a position to share the thoughts, ideals and aspirations of men who lived in the past, our personal and spiritual ancestors. Our own ideas are made clear, definite and are developed step by step by means of words. Language helps forward thought and thought still further extends the scope of language, and the progress of each is a great deal dependent on that of the other. Language is thus the greatest instrument and the most valuable expression of conceptual development.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

E. Rignano	Psychology of Reasoning, Chs. IV and V.
Dewey	How We Think, Chs. I, VII, IX, XII, XVI.
Spearman	Nature of Intelligence, Chs. IV, V, VII, XVI.
Pillsbury	Essentials of Psychology, Ch. IX.
Book	Learning How to Study and Work Efficiently, Ch. XX.
Woodworth	Psychology, A Study of Mental Life, Ch. XVII.
Nunn	Education Its Data and First Principles, Ch. XIV.
Gates	Psychology for Students of Education, Chs. XI and XII.
Thorndike & Gates	Elementary Principles of Education, Ch. VI.
Sturt and Oakden	Modern Psychology and Education, Chs. XIV-XV.

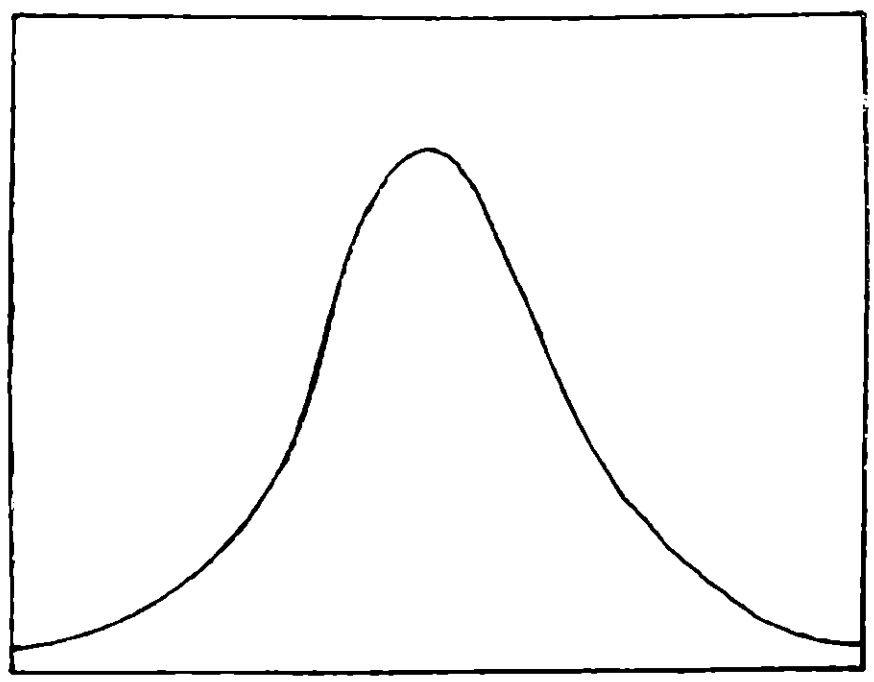
XV

VARIATIONS IN NATURAL ABILITIES

It is an axiom in modern psychology that individuals differ in many respects in aptitudes, interests, temperament, character and achievements as well as in such physiological factors as height, weight, hand-grip, complexion, etc. We have a much too common habit of thinking that persons can usually be grouped into two classes such as the tall and the short, the good and the bad, the fickle-minded and the steady, the strong and the weak, etc., and that any given individual belongs to one group or the other. By a series of experiments wherein objective measurements are possible it is now fairly well recognized that though differences between one individual and another may be so great that in certain respects the performance of one may be many times as good as that of another living under the same environmental conditions, still when we deal with a sufficiently large number of individuals taken at random i.e. without any special selection we find them "varying by infinitesimally small amounts from the highest to the lowest." There is no gap between one group and another as we are inclined to think that there is. The curve is gentle and smooth. If we take certain characteristics as the mark of one group and the comparative weakness in those characteristics as the mark of another group, we should out of fairness also recognize the existence of individuals who lie midway between the extremes and belong as it were to a mixed type. "The great majority of individuals," as Woodworth observes, "are found to belong to the mixed type. The net result of many such experiences is the conviction of psychologists that individuals differ in degree rather than in kind."

The differences between individuals are more in the quantities than in the quality of their natural gifts. Qualitatively they have on the whole the same general and special tendencies we described in Chs. V, VI and VII ; and they have the

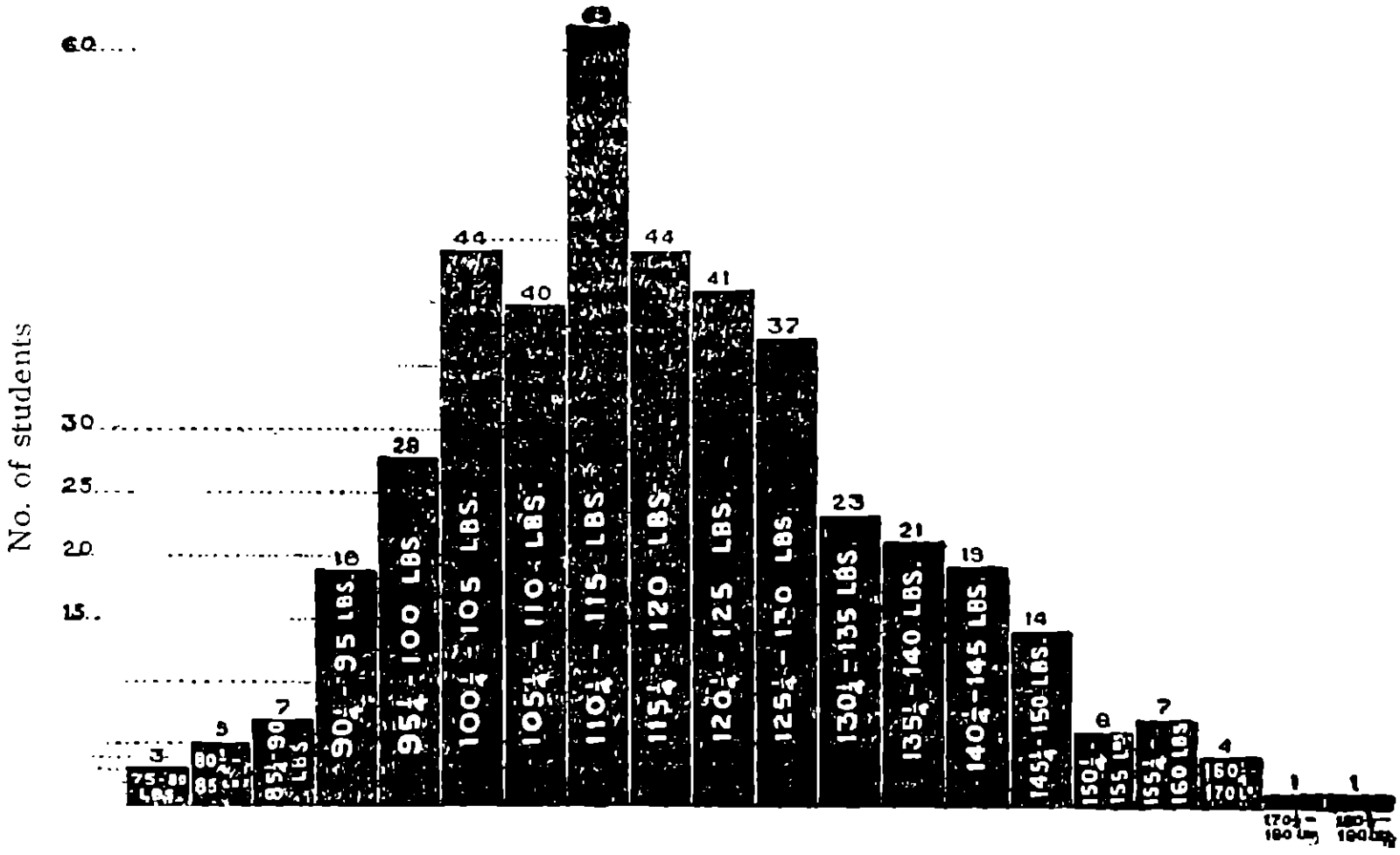
same cognitive abilities studied in the last few chapters such as sense-perception, imagination, judgment and reasoning. Qualitatively the make-up of human beings is similar. The differences are due to the varying strength or quantity of each trait or character, and the different proportions in which these traits or units have combined in different persons to form different character and achievement patterns. For instance one may be specially gifted in one thing (say, mathematical ability) but may be very poorly endowed in another direction (say, artistically). Take any ability or natural



An ideal bell-shaped curve

gift, and we find that the vast majority of people are somewhere in the middle of a curve and a progressively smaller number deviate further and further from the middle, with the result that the number of superlatively gifted individuals and of those who are mostly devoid of the character or unit under consideration is extremely small. Lincoln is reported to have said that "God must have loved the common people because he made so many of them." Woodworth calls this *distribution about an average* the fundamental law of individual differences. When a sufficiently large number of persons are tested and when the tests are accurately made and carefully executed, we get what is usually called a bell-shaped curve. If men had belonged to distinct and discrete types and

had there been no mixed type, there should have been gaps in the curve and as a consequence a clustering of individuals round two or more modes, upper and lower. When only small numbers are tested or when the tested group is not a true specimen of the mass of people that are supposed to be represented but is made up of an artificially selected collection of individuals, the curve may show a bimodal or multi-modal nature—but not when the conditions indicated above are satisfied.



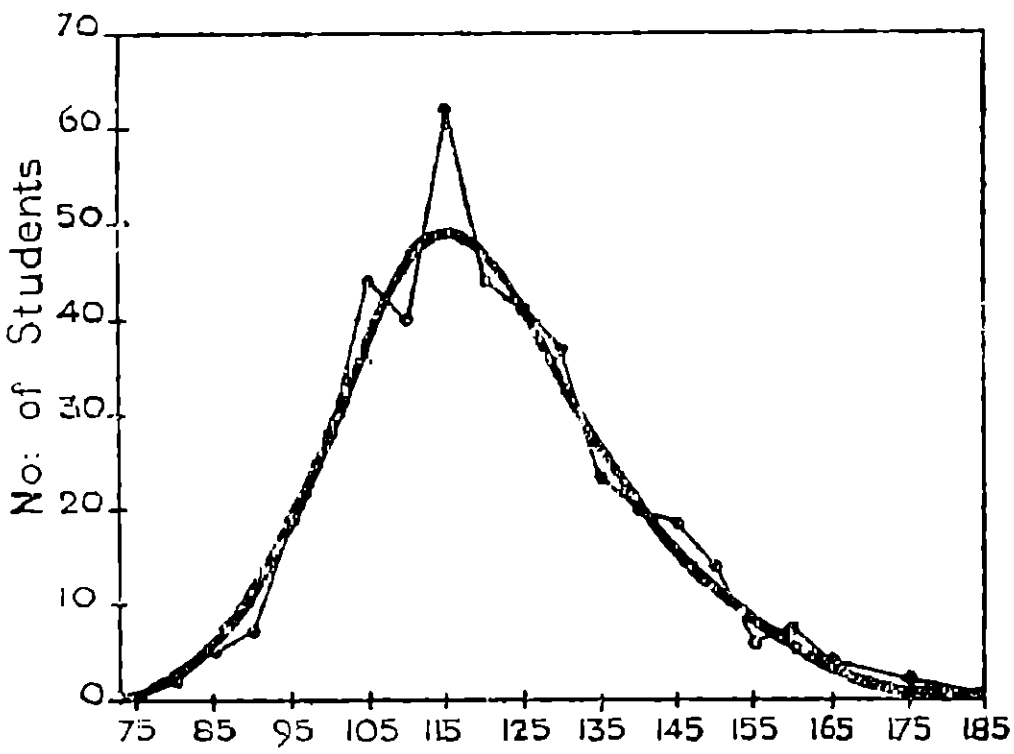
Weight in number of pounds

Distribution of 425 students according to weight in the Teachers' Training College, Dacca (1932-37)

If the bell-shaped, even, continuous curve is the rule where objective measurements are possible, as demonstrated in scores of tests regarding height, weight, chest-girth, hand-grip, etc., there is reason to presume that this should be the case with variations in mental abilities also. If the attempt to arrive at a natural curve for these latter traits is not yet as successful as we would have it, the reason need not be that mental traits do not obey the law of distribution about an average ; it may well be that the tests applied are not as yet perfect in all respects. A still better reason is that it has not yet been possible

to unmistakably isolate and identify the ultimate units of mental abilities. Judgment, reasoning, imagination, discrimination—these are all composite factors which comprise more elementary abilities, and it has not yet been found possible to make devices that would perfectly isolate these elementary factors—much less measure them. One of these composite factors is frequently referred to in common speech and literature under the term intelligence, and attempts have been made in different ways to measure it.

What then is intelligence? It may roughly be described as capacity to react adequately to one's environment; and ade-



The same number of the Dacca Training College students for 1932–37 and their weights expressed in frequency curves. The thin line shows the actual curve and the thick line shows the same "smoothened"

quate reaction to environment implies the capacity to profit by past experiences and to learn new things. It also implies some capacity to form concepts and to attend to situations that are not immediately present to the senses. Several other definitions of intelligence have been offered, into a discussion

1. Spearman devotes two chapters of his book on the *Nature of Intelligence* to show that all definitions of intelligence now in vogue are unsatisfactory. Then he enters into the enunciation and amplification of

of which we need not enter here.[1] Almost all great writers on intelligence are agreed however that it is an inborn gift and that being inborn it does not generally increase by education, though the person who is educated is greatly profited in making right use of his intelligence. As something which one is born with, it is more the result of heredity than of environment, though it does not follow that intelligent parents always have equally intelligent children.

We have already mentioned that what is usually called intelligence is a composite factor. Thorndike even went to the extent of denying a common factor in intelligence. He contended that abilities are separate and discrete, that a man being good in mathematics or good at playing chess is no guarantee that he will be good in other lines of activities where circumspection and thoughtfulness are required. His earlier position implied what is sometimes called an *anarchic view of intelligence*. He has now modified his views and believes that a number of activities or processes may have some intellectual factor in common. Thus he has approximated to the views of those who believe in an *oligarchic view* of intelligence. Spearman on the other hand believes that there is a common factor in all intellectual activity, and calls this common element *g*. This *g* is not what is called intelligence itself, it is a general factor that enters into all intelligent activity. Knowledge of an experience and of the experiencer himself and the ability to grasp a sense of relationship through the eduction of relations and correlates (see p. 179) are all dependent on this general factor *g* and its strength or weakness in any individual.

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his three principles we have referred to in the previous chapter—which he calls the three fundamental noegenetic principles—and concludes the book with the statement that intelligence is the capacity to make use of these noegenetic principles.

William Stern defines intelligence as "the general ability of an individual to consciously direct his thinking towards the solution of new problems, that is the ability to make an adaptation to new life conditions and problems." Quoted in C. Bühler *From Birth To Maturity*, Ch. VIII.

In addition to this general factor Spearman recognizes special abilities. The influence of a man's *g* is shewn in all his behaviour. But there are special abilities such as ability to do mathematics, to paint pictures, to sing, to speak fluently, etc., abilities which have been designated by S_1, S_2, S_3, and so forth. Thus a man's *g* affects his ability to do sums in arithmetic, to play football, and to appreciate music. On the other hand let us take the instance of a person whose *S* for music is high. We may expect him to be good in vocal music and to be able to play on a musical instrument better than one whose musical *S* is weak ; but there is no guarantee that he will be good in mathematics.

Even assuming the existence of different kinds of *S's*, as is usually done now, such as an *S* each for mathematical ability, literary ability, music, artistic ability (painting, sculpture), handicrafts, sports and games, etc., we do not seem to get out of all difficulty in predicting a man's capacity for performance in any special situation. The commonly recognised S's themselves are very likely made up of still smaller ability-groups or ability-systems. For instance ability to play on a musical instrument involves a taste for the appreciation of musical rhythm in sound, ability to reproduce that rhythm in imagination, and a capacity to manipulate parts of the body such as the throat muscles or lips or fingers. Similarly we can reduce literary or mathematical ability into quite a number of smaller ability-systems. All these factors have to be taken into account when we estimate a man's ability. An interesting problem in experimental psychology is the inter-relation of these different ability-systems with one another. Is there any relation between a man's *g* and the system of his *S's* ; is there a relation between his S_1, S_2, and so forth ? Painstaking tests and elaborate mathematical calculations are resorted to in the attempt to arrive at what are known as *correlation coefficients*. On the whole it has been generally recognised by investigators that there is some agreement or correlation between a man's *g* and his several *S's*, but the inter-relation or correlation

between the various special abilities or *S's* themselves is much harder to establish.[1]

A person's total efficiency is dependent on the relative strength of his *g* and the several degrees of *S's* that he is gifted with. By taking care he may not add a cubit to his intellectual stature—for that is rather unaffected by practice and training. If however Spearman is correct, there is some possibility of improving the quality of a person's system of *S's*. As educators however it is of extreme importance that we note that it is not one's original endowment alone—whether general or special—that determines one's success in life. The character, temperament and ideals of a person tell upon his efficiency. We devote a number of chapters to these important matters in the last section of this book. In passing it may be observed that reference to these aspects of one's life is also implied when we talk of his intelligence. In his *Abilities of Man* Spearman employs his eminently analytic mind in search of the units or prime factors of these other aspects of mental activity that are implicitly included in our estimate of one's intelligence. Only second in importance to *g* has been another factor which may roughly " be called general mental inertia or lag—another convenient name for it, especially when present to excess, is perseverance. Comparative freedom from it, which with Garnet we may call *c*, has proved to be the main ground on which persons become reputed for 'quickness' or for 'originality.'" Still another functional unit referred to by him is also of great importance in the suc-

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1. There is said to be perfect correlation when any trait *x* is always and invariably accompanied by an equal amount of another trait, *y*. If one is equally good in Sanskrit and English as seen by the results of numerous tests in the two subjects there is said to be a perfect correlation between the two subjects in his case. If the same is true about all other persons also, that they are all as good in Sanskrit as in English or as bad, and that the same kind of result always takes place, then there is said to be perfect correlation between the abilities for these two subjects and this perfect correlation is expressed by the figure 1.0 ; and lesser de-

cess of any person, though it is not itself of cognitive nature ; but it has a dominating influence on all cognitive activity. This factor is symbolized by the letter *w*. "On trying to express it by any current name perhaps the least unsatisfactory, though still seriously misleading, would be self-control."[1]

Attempts to gauge a man's intellect by study of such things as size and shape of the head or face or hands are now discarded as unreliable. Binet of France, a psychologist, started with the help of a psychiatrist named Simon the present practice of *mental testing* by putting a number of questions involving thought and observation, so that the subject could give answers rather from the result of his own experience and reflection than from what he learned from teachers or books. This may be described as an attempt to get a sample of the quality of his intelligence—not yet a perfect device, but a more practical and fruitful procedure than the kinds of methods mentioned for finding out what a man is capable of doing. Mental Tests are better than ordinary examinations in estimating the extent of the examinee's original endowment in that the latter give more attention to finding out what people know than to determining the extent of their capacity. The Binet-Simon tests have been the basis of numerous other tests conducted both in America and in England, and some of the prominent testers have offered modifications of the original Binet-Simon tests. Among the chief English testers in this category may be mentioned the names of Burt, Thomson and Ballard ; some of the most

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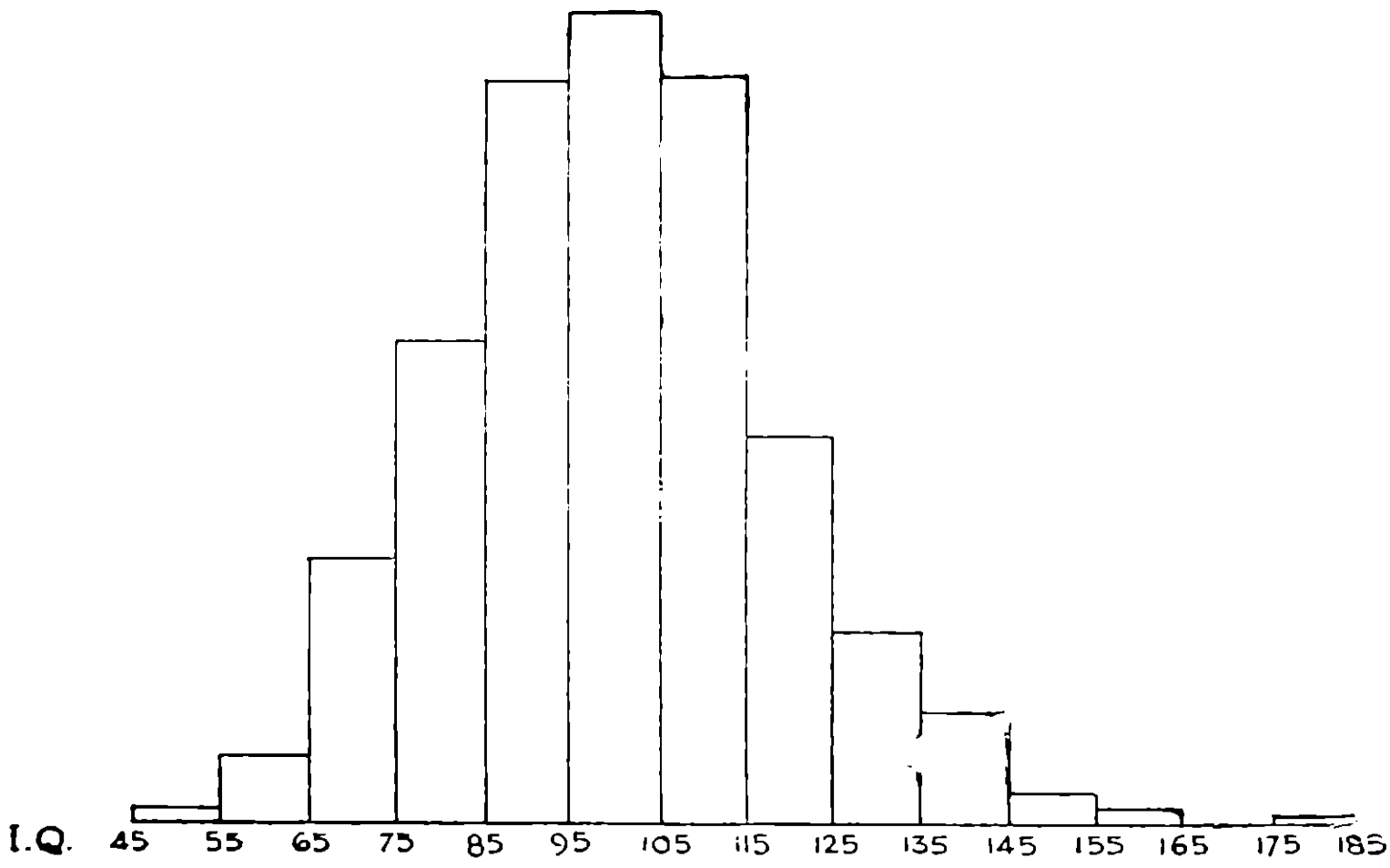
gree or correlation may be expressed by figures, ·9, ·8, ·5, or ·3 as the case may be. A correlation of 1.0 has not been established between any two items or traits of abilities ; and a correlation of ·5 is regarded to be quite a satisfactory indication of agreement between two different traits. When there is no correlation at all it is expressed as ·0 correlation. If the presence of one ability is accompanied by positive defect in another, there is said to be minus correlation between the two. The working out of correlation between two traits in regard to many individual cases involves much intricate mathematical calculation.

1. Spearman *Abilities of Man,* Ch. XXIV.

famous American testers are Terman, Yorkes, Goddard and Kuhlmann.

Several attempts have been made to evolve Indian modifications of the Binet Tests, the best known of which are those of Herbert Rice of Lahore and of V. V. Kamath of Dharwar (now of the Training College, Bombay). Rice was instructed and helped by American mental testers and Kamath owes his inspiration and guidance to British workers in this field. The former rendered his tests in Urdu and Punjabi[1] testing 929 Punjabi schoolboys ; while the latter carried out his tests on boys and girls and pre-school children and adults, numbering 1,074 persons in all (the majority of them being school-children).



Kamath's Distribution of 1074 Persons
according to I. Q.

Kamath who made his tests on Kanarese and Marathi children believes that " the multiplicity of vernacular languages need not be any great hindrance in the development of tests, for each

1. See C. Herbert Rice : *The Hindustani Binet-Performance Point Scale,* Oxford University Press, 1929.

region covered by the major languages in India will be as large as a country in Europe".[2] Tests can no doubt be developed in each of such vast provinces as our linguistic provinces are, but the help and encouragement which testers require are slow to be found in any one of these provinces ; and even when the workers work hard and almost single-handed, as Mr. Kamath has done, their services are not recognized outside their own language area. This is why, to take one example, the work of two Mysore experimenters—Gopalswami and Narayan Sastri—is not much known outside Mysore, though they have much commendable and fruitful work to their credit. All these our testers—and there are several others whose names we have not been able to mention—have based their Indian, rather we should say their Indian Provincial, modifications on the foundations well and truly laid by Binet.

Binet drew attention to the amount of retardation of individuals by referring to their mental age as distinct from their chronological age. For instance a child of seven years may have only the mental development of a child of five years. Such a child was described by Binet as having a mental age of five years, irrespective of his chronological age. Another child of seven years may have the mental development of a child of ten years, and that child is then said to have a mental age of ten years. Prof. Stern of Germany went one step further and evolved an I. Q. (Intelligence Quotient) which has generally been accepted in all *Testing* circles.[1] Prof. Terman of America, the author of what is known as the Stanford Revision of Binet's tests, made the use of I. Q. popular in English speaking countries. The I.Q. is easy to calculate and very convenient to refer

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2. V. V. Kamath *Intelligence Tests of Indian Children* in the British Journal of Educational Psychology, November, 1934. The author of this book has the joy of having published this article earlier in the Karnatak Journal of Education, in January 1934, when he was its editor in association with Mr. Kamath himself.

1. See G. H. Thomson : *Instinct, Intelligence and Character*, Ch. XVIII.

to even in popular expositions ; and is derived by dividing a person's mental age by his chronological age and multiplying the result by 100. Thus a child of 8 years with a mental age of 10 years has

$$\frac{10}{8} \times 100 = 125, \text{ an I. Q. of } 125.$$

It is generally believed that the maximum mental age of the majority of people is in the neighbourhood of sixteen, and that superior individuals may have mental age of nineteen and in rare cases even more. It should however be admitted that the testing of persons above sixteen has not been so thorough and systematic as that of persons below that age.

There is a draw-back in mental measurements that most of the tests presuppose a certain mastery of language, and that those who have language difficulties find it difficult to answer questions which under more favourable conditions they should have answered. To obviate this difficulty *Performance Tests* have been devised for those who cannot do the *Verbal Tests*. In performance tests the testee is asked in simple language and in some cases by easily understood signs and gestures to make certain performances such as fitting certain models into appropriate holes, joining certain disjoined parts of pictures and models, solving certain maze-problems, etc. ; and points are given for the skill with which these performances are executed.

Another difficulty in the wide application of mental tests is that testing of individuals means an enormous expenditure of time. To meet this problem, *group tests* of intelligence have been evolved to take the place of *individual tests*, wherever the latter are found to be impracticable. Group tests obtained wide publicity and recognition in the days of the World War (of 1914-1918) when the American authorities employed the services of psychologists like Yerkes to classify the hundreds of thousands of fresh American recruits and to pick out from the rank and file those who by virtue of their better intelligence deserved to be placed in responsible positions. The advantage of group tests is that it enables large classes to be tested in a short

time, but there are occasions when group tests are not as advantageous as individual tests. Individual tests are necessary when we deal with the child who may be backward as to require special treatment. "Individual testing is also useful in the case of the emotionally unstable child or the very young child, for in such cases group testing is not so reliable."[1]

Mental Tests, whether of the verbal or of the performance type and whether administered to persons singly or in groups, are intended to discover the capacity of the individuals concerned. They are not intended to find out what use has actually been made of these natural abilities. In order that this may be found out and to compare the achievement of a given individual or of a given group with that of other similarly placed individuals or groups, we have recourse to what are known as *Achievement Tests.* Achievement Tests have been prepared for different subjects and branches of knowledge, such as arithmetic, history, geography, English composition, spelling, handwriting, etc. Though achievements in any given direction vary according to changes in curriculum, local conditions, efficiency of teachers and methods, the existence of graded tests in achievements and the knowledge of grade norms in other institutions and localities are certainly of some help to those teachers and supervisors who are keen on finding out how any one person or group generally stands in comparison with others. Tests are made also to find out the special aptitudes of individuals such as for any particular business or artistic career, and such tests are usually described as *Special Tests.* What are known as *Vocational Tests* occupy an important place in special tests.

To refer again to general natural ability indicated by the I. Q., it is observed that a vast majority of people in any ordinary community have an I. Q. ranging from 85 to 115. These are the people whom we conventionally call the normal people, and, according to Cyril Burt, about 86 per cent. of the total

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1. Wynn Jones *Theory and Practice of Psychology,* Ch. VIII, p. 89.

population of any big community belong to this normal group.[1] Out of the remaining folk about seven per cent are above this I. Q. and about the same number below. Of the fourteen per cent outside this middle group, about ten per cent may be found within a range of 15 points either above or below its limits, i. e., we may expect about five per cent of a community to be definitely backward intellectually (technically called morons) and about five per cent to be bright. Outside this group are the imbeciles (I. Q. 25-50) and the idiots (I. Q. below 25) who together form about two per cent of the total community, and the very superior individuals and the geniuses who also form about another two per cent of the community.

Many text-books in psychology follow the more detailed classification of Terman who has :—

Below	I Q. 25			Idiots
Between	25	and	50	Imbeciles
	50		70	Morons
	70		80	Border-line deficiency
	80		90	Dull but not feeble-minded
	90		110	Normal
	110		120	Superior intelligence
,,	120		140	Very superior
Above			140	'near' genius or genius

What practical use do we find in these mental measurements and the numerous norms or standards of various kinds of achievements ?

(1) First of all we thereby obtain a more definite idea than would otherwise have been possible of the normal development of mind from year to year. The great value of the Binet-Simon Tests consists in their graded nature. Binet and his numerous followers in Europe and America have not only invented Tests but have tested and standardized the Tests themselves so that we can now by the help of these standardized Tests say with some precision what one can expect from a

1. See Burt *The Subnormal Mind*, Ch. I.

normal child from the third to the sixteenth chronological year of his life.

(2) With the help of these tests we can study the development of any individual or group of individuals, and see how they stand in comparison with other individuals and groups in similar situations. The subjective estimates of young persons by teachers and other competent observers can be verified or modified by mental and achievement tests which are more objective. Thus we can make more reasonable classifications of pupils who are now found indiscriminately jostling each other within the school-room in administrative units variously described in different places as forms, standards, grades or classes. By an application of mental and achievement Tests we can get a fairly accurate estimate of each individual's abilities and progress ; if along with them we use some "' Special Tests " we shall be in a position to get a fairly definite idea about his special aptitudes. A trained mental tester making use of these varied tests is able to make a not entirely unreliable prediction about an individual's future development.

(3) Some children may not be good in academic subjects, but there is no need to worry about them if they show aptitude in other, say, vocational subjects. There are vocational tests which are of help in giving *vocational guidance* for those young persons who seek advice concerning the choice of vocations or trades.

(4) Managers of industrial houses make use of such tests in *choosing candidates* for employment in their firms and work-houses.

(5) The Tests are helpful in the matter of giving educational guidance also. All individuals cannot benefit much by any given course. There may be some to whom it is too stiff, and there may be some who may find it too easy and therefore boring. If educational guidance is properly given with the help of suitable tests we shall be able to direct individuals to courses that may be most profitable to them. At any rate wherever the message of the Tests has reached it has commonly

been recognised that it is no virtue in a school-room to insist on a dead level of uniformity.

There are cases of subnormal children who, with any amount of drill and any amount of special and individual attention devoted to them, cannot profit by a course in classes meant for normal pupils. Among them however we do not include the far too backward—"the idiot who never learns to communicate with his kind by speech" and the imbecile who "can neither express his thoughts in writing nor understand (much of) what he reads."[1] Then remain the feeble-minded —the morons or the "more backward" individuals with an I. Q. ranging from 50 to 70, and the "less backward" persons (those described as of borderland deficiency) with an I. Q. of 70 to 80, and also the lower types of dull persons. The better sort among them, though they may be retarded by two or three years, can complete much of the ordinary work done by normal children if they are given particular attention in special or 'auxiliary' classes meant for such backward pupils. Perhaps a tenth of our ordinary secondary and higher elementary school population will profit by such special classes. As for the other backwards, the best way of educating them is to have special schools for them and to introduce in those schools not all the ordinary academic subjects of normal children but some reading and writing, the mere rudiments of arithmetical processes, and a number of practical subjects such as gardening, metal work, carpentry, washing and stitching clothes, etc. We must appeal to the strongest interests of such children and let them go unhurriedly at their own pace. Authorities of all big schools, say, of five hundred pupils and above, should certainly consider the need of organizing special classes in their schools ; while state authorities and the forward-looking, educated communities should consider themselves as having failed in their responsibility if they do not regard with urgency the need

1. Binet and Simon *Mentally Defective Children*, Ch. III, p. 77. (Drummon's Transln., Arnold. 4th Imprn.).

of starting special schools for those backward children who cannot profit by instruction in ordinary schools.

Bad as it is to neglect backward children, it is no better—and as many would have it, is even worse—to disregard the special needs of the bright. The bright children themselves do not all belong to the same category either. They are on the whole better conditioned physiologically than the sub-normals though intellectual giants with rather a feeble, or otherwise handicapped, physical frame are not unknown. Some of the bright boys may happen to be only precocious children who mature a little earlier than the rest but who do not keep up in later years the advantage of their initial superiority. Again, there are some who are exceptionally good in one or two branches but do not show much superiority in other respects. Still others there are who show superior aptitude for a number of varied enterprises.

To keep bright children, to whichever category they may belong, marking time with the rest is practically allowing their valuable powers to be wasted, and is not only a personal waste but a loss to society at large. The superior individuals, intended by nature to be the leaders of society, may, by thoughtless handling on the part of those responsible for their education, become so listless and indifferent that they may fail to put their best even into their routine work. "Consequently indolence, laxity and dislike for school," as Prof. Stern of Germany puts it, "are readily developed ; the spirit of hard work, self-control and consciousness that should spring from persistent effort fails to appear ; in short, the higher ethical qualities that the school should bring into play are not developed in those pupils."[1] Accelerated promotions, widening of the curriculum to suit the broader interests and ampler abilities of the gifted, direction in extra-curricular activities, inspiration and opportunities to lay their talents at the service of their less gifted fellow-

1. W. Stern quoted by H. Woodrow *Brightness and Dullness in Children*, Ch. XIII, p. 264.

students—these are some of the ways to develop and exercise the abilities and interests of those exceptionally gifted children, whose number, we are told, "is at least equal to the number of abnormals at the lowest end of the scale."[1]

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Spearman	Nature of Intelligence, Chs. I, XXI.
	Abilities of Man, Chs. XV, XXII—XXIV.
Drever	Educational Psychology, Ch. VIII.
Nunn	Education, Its Data and First Principles, Ch. IX.
Starch	Educational Psychology, Ch. VII.
Morgan J. J. B.	Child Psychology, Ch. XIV.
Gates	Psychology for Students of Education, Ch. XV.
Woodrow H.	Brightness and Dullness in Children, Chs. XI, XII. (Pp. 258-74), and XIV (Pp. 286-296).
Fraser K. L.	Education of the Backward Child, Chs. II—V.
Burt	The Subnormal Mind, Ch. I.
Hamley H. R.	The Testing of Intelligence, Chs. I—III.
Thomson G. H.	Instinct, Intelligence and Character, Chs. XVII—XX.

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1 Groszmann—quoted by Woodrow, p. 266.

XVI

LEARNING :

SOME GENERAL PRINCIPLES

If individuals vary in their natural abilities, as we saw in the previous chapter that they do, and in the strength of their general and special tendencies (see Chs. V, VI and VII), we should expect them to vary in their capacity to learn and in the progress of their educational attainments. This does not however make it impossible for us to draw certain general principles that are operative in all learning processes, to a consideration of which we turn in this chapter.

First let us see what learning is. In a general way we may describe it as facilitating the use of original endowments. The original endowments cannot, as the name signifies, be created by the organism concerned—man or animal. They are to be reckoned with as something that is already there, something to be taken for granted. Development takes place when the original endowments are used. Every use of the original endowment facilitates the further use thereof, and this facilitating process is what we call learning. Each experience is a reaction of the organism to its environment, and all subsequent experiences are affected and modified by previous reactions of the animal or person concerned. Colvin thus begins his famous volume on *The Learning Process* by describing it as " the modification of the reactions of an organism through experience."[1]

Development takes place through two different means known as (1) maturation and (2) activity. When we consider

learning we emphasize the latter, but we cannot ignore the fact that activity is possible only when a certain stage of maturation has taken place. For instance, however much we may try to give practice to small children to walk or talk, they are not able to make these performances until they reach a physiological stage of maturation. Walking may appear a simple kind of activity, but when we analyse the process we find that it is far from a simple or single form of activity for, it involves the ability of the child to balance its head over the neck, to keep erect the trunk of the body with the help of the spinal cord, to balance the weight of the body on the feet, and the co-ordinated and rhythmic movement of the legs. The combination of these simpler processes into the one complex form of walking is effected only when the bones, the muscles and the neural system have reached a certain level of maturation. When maturation has taken place, the appropriate activity often follows without much direct or specific practice.

Both animals and human beings, as Wheeler points out,[1] have been found able to meet *new* situations of certain degrees of difficulty the first time they tried. More than sixty years ago one Spalding took a few newly hatched birds and locked them up in a small box each, where they had no room to stretch their wings. After a few days he let them out and compared them to free birds of the same age, which had plenty of flying practice. The caged birds were able to fly at once, though not at first with the ease and gracefulness of movement of the practised birds. Wheeler mentions an experiment on chickens by one Mr. Bird who watched the initial pecking of newly hatched chickens, some of which were allowed to peck from the start and some were kept away in the dark where they could not peck for 24, 36 and 48 hours. The initial pecking score of the chickens that started pecking after growing up a few hours more was found to be decidedly better than the initial score of the comparatively early starters.

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1. R. H. Wheeler *The Science of Psychology*, Ch. XI, p. 319.

The improvement was evidently due not to any practice but to maturation. Similar experiments on twins have been performed ; *T* and *U* were identical twins—they were so like each other in all important respects. When they were 46 weeks old, *T* was trained to climb a stair-case. At 53 weeks *U* was made to get up the stairs, and her initial performance was better than her sister's initial performance though it was not so good as her practised performance. Then *U* was trained for two weeks and she was able to get in the course of these two weeks all the ease and skill of performance of her longer-trained sister, and at 79 weeks their performances were still alike.[1]

From these and numerous other observations and experiments on maturation we draw certain conclusions of great importance in education. None of the experiments makes us presume that practice or repeated activity is unimportant in the development of behaviour. As a matter of fact even the baby in the pre-natal stage, the "fœtus," is far from inactive, as every mother knows. Its development is mostly and predominantly due to maturation, but even this maturation process is helped forward by the incipient activity of the "unborn" child. On the other hand it is preposterous to claim that all growth and development is due primarily to activity as we ordinarily use the term, though maturation is a matter of internal relations and organization, which in a wide sense is activity. What we usually call activity is, however, possible only after maturation has prepared the way for it. As maturation is the starting point of learning and as the rate and scope of learning is a great deal affected by maturation, we can safely assert that it is a waste of time and of resources to attempt to teach a child things which he is too immature to learn. To have the happiest and best results, education must be adjusted to the child's stage of maturation. In order that this may be done, the stages of growth with the characteristic interests and abilities of each stage must be studied, a topic we return to later (see Ch. XIX.).

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1. See Gates *Psychology for Students of Education,* Ch. IV.

It is often said that children can be taught anything if they are taken in hand early enough and, conversely, that grown-up persons cannot learn new things easily. Systematic observations and experiments belie both these popular notions. Thorndike with the help of three collaborators reviews the results of experiments made by others before them on adult learning and mentions a number of new experiments. He believes that man generally reaches the acme of his learning capacity about the age of 22 and that this capacity remains almost as strong and efficient for a number of years. According to Thorndike the capacity of a man of 42 to learn new things is generally a little less than that of a young man of 22, but it is superior to that of children, and at least equal to that of what he calls the "early" adolescents (of age 14 to 18).[1] There is no doubt that at a certain late stage in life degeneration sets in, i.e., the capacity to learn fails to keep pace with the tendency to lose grip on the physical and psychical attainments already made. This is supposed to start at about 45, and the regression is definite at about 55. This does not however mean that those above 55 cannot learn new things ; it only means that the obstacles for learning and retention are greater. But it is a sad fact that even those middle-aged persons in whose case the adverse balance of regression need not have started do often fail to acquire new skills and new methods. Very often this is due to such factors as want of interest, want of opportunities, want of confidence in their own capacity to learn, and fear of unpleasant attention and comment from others. These factors can interfere with the studies of children too ; and in so far as they do, the latter too fail in their learning efforts as much as the adults.

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1. Thorndike *Adult Learning*, Ch. XI, p. 129 and p. 147. Thorndike calculates that the loss of learning capacity of a man of 42 compared to one of 22 may be about 13 to 15 per cent, which is less than 1% for every chronological year ; and that this rate of gradual loss is very much lower than the rate of gain made in childhood and adolescence. He believes that the loss of all these 20 years is not more than the average gain made in one year from age 10 to 15. See *Adult Learning*, Ch. XI, p. 136.

Let us therefore give closer attention to those factors that condition efficient learning in all alike, old and young. All learning is dominated by some goal or other. There is no learning that is not directed to some end immediate or remote. The rat tries to get out of a maze to obtain food, to regain freedom, or to meet a mate. The cyclist learns to balance on his wheels in order that he may be able to move about more speedily. Where the end is vague or ill-defined the learning process is, other things being equal, slower than where it is urgent and precise. If the goal is not clearly defined, the learner is in no position to find the best way of attaining it as he does not know what he is after ; on the other hand when it is definite and clear, "he has only one problem to solve, namely to find a way of doing the desirable thing."[1] The goal may be some immediate advantage or a distinction to be achieved in the remote future ; it may be ego-centred or a disinterested desire to be of service to others. Whatever it is, the more clearly it is defined and the more intensely it is sought after, the more efficient will be the learning process. Starch tells us the interesting story of a psychologist who in conducting an experiment repeated certain materials for memorization so often that a number of subjects were able to correctly reproduce them, but who was not himself even then able to repeat them by rote.[2] The reason is obvious—the subjects wanted to learn the materials, but the experimenter was indifferent. Learning is most efficient when the learner's immediate aims are in line with his ultimate ideals in life, as in the case of an unselfish medical student who knows that he should pass his examination in order that his desire to be of service to his suffering neighbours may be realized.

When an effort has been found successful, the subject feels satisfaction and he is inclined to repeat the process with the consequence that effective learning tends to take place. This is

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1. W. F. Book *Learning How to Study and Work Effectively,* Ch. VI.
2. Starch *Educational psychology,* Ch. XII.

called *the law of effect* by Thorndike who associates it with two other laws, of exercise and readiness. The law of effect lays stress on the feeling of annoyance and satisfaction. As Kilpatrick explains it, " We learn to do the ways that bring satisfaction ; we learn not to do the ways that bring failure and annoyance."[1] Children who show any aptitude for singing or acting or for games like football or cricket, are admired by their school-mates as much as, if not more than, those who do well in their academic studies—with the result that they go ahead with greater vigour in the departments which give them delight, and become more and more proficient therein. On the other hand, discouragement and annoyance tend to arrest the progress of those who with recognition and praise should have done better. It is foolish on the part of a teacher to ask young offenders to write down a few lines from a good poem as a task of punishment ; it is tantamount to the teacher positively helping the unfortunate offender to cultivate distaste for the poem, if not for poetry in general !

The law of effect holds good in the case of animals as well as human beings. Thus a cat that comes out of a trap by its own efforts and is rewarded with a piece of cheese every time it comes out, tends to come out of it with greater ease on later occasions. But how did it come out first ? Many psychologists affirm that it was due to a lucky chance. The cat tried many devices such as pulling, scratching and biting in one direction and another—and one of these efforts succeeded by chance. They hold that this is how animals learn most things —by lucky accidents, by what is known as the method of trial and error. But as we have said more than once we hold that animals are not incapable of envisaging a situation and of responding to that situation with a certain amount of intelligence.

In order that the situation may be envisaged and comprehended and reacted to in an adequate manner the subject—

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1. Kilpatrick *How We Learn,* Ch. III.

man or animal—resorts to a particularizing activity ; i.e., he or it analyses the given situation into relevant constituent parts, though this particularization or analysis of the situation into smaller units may be done unconsciously—without the explicitness of awareness. Even in this particularization however the " whole " is primary, and the parts are separately apprehended in relation to the whole. When parts are thus particularized they themselves are treated as smaller configurations or patterns (the literal meaning of the German word *gestalt* is pattern or shape) rather than as a group of isolated and discrete units or particulars. This is made possible through the differentiation of parts or particulars from bigger wholes or configurations, the grouping of these particulars into smaller configurations by the synthetic process of assimilation, the prepotency of one element in the situation which helps to keep the smaller situation as one whole in relation to that predominant feature, and the consequent re-orientation and re-organisation of all the relevant elements of the new situation in view of this central object of interest. All these processes are possible only with an amount of insight into a situation—to however humble an extent it may be—on the part of even one of the lowest creatures such as an earthworm that learns to avoid one route and prefer another in reaching its burrow.[1] For want of space we cannot give an account of some of the epoch-making experiments of Kohler that illustrate and prove these contentions. We shall here rest content with observing that Kohler's apes would not have been able to manipulate boxes, sticks, ropes, and ladders, as they did, without rudiments of the mental functions mentioned above, such as envisaging the whole situation, grasping a sense of relation between the various elements in it, reorientation of the situation in view of a central element in it, and directing all these processes towards a goal.[2]

1. Studied by R. M. Yerkes—See R. M. Ogden *Psychology and Education,* Ch. XIV.

2. See Kohler *Mentality of Apes,* Chs. IV & V.

It is true that an animal kept in a trap fumbles in its attempt to get out of it, though a human onlooker may think that to get out of such a trap means the simple manipulation of a latch. But it fumbles because it cannot clearly comprehend the situation, just as many men and women who run a motor car fumble when a slight adjustment has to be made in the engine. Learning by trial and error takes place in the case of men and of lower animals when the goal to be reached is beyond their apprehension, but to argue from this that all learning has its origin in trial and error is entirely unwarranted. Even when a correct response is made by chance it eventually results in a re-orientation of the situation and the apprehension of relationship in the several elements that make up the recognized situation.

Satisfaction leads to repetition of the performance that gave satisfaction, and annoyance tends to its discontinuance. Thus the law of effect leads us on to the *law of exercise.* The law of exercise is implied in the popular maxim—'practice makes perfect' But practice alone does not make one perfect. If a tennis player always serves wrong he does not thereby become a perfect player. It is the practice in which the right movements are selected and emphasized, and the wrong movements are inhibited and eliminated, that results in progress. The learner makes at the outset what Freeman calls an over-production of movement. "The bicycle rider exerts altogether too much force in gripping the handle bars and there is a general tenseness of the whole body. The same diffusion of impulse is shown in the contortion of face, and the twisting of the body and feet, in a child who is learning to write."[1] We call it progress when by repeated practice the right movements are selected and co-ordinated, and the faulty ones eliminated. The result is an ease, accuracy and effectiveness of performance which was beyond the reach of the performer in the initial stages.

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1. Freeman *How Children Learn,* Ch. VIII.

More important than exercise or practice in learning is the attitude of the learner. Learning takes place best when the learner is ready for it ; thus we have the *law of readiness.* Readiness is concerned with a number of important internal factors in the individual's life such as maturation, the relative strength of the several instincts, temperament, habits, general and special abilities, and the nature of his general outlook and ideals of life. Some of these factors are native and some are acquired. For instance, it is easier to teach the lesson of chivalry to the adolescent boy than to a boy of eight or nine ; for, with the passage of years the boy becomes by maturation more interested in the other sex and is more ready to appreciate the complementary qualities he finds in members of that sex. As an example of acquired interests we shall take the school-boy who goes out to play at five in the evening. At that time he is ready to play and, conversely, he is unready at that time to be engaged with his books. A person is more ready to do a task in which he expects to succeed than to attempt what he formerly had always dreaded. Those who are weak in mathematics and strong in language-study are ready to do the latter and are unready for the former. A person is more ready to learn a self-chosen task than one that has been imposed on him by external authority ; he learns to do well in a department where he has freedom of initiation and experiment much more than where he has always to work under a task-master's eye. Hope of reward may serve as an incentive to action and may thus lead to greater readiness on the part of the subject ; but in so far as a reward partakes of the nature of a purpose from without, the wise educator is not eloquent in its praise. For, the more a man feels that the task he has to do is to satisfy his own purpose, the greater is his readiness for that task and for all things that work along that line, and the greater is his unreadiness for all things that stand in the way. He is able to do his work with concentration, and concentration implies as Kilpatrick points out,[1] the holding of an end in view, readiness

1. See Kilpatrick : *How We Learn,* Ch. V.

to work towards it, and unreadiness for anything else.

Even when a work is attempted for which there was readiness on the part of the subject at first, changes in attitude are likely to occur, with the consequences that progress is not uniform but is characterized by many ups and downs. These fluctuations may be for short or for long periods. The arrest of progress for a pretty long period is sometimes designated by the term "plateau." Plateaus often arise, though it is believed that they are not inevitable—for learning curves have actually been obtained wherein plateaus do not occur. Still it is worth enquiring why they should arise, as they often do. Some believe that they may be due to physiological reasons such as fatigue. Prof. Freeman thinks that one of the reasons for the occurrence of plateaus may be that the learner has a tendency at times to be satisfied with the progress already made and that therefore he does not want to make renewed efforts to improve his own score. Or, he may like to go ahead but is diffident about his own ability to advance. Another possible reason is that the method adopted is faulty, and that though some progress has been made better results cannot be achieved with that method. Again, there are learners who try to force their pace with undue haste, with the result that the earlier processes are not properly assimilated and that when they attempt to make use of these ill-mastered processes they find that the output of their labour is poor.

On the other hand there are occasions when the arrest of progress may be more apparent than real. It may well be that certain occasions of apparent stagnation are periods of consolidation, which result in better performance afterwards. This is why after a period of strenuous practice and a prolonged period of rest some persons emerge again into practice with a better score. Such seemingly idle periods are not really wasted, but give scope to the system to consolidate its gains acquired through vigorous exercise. This principle applies in the realm of ideas as well as of sensori-motor skill. A problem for instance may not be solved immediately ; still if the

subject allows his mind to linger on it the solution may later be arrived at, as it were, in a flash. "The process, called by Graham Wallas the stage of Incubation, may go on for a long while without a sign that anything is happening; but at last without warning and sometimes in most incongruous circumstances the stage of Illumination arrives and the happy idea emerges from the unconscious."[1] Consolidation occurs in this fashion in matters of skill so that it is said that "we learn to skate in summer and to swim in winter." If however the period of inactivity is inordinately long, there is a danger that what has been hard built up by use and practice may be lost through what some call *the law of disuse.*

Learning is an individual affair, but the individual's learning is affected by his membership of the group. When a child sees other children active in any pursuit, he also feels inclined to do likewise. We have seen how Seguin, the great teacher of feeble-minded children, made use of the inspiration of numbers to educate his idiot children (see page 151). A number of things are learned by children and by grown-ups in imitation of the performances of others. Imitation does not as we have pointed out in a previous chapter necessarily cramp originality and initiativeness; on the other hand young learners often adopt correct forms when they see others do it. Not only do we find that imitation and instruction often supplement each other in the educative process, but also a number of things are actually learned without any oral or explicit instruction whatever and without the learner being aware that he is learning—they are learned through unconscious imitation and suggestion.

It is suggestion that gives rise to what is called concomitant or attendant learnings. We learn different subjects like mathematics, history, geography and languages in the school; but we learn much more than these—we learn also a number of life-attitudes. As a matter of fact we began to learn them

1. Nunn: *Education Its Data and First Principles,* Ch. V.

before we entered school, and we continue to learn them after we leave it. Along with learning the so-called subjects, we also learn to love, hate, admire, despise and feel happy or unhappy about a large number of other things. These attitudes are of immensely greater importance than the regular school subjects. A boy learns poetry at school ; but he is lucky if he has a teacher who not only " teaches " poetry but himself appreciates it, is interested in his boys and in the progress made by each one of them in different departments, and believes in spending his spare time in doing bits of service to people who live in his neighbourhood. A boy who is fortunate to come into intimate contact with such a teacher learns a number of things incidentally. He learns to appreciate poetry in general, to care for the interests of others, and to make a wise use of time. Suppose on the other hand a teacher believes that boys are naturally lazy and vicious and that if they should be trained well they should be compelled to do their lessons and compelled to do little deeds of kindness. Such a man sets in action through contra-suggestion a hostile spirit in his boys who not only tend to dislike the teacher but also to hate the good things he so officiously stands for. Similar attitudes can be caught by children not only from seniors like teachers but also from their class-mates and play-mates. The teacher who does not give attention to the importance of these concomitant learnings fails in one of his elementary duties.

Noble sentiments are awakened in the young when they come into contact with good teachers or with inspiring friends or even when they read of high-souled heroes in history or fiction. But by the mere awakening of noble sentiments no one learns to lead a virtuous life. It is an important maxim in all learning that there can be no lasting impression without some form of expression. In acquiring moral courage and social virtues too, the same principle holds. Good intentions or noble sentiments cannot make anyone good, unless they are acted upon. Let the expression be, as James says, the least thing in the world—speaking genially

to one's grandmother, or giving up one's seat in a horse-cart or a motor-bus, if nothing more heroic offers, but let it not fail to take place. For, "when a resolve or a fine glow of feeling is allowed to evaporate without bearing practical fruit, it is worse than a chance lost; it works so as positively to hinder future resolutions and emotions from taking the normal path of discharge."[1]

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Thorndike and Gates	Elementary Principles of Learning, Ch. V.
Thorndike	Adult Learning, Ch. XI.
Wheeler R. H.	Science of Psychology, Ch. IX.
Ogden R. M.	Psychology and Education, Ch. XIV.
Freeman	How Children Learn, Chs. VIII, IX.
Kilpatrick	How We Learn, Chs. I-VI.
Starch	Educational Psychology, Chs. VIII, X, & XI.
Gates	Psychology for Students of Education, Ch. VIII.
Book W. F.	Learning How to Study and Work Effectively, Ch. VI.
Edwards A. S.	Fundamental Principles of Learning and Study.

1. James : *Psychology Briefer Course,* Ch. XIII.

XVII

LEARNING HABIT, MEMORY AND TRANSFER OF TRAINING

If learning is the modification of behaviour through experience, it naturally implies a capacity on the part of the organism to conserve the experiences of the past and to profit by them. The past is not dead but is actively operative on the present, though we may not always be conscious of its influence. A cyclist gives a lot of conscious attention to his effort when he first begins to ride ; but with more practice he becomes proficient at it with the result that later he executes movements with skill and ease, and does not have to devote his conscious effort on what he does with his hands or feet. Even such a simple and universal experience as walking or speaking is the result of much practice, though, as we found in the previous chapter, the place of maturation and of natural development is undeniable. But maturation alone without practice cannot bring about the various modifications of original behaviour we are accustomed to in civilized life. For instance the child may babble something without practice, by virtue of maturation alone ; but the fact that he speaks Marathi, English or Spanish is due to much attention spontaneously and deliberately given to the imitation of adults and other children. To walk is made possible through maturation, but to walk on " chappals " or shoes requires practice. To learn to

eat may not be hard, but to eat with Chinese chop-sticks or with spoon and fork has to be practised.

In a certain sense even maturation may be said to he learned or acquired. But the learning has been done not by the individual but by the race. It is believed in certain scientific quarters that the structure of an organism determines its function ; that our legs are so made that we cannot but walk, that our lungs are so formed that breathing is inevitable, that our vocal organs are so developed that after about two years of child-life, speech should naturally be expected. Why should we not on the other hand hold that the efforts of millions of generations to express themselves with the help of the mouth resulted in the development of speech organs, that the efforts of millions of successive generations at locomotion led to the adaptation of the structure of the body for walking, and that similar efforts made from the beginning of animal life led to the differentiation and development of the various visceral organs ? This is what the theory of adaptation to environment implies. In the field of psychology it has been particularly emphasised by the *purposivist school* and by *the Freudians* that not only structure affects function but that function, constant use or disuse, affects the normal health and efficiency of the body and its parts and of the mind. For example it is not a rare occurrence that suggestion of a certain disease brings about that disease in the person to whom the suggestion is made. Even instincts and reflexes can be said to be due to the conservation of experience of millions of generations through what may be called racial memory.

Unconscious memory—if that term be permissible—is operative in race habits as we have just seen and in personal habits, habits acquired by each individual by exercise and repetition. Any activity that is constantly and regularly repeated tends to become a habit. But when the habit is well established there is no need of any conscious reference to the original experience. The action takes place as a matter of

course, and conscious attention can be devoted to something else. There are habits of skill, motor habits as they are called ; habits of social life ; and some people even speak of emotional and thought habits. These latter may perhaps be more correctly described as attitudes : attitude of observing the details of a topic in hand or of being satisfied with a general view, of carefully investigating a new thing or passing over it in an unconcerned manner, of always looking at a thing in a bold or timid manner, of being interested solely in one's own affairs or being interested in others, of thrift or extravagance, of being credulous or cunning, of being suggestible or critical.

Much light has been thrown on the mechanism of habit formations by the *Behaviourist School* of psychology. The Behaviourists speak of habits as the result of conditioned reflexes.[1] All behaviour according to them is the result of responses to stimuli—or, as the American formula goes, of the formation of S-R bonds. A certain stimulus or series of stimuli results in certain responses in the finely adjusted machine of the living being, man or animal. Many of these responses are unlearned and innate, and are not due to deliberate practice, and are therefore spoken of as unlearned or unconditioned reflexes. But the physiological system whether in man or in any other animal is capable of establishing responses to new kind of stimuli. Food put in the mouth produces secretion of saliva in animals, while the ringing of a bell or the beating of a drum or the presence of a patch of red light does not. It has, however, been demonstrated by the Russian physiologist, Ivan Petrovich Pavlov, that any of these latter sense-experiences may be made the occasion of salivary secretion.

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1. According to Watson, the relationship theoretically between the simplest cases of conditioned responses and the more complicated, integrated, spaced and timed habit responses is quite simple. It is the relationship of part to whole— that is, the conditioned reflex is the unit out of which the whole habit is formed. In other words, when a complicated habit is completely analyzed each unit of the habit is found to be a conditioned reflex. See John B. Watson *Behaviourism*, Ch. IX.

A simple operation is performed on a dog by making a fistula of the duct of the parotid salivary gland at about the level of the second molar, and a tube is inserted into the opening so that whatever saliva is secreted by the dog does not fall into the mouth but passes out into a glass or metallic funnel. With this device it is possible to check and measure the secretion of saliva. The experimenter sounds a metronome ; and, after a few seconds, food is served out to the dog. This is repeated several times for a number of days. In the beginning of the experiment the metronome and the serving of food are not apprehended by the dog as one series of events, with the result that no remarkable reaction takes place; but in course of time the sound of the metronome serves as a stimulus for salivary secretion—in other words, conditioning has taken place. " In this way it becomes possible gradually to elaborate conditioned reflexes in the dog to the flashing of an electric lamp, to the appearance of various figures in the animals' field of vision, to the sound of an electric bell, trumpet or telephone, to a rhythmic contact of blunt or sharp objects with the skin, to warming or cooling of particular portions of the surface of the skin, and so on. By systematically applying such stimuli, it has been found out that the stability of the elaborated conditioned reflex, on being repeated a number of times, grows until it reaches a certain constant figure."[1]

The conditioning may apply to the stimulus-pole or the reaction-pole of behaviour. Let us take the stimulus-pole first. We have been considering the influence of a ray of light or of a bell on a dog. Here has been a *conditioning of the stimulus.* We take the flow of saliva as the constant factor, and different stimuli are substituted in the place of the original food-stimulus. In the same way the stimulus can be kept constant and there can be conditioning or substitution of responses. Let us take the presence of a certain dog as a stimulus. A small child play-

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Y. P. Frolov *Pavlov and His School.* (Kegan Paul, 1937, Ch. II, Page 52.)

ed with it yesterday, but was bit by it. So to-day at the same stimulus (presence of that dog) the child screams and runs away. Following Watson[1] we may put it as an S-R pattern thus :—

Yesterday	S (sight of dog)	R (play and laughter)
Today	S (sight of dog)	R (screaming, running away)

The substitution of responses—*conditioning of the response* —is as important as the conditioning of stimuli, and has even greater social bearing. It is important that persons should form healthy and cheerful habits in regard to even those situations normal reaction to which is not within one's present possibility. Take for example youth and sex. There are many young men and women to whom marriage is not an immediate possibility, and it is imperative that they should react indirectly towards sex stimuli and sublimate their natural impulses. In other words they should condition their responses to situations fraught with sex stimuli. In this process of personal adjustment of responses we are much affected by the society in which we live and by its standards and conventions. Many things that we do are done by us either because we consciously imitate others or because we are affected by mass and prestige suggestion. Habits of dress, habits of smoking and drinking, of social customs, of standing faithfully by the standard of religion, denomination or community—these are affected by the particular social milieu in which our life is spent.

Everyone, old or young, who makes any progress in art or craft or games makes new *conditioned responses*—or habits—and improves upon old ones. The best period for the formation of habits is undoubtedly childhood when the body is much more

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[1] John B. Watson *Behaviourism* ("Lectures-in-Print" Series, Ch. II., 1925).

plastic than in later years and when life is full of new interests. But there is no reason, as we observed in the last chapter, why any grown-up person should not learn new things and cultivate new habits. If a rat never appears, as Watson points out, to grow too old to learn the maze, there is no reason why "humans" should stop learning. Watson, acknowledged Behaviourist as he is, even goes to the extent of suggesting that something must be done once in a while to disturb the average householder so that he may be forced to learn new things. If, as in the case of rats or rabbits, such stimuli as food, water, sex and shelter had been kept under control in the case of men and women, it would have been possible to force them too to continue learning and form new habits !

Many psychologists recognize that one of the greatest chapters on habit formation is the one written by James, which readers of this book are recommended to study.[1] If a person wishes to break an old habit, the right way to attempt it is not to be satisfied with a negative effort to discontinue that habit but to strengthen this effort by positive attempts to build up new useful habits in the place of the old one he seeks to break. This does not mean that inhibitory efforts are valueless. Pavlov's experiments in conditioned responses scientifically prove that a habit once established can be weakened and even made to disappear. A dog may be taught to secrete saliva and to be ready for its feed at the sign of a bell or a metronome or a red patch of light ; but, if the artificial conditions are not uniformly maintained, the stimuli fail in course of time to evoke the conditioned response. Hence the importance of the caution sounded by James that there should be no exception in regular, systematic practice if a new habit should be firmly established. Sustained and uniform practice is of supreme importance both in the establishment of new, and in the inhibition of old, conditioned responses. The more extensive and long-standing the practice, the firmer is the habit established. This is why we

[1] James *Psychology Briefer Course*, Ch. X. or *Talks to Teachers*, Ch. VIII.

accept another formula of James regarding habit formation—that there should be some gratuitous extra practice. The practice should not stop just when the necesary skill is acquired, but it should be carried further than the required minimum limit.

Memory is involved in all habits. Without the functioning of memory, of learning and retaining things, no habit can be established. But when once it is firmly fixed, consciousness, as was observed before, is so far relieved. The learner repeats himself i.e., repeats the old processes or chain of events by virtue of what has been variously described as habit memory, motor memory or physiological memory. But pure memory—it is also called image memory, or better still psychological memory—always implies a consciousness of the past, a sense that what is now experienced was once experienced in the past. It is therefore sometimes defined as imagination envisaging the past ; for it represents a matter that was once present.

All memory, psychological or habitual, implies a sense of familiarity with the given situation. In pure memory the sense of familiarity is re-inforced by the belief that " this is familiar ", that " something like this happened before." In ordinary life however there are numerous occasions when we feel a sense of competence and confidence even in those situations where the sense of familiarity is not marked enough to make us clearly recall the circumstances in which a similar event or situation was experienced in the past. For instance we may not be able to recall a name ; but if we come across it in a newspaper it is at once recognised. There are faces that we cannot recall but which we immediately recognise when we see them. Certain phrases that we use or certain illustrations we make use of may sometimes be honestly imagined by us to be our own, original creations ; but later on we may discover that they are virtually reproductions of what we had come across elsewhere. In the life of Helen Keller we read of a story which she had published as her own but which later she discovered, to the chagrin of her sensitive mind, to have been only a reproduction of an original story by someone else. The small

boy who composed the story given in Chap. XIII made another story and honestly believed it to be original, but when he told it to his classmates they found it to be an adaptation of another story they already knew. Perhaps our little story-teller had heard it too, though he did not remember to have either heard or read it.

Recognition of things learnt have a real place in the class-room even though it does not have the explicitness of recall. This view is accepted by framers of new types of examination papers, in which *recognition-tests* have a definite place. In acquiring mastery over language, whether it be the mother tongue or a new language, we find that we can recognize in proper context the meaning of a rather unfamiliar expression even when we can neither recall nor explain it in isolation. To insist in language lessons that every new expression should be thoroughly learned before the learner is allowed to proceed further is an indication of mistaken zeal.

In order to be able to properly recall any thing, to remember it, the recording must be done well, i.e., it must be learned well. All the principles of learning that we referred to in the previous chapter are of importance in this connection. We shall mention a few more that condition efficient learning. In the last chapter we referred to the principle of readiness. This applies however not only to the mind but to the body. We learn things best when we are fresh, and we cannot expect to be fresh in mind when our body is in a poor condition. The relation between body and mind is particularly noticeable when we set ourselves the task of learning something exceptionally hard, whether it be the acquiring of new and delicate skill, or solving an intricate intellectual problem, or getting on amicably with an irritable colleague or superior. Common-sense usually directs students to apply themselves at home to the harder tasks early in the morning, or a little while after they sit down for their studies after recreation in the open air and their evening meal.

To learn something well implies introducing system into the learning. Systematic learning is connected learning, connection being established between the old and the new. No progress takes place unless the new is related to the old. In the famous *Steps of Herbart,* the first place is given to preparation. Before new matter is presented to the learner, he must be prepared to receive it by having necessary associations revived. Association of ideas and experiences is of great help in bringing about a sense of relation between the old and the new. Though ideas do not function by virtue of their own importance or entity, there is no doubt that one idea in a person's mind is related to another and still another and so on. If we do not make the false assumption that ideas exist by their own virtue there is no reason why we should not use the good old expression *Association of Ideas* in a figurative sense. It puts a welcome stress on factors that help to keep impressions and experiences inter-related, factors that are commonly described by the terms contiguity, similarity, recency, primacy and vividness. In text-books of psychology written towards the close of the last and the beginning of the present century these were referred to as *Laws of Association.*

The *law of contiguity* says that two things that occur together or in immediate succession are usually remembered together. If while I was talking with a friend a thunder-storm arose which caused him some physical injury, I am likely to think of my friend again whenever a similar storm rages. The *law of similarity* says that when two things are similar they are associated together in our minds. Contrast may be regarded as an application of the principle of similarity for two things are contrasted with each other only when certain factors are common between them. The *law of recency* says that other things being equal a recent occurrence presents itself more clearly to the mind than a remote one. Hence the practical wisdom of examinees who rapidly revise on the eve of the examination portions that were thoroughly learned some time back. Among past events, the earliest of its kind is better remembered

than the succeeding ones. We all can recall better what happened in the first day or the first week of our life in new surroundings than the events of, say, the third or the fourth. This is known as the *law of primacy*. Even out of the succeeding days we re-call the events of those days on which we had vivid or striking experiences such as on the day on which we participated in a procession, or took an active part in a debate, or did a particularly heroic deed. This is known as due to the result of the *law of vividness*.

All the laws of association we have noticed refer to the cognitive aspect of life. We should not however lose sight of the fact that mere cognitive apprehension of a number of events is not effective enough to establish permanent bonds between them, and that wherever ideas are strongly associated there is behind that system of ideas a sub-stratum of a common emotional experience. This *common emotional background* helps to link together several, independent ideas, thereby rendering the association more powerful. In the example of one thinking of his friend whenever there is a thunder-storm, the thought is very likely due to the emotion of fear and tension that the occasion produced, and both the ideas—of the friend and the storm —have been turned into a pattern of a system by the glue, as it were, of the common emotional tone. Similarly, if we react in a certain way to a number of events or situations, that *conative effort* also tends to reinforce the associations. This is why it is said that we *learn to do by doing*. The movements of the parts of a machine can be separately studied and their combined working can be explained to a certain extent with the help of figures and diagrams, but the bits of knowledge never become effectively associated until one begins to make active use of them. A student does not learn to compose a story or translate a passage by associating all the ideas or directions given by the teacher until he begins to tell or write it himself. When he begins to do it, this conative effort converts the cognised details into a complex or associated system of knowledge or skill. The same is true regarding moral habits and attitudes;

we learn to do by actual practice in doing. Laws of association, though they may appear at first to be expressions of pure cognitive effort, are essentially and inevitably related to emotional and conative reactions.

System applies not only to the relation between the old and the new it applies equally to the organization of the various parts of the new material. A large number of details regarding a central topic—details that form a pattern or a *gestalt*—are remembered better than a fewer things that are not intrinsically related to each other. The details of a geography lesson on China for instance can be learned and remembered well when a few inter-connected important topics are taken first and minor points are linked on to them. We may start with, say, the huge population of the country and then try to find out in which places the population is densest, how climatic conditions help the growth of population, what food materials are easily procurable, what things are needed from outside, who would care to be friendly with the country, who may be its enemies, and so on. This inter-relatedness of materials is equally important in other branches of study such as history, literature, science or mathematics. The *Gestalt School of Psychology* especially emphasises this integration of parts into a single pattern. As one enthusiastic advocate of gestalt psychology puts it "The members (of a pattern) are held together not by the external agency of an associative 'glue,' but by the transformation which they have undergone in losing something of their individuality."[1] Even in learning a long series of non-sense syllables, which are entirely disconnected entities, the mind is engaged in evolving some kind of a system out of the discrete objects with the help of the look and the sound of syllables. Mere repetition, without rhythmic or positional patterns that convert disconnected units into a connected series, does not lead to any learning.

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1. R. M. Ogden *Psychology and Education*, Ch. XII.

In experiments on memory it has definitely been proved that in learning a poem or prose passage by heart the repetition of single lines is a waste. The suggestion offered is that as far as possible the whole passage to be learned should be repeated from beginning to end. This is not perhaps quite practicable when the passage is very long ; then it is advisable to break up the whole into smaller units, taking care to keep the unit as big as possible. The danger of breaking the whole into a large number of small units is that the wood may be lost sight of in the search for the trees we may learn the different parts separately, but the parts may not cohere into a pattern or a whole that maintains a unity of form or a sequence of sense. But confidence on the part of the learner is an important factor in learning, and the part-method often gives more confidence to the learner, especially when he is a beginner. The ideal however should be to take in hand as large a unit as possible. Even when the part method is adhered to by necessity, attention should be given to the meaning of the whole before the parts are intensively studied.

To "cram" unintelligent material is possible, but it is much easier to learn a passage the meaning of which is clear to the learner, for then he can discover the configurational nature of units and can make a system out of them. Numerous experimental investigations have confirmed our common experience in this respect. Ebbinghaus who was one of the first to make systematic experiments on memory "found that he could learn significant verses eight or nine times as quickly as material consisting of nonsense syllables."[1] Meaningful things are also retained, when once learned, for a decidedly longer period than meaningless things.

The mind-set or attitude of the learner is also, as we have more than once observed before, an important factor in learning. One man may take a horse to water, but ten cannot make it drink. Even unintelligent matter can be memorized by those

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1. Sully : *Teacher's Handbook of Psychology*, Ch. X.

who make a definite purposive effort ; but the most significant things will not make any considerable impression on those about whom it may be said :

> My heart's in the Highlands, my heart is not here,
> My heart's in the Highlands a-chasing the deer.

Such persons may be expected to learn many things with avidity regarding the Highlands, but not about the things that are "here" Pintner refers to an old story[1] of a boy who was punished by the teacher for writing "have went" for "have gone" The boy had to sit up in the class after others left, and had to write the correct form a hundred times. When he finished the task he thought he would politely leave a note to the teacher to inform him that he did what he was told to do, and so wrote, "Dear teacher, I have done my work and seeing you were not here, I have went."

To learn things with understanding is useful ; but there are certain things which it is desirable that we should learn by heart even in childhood. The multiplication table, certain formulæ, certain grammatical rules and peculiarities—these may very well be learned by rote even if a full understanding does not accompany the repetition process. Many of these items of elementary knowledge are of constant use in daily life, and always to have to consciously work out the detailed processes involved is a waste of time and energy.

We should at the same time admit that in the school and in the world we come across a large number of things, and even systematically learn certain things, which we do not remember later on. Lapse of time, lack of abiding interest or purpose, unimportance of the details learned, the crowding out of a new interest or experience by another one that immediately follows, or painful associations—these are some of the factors that lead to forgetfulness. The last two deserve special mention.

Painful associations are distasteful to us, and we try to

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[1] Pintner : *Educational Psychology*, Ch. VIII.

drive them away from our mind whenever they crop up. This pressing down of an unpleasant idea is often done consciously, but later on it is done automatically ; repression thus leads to forgetfulness. Even when our conscious self with its sense of social obligation and responsibility wants to remember certain things, repression puts a break, as it were, on the chain of remembrance.

When an idea or event is immediately followed by another of a different nature, the latter tends to remove the former from consciousness. In educational institutions, the immediate following of one subject by an entirely different one without the break of even a few minutes, does not indicate a wise economy of time. Similarly in ordinary life a shock or the sudden announcement of a highly exciting news, whether good or bad, leads to the amensia (forgetfulness) of what immediately preceded. When the forgetfulness is only of a few events that immediately preceded the shock, it is called retroactive amnesia. More serious cases are reported where a person even forgets his home and his own name, and sometimes even loses the power of speech and of conceptual thinking. These are cases of retrograde amnesia. Such persons can be restored to normal life by a patient and careful process of re-education.

All forgetting however is not harmful. For one thing it is good that we are not burdened and pressed with the consciousness of all things that we ever saw, heard, read or thought. Secondly, if we always remembered what was casually seen or even closely studied by us there would not be much scope left for us to think independently or do things in an original way. Again, is it not a blessing that some of our deep sorrows and disappointments do not always remain fresh in our minds ? On the other hand it is also necessary to remind ourselves of the fact already noticed (vide p. 218) that a thing being not recalled does not, however, mean that it is no more retained. A boy having thoroughly memorized a poem to recite before an audience may forget most of it when the expected hour arrives, but may be able to recall the whole pas-

sage again when he returns home and is free of nervousness. Similarly long forgotten incidents of childhood sometimes saunter, as it were, into consciousness in an idle moment. As a matter of fact one of the tenets of the Freudian school of psychology is that nothing that happens to an individual can be assumed to be finally forgotten and that even incidents supposed to have been long forgotten can be revived by appropriate means.

The rate of forgetting is not uniform. It has in recent times been noticed that two contrary factors are operative when a thing has been learned, that of oblivescence and reminiscence. Many elements are forgotten but very soon a number of things at first forgotten are saved from oblivion, and this latter process is called reminiscence. It is believed, on the basis of numerous experiments, that reminiscence is generally highest a day or two after a thing has been learned and that afterwards it gradually gets less effective. Forgetting itself (oblivescence) is very rapid immediately after learning, and more gradual later on. Considering both these aspects of memory, we realize how advantageous it is to have the relearning of a given material attended to frequently at first, though later on repetitions may very well be rarer. If students who attend to a difficult lecture in the college will go through their notes the same day, read a relevant chapter in a book on the succeeding day, and then read it a second time a week or two later, they are likely to remember the matter much more effectively than if they read the notes once and the chapter twice at the end of the period mentioned. Starch mentions a number of investigators who have experimented with nonsense materials and with passages of prose and poetry and have verified and confirmed the observation of Ebbinghaus made in 1885 that where memorization is desired, it is better to distribute a given amount of time over three days than to spend it all in one day.

Before passing over from this subject we shall refer to one or two popular opinions regarding memory. There are

systems that offer to improve one's memory. Modern psychology however lays emphasis on the *one who remembers* than on his memory. If a person attends better to the matter in hand and builds up more associations round it, i.e., links it on better to the rest of his life—to his general knowledge and his wider purposes and life-interests—he can remember it better but it is very doubtful whether his memory as such can be improved in the same way that a particular muscle can be developed. Better learning is possible, and therefore better retention and recall. But whether the original capacity to attend to things can increase by exercise is doubted by those modern psychologists who with James and Spearman believe that the sum total of mental energy of each individual is practically limited.

Persons or institutions that offer to cultivate and strengthen memory are directly or indirectly asking the public to believe in what is known now-a-days as *transfer of training*, one aspect of which we referred to in connection with sense training. A third aspect of the problem of transfer makes its appearance in the realm of moral values. •Morality is impossible without the formation of right habits ; but habit alone does not give a strong and integrated character. Habit must be inter-penetrated with permanent ideals of life. We deal with this question in Ch. XXII. Here we shall very briefly deal with the theory of transfer in relation to memory in particular and to such other mental activities generally as observation, imagination, reasoning, etc., which until the beginning of the present century were usually called faculties. That there are no such faculties as have independent, separate existences has been made clear earlier in this chapter and elsewhere. James is described as having thrown a bomb-shell on the theory of the cultivation of faculties when he learned certain lines from Victor Hugo at first in the course of eight days, then learned for a few days lines from Milton's Paradise Lost, and then again a passage from Victor Hugo for some days. The presumption was that, if memory became stronger by practice, he should take a comparatively

shorter time for learning an equally long passage from Victor Hugo the second time he attempted it. What he actually found was that he took a slightly longer period for the task. Though the way the experiment was conducted was far from faultless, the publication of this result led to a large number of other experiments being conducted for the purpose of ascertaining whether or how far learning in one subject is transferred to, that is to say facilitates learning, a similar or different subject. We do not here propose to enumerate the experiments—a number of which have been mentioned by Starch, Pintner, and Sandiford in their educational psychologies (to which the attention of the readers of this volume is invited). One thing is fairly clear from these experiments, namely, that there is evidence of the possibility of some transfer though the transfer or the spread of improvement is not anything so far-reaching or wholesale as was commonly supposed to have been the case about forty years ago. On the other hand it is absurd—as Throndike himself, one of the prominent investigators in this field, points out—to jump into the conclusion " that all practice is utterly specific in its effects ".[1]

It is not very flattering to us, teachers, that we should be considered to be teaching certain things which are useful only in very limited fields and cannot have any wide application. There is no reason however why the experiments on transfer of training should discourage us, either. Memory as such may not be cultivated by learning any number of non-sense syllables or long passages from Sanskrit poetry or prose in the mother tongue. But the learning of these things is not entirely useless. If apart from the usefulness of the relevant informational content of the passages learned, the pupils can be helped to evolve in the course of those memorizing efforts right methods of learning certain things by rote such as the evolving of patterns of meaning and sound in a given passage, the mastery of those methods is likely to be helpful to them not only in mastering

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[1] *Educational Psychology Briefer Course*, Ch. XVIII.

the particular passages concerned but others as well. If in doing sums in arithmetic children get into the habit of ignoring irrelevant factors and of making useful logical arguments and generalizations, the habit of generalization is likely to be helpful in many situations—not only in the one in which they learned to reason and generalize at first. If students form ideals of neatness and thoroughness, and of doing systematically and conscientiously whatever they put their hands to, that ideal goes along way to make all their work neat, thorough and systematic.

The personality and the general attitudes of the teacher are of special importance in this connection certain teachers so handle their subjects and their pupils that the latter are enabled to apply their knowledge to a large number of intellectual and practical problems, while there are teachers who give the impression that the subjects they deal with—history or geography or mathematics or literature—are all of importance only in passing certain inevitable school or public examinations. This is why it is believed that while in the matter of transfer of training a certain subject can be more useful than others, it is still more possible that the teaching of a certain teacher may have more transfer value than that of many other teachers. As Hamley says " It is not Latin which avails, but Latin as studied by a person named John, under the inspiration of a teacher who appreciates his subject, and is able successfully to convey his appreciation to others."[1]

Another common opinion which scientific enquiry does not seem to support is that children can memorize things better than adults. What we have said concerning learning in general (see pp. 202 and 217) is applicable here too. There is no reason to suppose that memory is at its best during later childhood, any more than that learning is at its best during this period ; and we know that adolescents and adults, even those who are about 45, can learn things much better than children.

H. R. Hamlay *Formal Training* in *British Journal of Educational Psychology,* November 1936.

Perhaps these latter retain certain things better than the former ; if this be so, it can be explained without necessarily presupposing a natural superiority in retention. The fact that the younger folk have fewer distractions and do much more repetition in their limited fields than the adolescents and the adults is perhaps as good an explanation as any other for their supposed superior capacity to retain and reproduce facts and figures once memorized. Is it not also a fact that popular opinion regards only that portion of the matter we can reproduce from the amount learned in our childhood, and that we conveniently ignore the vast mass we have forgotten ?

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Fox	Educational psychology, Chs. V, VI, & VIII.
Sully	Teacher's Handbook of Psychology, Ch. X.
Aveling	Directing Mental Energy, Cs. VI.
Colvin	Learning Process, Chs. IX & XI & XIV—XVI.
Starch	Educational Psychology, Chs. XI, XIV & XVI.
Sandiford	Educational Psychology, Ch. XIV.
Sturt & Oakden	Modern Psychology and Education, Chs. XII & XVI.
Bertrand Russel	Analysis of Mind, Ch. IX.
Thorndike	Educational Psychology (Briefer Course), Ch. XVIII.
Edwards	Fundamental Principles of Learning and Study, Chs. X, XI & XIII.
Book W. E.	Learning How to Study and Work Effectively, Ch. XIX.

XVIII

ATTENTION, INTEREST AND FATIGUE

Before passing on from the psychology of learning to that of conduct, we shall refer to a topic which is important in both these branches of our study. In one of the early chapters (Ch. III) where we considered the biological characteristics of man we referred to his selective activity which he shares with all other organisms of the animal or vegetable kingdom. This selective activity when applied to man especially to his conscious mental life, is called attention. Our senses themselves, as James points out, are organs of selection.

"Out of the infinite chaos of movements, of which physics teaches us that the outer world consists, each sense-organ picks out those which fall within certain limits of velocity. To these it responds, but ignores the rest as completely as if they did not exist. Out of what is in itself an undistinguishable, swarming continuum, devoid of distinction or emphasis, our senses make for us, by attending to this motion and ignoring that, a world full of contrasts, of sharp accents, of abrupt changes, of picturesque light and shade." [1]

✓ Even among the sensations that the senses catch up, the mind again exercises a process of selection, and the selective attention which each person exercises determines his progress in practical knowledge, rational thinking, aesthetic appreciation, social adjustments, and development of will and character.

✓ All attention "is at once a process of reinforcing and weakening."[2] The stream of consciousness is always and ceaselessly

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1. James *Psychology Briefer Course*, Ch. XI. p. 171.
2. Sully *The Teacher's Handbook of Psychology*, Ch. VI.

going on in each individual. Now one thing, now another, the next moment a third—thus we are always engaged in our mind. Deep, dreamless sleep—if ever there is—is perhaps the only occasion of complete relaxation when the mind ceases to attend to anything. Activity even of the passive kind and inattention are incompatible terms. But that is not what we mean when we say we attend to a thing. When the reader attends to the trend of thought of this paragraph he does not think of the number of lines on this page, nor about the colour or quality of the paper on which this chapter is printed. If there is a passing tendency to think about any of these matters, it is at once inhibited; all these things may be somewhere in the ambit of consciousness and any time may come to the focus of attention ; but now they are all in the fringe. If any one of these things, say the kind of paper used in this book, becomes the central object of attention, the study of the psychology of attention recedes to the margin of consciousness, becomes marginal as it is sometimes put, and the quality of the paper becomes salient in attention.

✓How does any thing, any object of senses or of thought, become salient ? First of all it should be noticed that it is not through any special faculty called attention that we attend. It is the whole mind, the whole person, that attends ; and what is called attention is only a name for the mind's selective attitude towards external or internal stimuli. There is no such entity or faculty as attention any more than there is a memory or a will ; there are persons who attend, who remember, who will (see also Ch. XXI) In popular language we may speak of giving our attention to the matter in hand ; but really, we do not give it any thing at all, as Stout points out, but are only "making the mental adjustment necessary for the perception of that object to attain prominence in our field of consciousness."[1]

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1. Stout *Groundwork of Psychology*, Revised by R. H. Thoules, Ch. IV.

Attention is closely related to interest for we attend to only those things in which we are interested directly or indirectly. What then is interest? First of all, we notice that it is not identical with pleasure. Pleasurable things interest us, but not they alone. Distinctly unpleasant things also often interest us. When a friend is ill, we have no pleasure in his illness, but we are keenly interested, painfully interested, in the rise of his temperature. When the examination results are due for publication, even those who are sure to fail are interested in them. It is true that we can connect these and other examples of painful interest in a roundabout way with the pleasure principle ; but the clearer and more characteristic mark of interest is the feeling that something is of some value to us, that there is an air of worthwhileness about it, or as Ross points out, that *it matters* to the person concerned.

The term interest is often used in two distinct but closely connected senses. There are certain things that always tend to evoke a response in a man, such as the group, a strange phenomenon, a member of the opposite sex, a helpless child or animal—in other words, they interest him. Interest in this sense refers to a more or less permanent attitude, to the structure of the mind. There is an abiding disposition to attend to these things. Interest is used for a more transitory experience also. For instance there are fashion vogues in society among men and women—so too among school children—in the matter of dress, food and amusements. For a few weeks, a group is very keen on ring-tennis ; then the chief place is given to badminton ; then everybody plays volley-ball or foot-ball ; and for two or three months all playful activity and all delight is in the cricket-field. The keenness for these changing objects may also be described as interest ; but in this sense we apply the term to passing experiences, and not to enduring dispositional attitudes. The word is used in a third sense also, to denote, as Sully points out, " the things, topics, actions, etc., which arouse in (man) the feeling of interest." When we use the term interest in this sense it is definitely an instance

of what in grammar is known as transferred epithet. Thus we say "His chief interest is tennis," "Her interest is the collection of curiosities," "Your interest seems to be philosophy."

From these observations it follows that some of our interests are primary and innate. We attend to them spontaneously and without any strain or effort. Animals can be made to do things only when we call into operation their instinctive needs such as desire for food or for mate, their keenness to get out of a frightful situation or to fight with a rival, etc. Once while musing over material for a lecture on this topic I saw a fighting ram being taken home by its keeper. Somehow the animal was quite reluctant to obey the keeper, who then resorted to a psychological trick. He went before the ram and moved his hand in such a way as to suggest to the animal a gesture of fight. The trick worked like magic instead of being dragged forward by force the ram ran after its imaginary opponent! The keeper appealed to the fighting instinct of the ram and immediately succeeded in his purpose. Loud sounds, bright colours, moving objects—these interest the small child. The elementary school child finds learning easy if his native interests are awakened through play, through manipulation of things and through stories which describe such instinctive reactions as fear, fight, self-assertiveness, pity and curiosity.

As the child grows up he learns to be interested in a number of things which do not directly appeal to his instinctive life. He begins to value things and movements from the standpoint of the approval or displeasure of parents, relatives and friends. He slowly builds up an elaborate system of loves and hates, a system of positive and negative sentiments. A young man may have a sentiment of loyalty to his class-mates, and he is interested in whatever that happen to his friends even if he is not personally concerned in their actions. Or he may be interested in one special branch of studies or in one particular kind of game. One who is actively interested in

anything observes more facts about it than others, learns more about it, and remembers much more efficiently the processes and relations once observed than the one whose interest in the matter is of a passive nature. In this respect derived or acquired interests are at least as important for education as native or innate interests.

What we have noticed about interests has immediate application in the study of attention. We attend to certain things spontaneously. Instinctive dispositions make us attend to certain affairs or processes without any effort on our part. As gregarious beings we are interested in and attend to the doings of others we attend to certain persons with deference and respect, and we attend to the weakness of others and make an effort to make them do our behest—negative and positive self-feeling. We attend to men and things that are likely to do harm to us or oppose us ; we are naturally afraid of them or get angry. Our curiosity is stirred by strange things, and we attend to them. Boys and girls are mutually interested in each other—so too men and women—and attend to them. We also attend to all those things round which we have developed a system of sentiments. Practice and sustained interest in any special line enables us to observe the details of that department of life even where such observation was a matter of hard effort in the beginning.

Spontaneous attention is contrasted with willed attention, which is more often called voluntary attention. There are however differences of degree within spontaneous attention itself. Pillsbury thus speaks of non-voluntary and involuntary attention.[1] By the former he means the effect on a person of those pleasant subjective conditions such as favourable mental attitudes, predisposing purposes and previous acquaintance with similar situations—conditions that give him spontaneity and easy scope for self-expression in the selection of sensations ; while by involuntary attention he refers to those objective

1. W. B. Pillsbury *Essentials of Psychology*, Ch. V.

conditions "that may be opposed to the purpose and to the dominant ideals of the moment." Pillsbury thus regards non-volitional attention as something in the nature of a positive help in regard to the accomplishment of one's purposes, while involuntary attention implies objective stimuli to exclude which is the object of effort. It is useful however to admit, as Pillsbury himself does, that the different forms of attention cannot always be easily distinguished though they serve the purpose of a rough, practical classification.

Voluntary attention has an important place in education. All new teaching lays emphasis on the rôle of interest as an aid in learning. But life presents us with a number of situations which we have to meet and adequately respond to, whether we like them or not. Some of the situations may later on turn out to be highly interesting but for the moment they present bleak, uninviting phases. There are certain things which one should do, whether they are interesting to him personally or not—he cannot at once neglect them and be steadfast in his own ideals or be loyal to his comrades who put their trust in his good sense. What is true of the outside world is true of the school-room too one has to learn things that are not immediately interesting. There is no point in telling pupils to learn certain hard things merely because they are hard—we are not indiscriminate believers in the transference of training. On the other hand it is equally short-sighted and in some respects more pernicious to entertain the view or give young folk the impression that we believe that because something is not immediately pleasing or interesting it may be safely neglected. Attending steadily to uninteresting details, plodding on through drudgery as it is popularly described, is an important element in all achievement within the school-room as well as in the work-a-day world of practical life. All the same it does happen that when an individual makes up his mind to do his duty, such things as his general mental attitude, his immediate purpose, his previous knowledge, the joy of accomplished work, the approval of discerning

friends, and his own sense of self-respect—all these combine to make his task easier and to give him a much more abiding and finer sense of worth-whileness than if he were merely moved from a distance by a wistful and unavailing desire, or had even rashly followed his first impulses. Like Longfellow's Village Blacksmith

> Toiling, rejoicing, sorrowing,
> Onward through life he goes ;
> Each morning sees some task begun,
> Each evening sees it close ;
> Something attempted, something done,
> Has earned a night's repose.

How long do we attend to a thing ? We sometimes feel that we sometimes attend to a certain subject for a pretty long time—for an hour, for two hours and sometimes for even longer periods ! On closer examination we find that the period of, say, two hours we complacently thought we had spent on a subject was not exclusively devoted to that subject. On several occasions our mind wandered and we had to bring it back again and again to dwell on the point at issue. From wider and more systematic observations made by experimenters it is now commonly held that we cannot attend continuously to any one subject for more than a few seconds at a time,[1] and that prolonged attention to a subject means a series of repeated attentions given to it. Even in this respect there are marked differences between one individual and another. The previous experience and education of the individual as well as his original and innate mental make-up and energy affects his capacity to look at a thing from different

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1. Titchener thought that the experiments made were not conclusive and that the fluctuations noticed may be merely physical. He held that a single wave of attention may continue for at least two or three minutes, and said that he would not be surprised if it should turn out that the steady level may be maintained for two or three hours. See his *Textbook of Psychology*, 1910, Macmillan—Reprint of 1924—p. 293.

points of view and to ask himself questions about it.

To put questions to oneself is an important element in all prolonged processes of attention. In teaching others too, one significant difference between a good teacher and an indifferent one is that the former is able to put such questions as would enable his pupils to see new vistas of thought and to look at familiar matter from new standpoints. In a good teacher's hands, questions are not so much for testing the knowledge of his students as for stimulating their thought and for helping them to see new things. Even testing itself is for a more constructive purpose than mere exploration. The best teacher is one who not only rouses the learners' curiosity by his own questions but so leads them that they put questions to themselves and then proceed to observe and study in order to find out answers, answers which in their turn give rise to more questions and further searches, to researches ; for the main condition of sustained attention in the teacher, student, or anyone else as James picturesquely puts it, is "that we should roll it over and over incessantly and consider different aspects and relations of it in turn."[1]

The span or range of attention is another aspect of the question that has been put to much introspective experiment. We do not here propose to attempt a description of the experiments made but will content ourselves with a reference to the findings which are commonly accepted without much opposition. The generally accepted theory is that we attend to only one thing at a time. This statement when baldly stated requires some qualification ; for we do a number of things at any one time and without some selective attention none of them could have been done. But there is difference in the degree of intensity of attention. For instance we may walk and at the same time think of the solution of an intellectual problem ; but the first is rather an automatic activity which does not occupy the focus of attention. When two ideas or

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1. James *Psychology Briefer Course*, Ch. XIII.

processes both require our deliberate attention, we rapidly pass from one to the other. Those who are credited with the extraordinary capacity of doing simultaneously a number of intellectual pieces of work like Julius Caesar who is said to have dictated four letters to four secretaries, or great chess champions who play blindfold seven games at one time with seven opponents, are those that are gifted with the unusual capacity of turning rapidly from one situation to another.

As for the educational application of our knowledge of span of attention, we recommend that children should as far as possible be encouraged to have a wide range of interests so that they may not feel non-plussed when they are obliged to turn from one situation to another. It is also worth noting that experiments have confirmed our general impression that when two or more units are related into a system it is easier to comprehend them—to bring them into one's span of attention—than if each unit was attended to separately. One of the most welcome features of the *gestalt* school of psychology is, as we have noticed more than once before, that it lays special emphasis on the configurational or inter-related nature of the diverse units of a field of attention. It is however fair to notice that the essence of their contention was definitely anticipated by some of the older psychologists. For instance, James who denotes this process by the term *conceptional system* unequivocally points out that a conceptional system is more than a sum of its parts "When I think of the word *man* as a whole for instance, what is in my mind is something different from what is there when I think of the letters *m*, *a*, and *n*, as so many disconnected data."

Herbart's doctrine of apperception put emphasis on another aspect of inter-relationship of experience, i.e., on relating new materials with the old ; for without such inter-relatedness and systematisation no attention is ever possible. The old fund of experience to which the new was related, was termed *apperception mass* by Herbart.

Teachers are often worried by the inattentiveness of their pupils. From what we have already said, it must have been made clear that no living person is entirely inattentive. What the teacher calls inattention may be due to one of two contrary attitudes ; either a child's attention may pass rapidly from one unit to another without any one unit engaging him for any length of time, *or* he may be too much interested in, his attention may be concentrated upon, something other than what the teacher wants him to attend to at the time. There is some latent good in either attitude. It is good that a person is able to give attention to a large number of things rather than to restrict oneself to the selection of a limited type of stimuli. One's view must be as wide as is compatible with efficiency. In the same way, to have an absorbing interest in any single topic is the result of an ability to visualize different aspects of an object which many others are likely to pass over with carelessness or indifference. Both types however can easily deviate into extremes and we may then get either a fickle-minded person who cannot concentrate attention on any one thing, or the absent-minded man who cannot manage his own practical life without someone to guide or direct his steps at every turn.

Concentration is a hard job for most of us. We are easily distracted, and we have to fight with distracting circumstances in order that we may realize our goal of thinking. Distraction however does not always mean poor output of work. Sometimes it works the other way for we may unconsciously, and sometimes even consciously, take distraction as a kind of challenge to our sense of personal competence, with the result that we may so try to overcome the handicap that we carry on our thought-processes or activity even more efficiently than we should have done without the distraction. There is a danger however that if distractions are unduly strong or if they are continued for a protracted period they may cause strain and fatigue.

Fatigue is generally described as an indication of over-expenditure of energy. Whether this description is right or not, there is no doubt that it bespeaks the coming into play, as Aveling puts it, of a general tendency towards inactivity. This inactivity may either be physical or mental, and in either case results in a comparatively poorer output or quality of work. The feeling of being tired and actual fatigue are not however identical experiences. A man who is interested in his work may not have the subjective feeling of being tired, though he may actually be nearing the limit of available energy. On the other hand one whose heart is not in his work feels bored but that is no proof that he is really over-worked—it may even be that he is under-worked. Restlessness, lack of motor co-ordination (especially in physical work), want of accuracy, susceptibility to distractions, deficiency in the fineness of sight and hearing; and in more serious cases, headache and sleeplessness, increased blood-pressure and over-production of sugar in the system—these are some of the symptoms of fatigue.

Physical fatigue may be due either to the exhaustion of the muscles or of the nerves. Muscles may be exhausted on account of the *loss of energy* latent in them or on account of *poisonous matter* forming in them. Loss of latent energy is not impossible, but it is regarded as more probable that the experience of being exhausted is caused more by the formation of such chemical waste-products as carbon-dioxide and lactic acid in the muscles and the blood, than by loss of energy. These toxic substances get into the blood, lower the activity of the organs in which it circulates, and tire them. Considering now the fact of tiring itself, it is regarded by many investigators that the nerves tire out much earlier than the muscles. Of the nerves, it is not the nerve fibres that practically get tired so much as the nerve ends (or end-plates) and the central nervous system and the synapses.

Heavy and prolonged mental work is also fatiguing, for it implies actual expenditure of life-energy. We usually call this energy mental energy to distinguish it from phy-

sical energy. Physiologically mental energy is associated with the activity of the central nervous system, especially of the brain. Addition of figures, multiplication, solving intellectual problems, reflecting on two courses of possible lines of activity —all these operations imply expenditure of mental energy.

When the body is exhausted the mind is also affected. But many of the instances of fatigue which the man in the street are inclined to call mental are really instances of physical uneasiness and discomfort. A man who works at his desk for eight hours adding figures, making drafts and copies, and checking entries may be tired by the end of the working day ; but there is no reason to assume that it is mental exhaustion that has resulted in this tired feeling. On the contrary his sedentary posture, the strain on the spine, the too frequent exercise of the small muscles of the fingers or of the eyes these are adequate enough to account for the fatigue involved. Much of the fatigue of school children belongs to this category of physical strain. They are obliged to sit up on uncomfortable wooden forms for about five hours (though there is usually a recess of about forty minutes and one or two shorter intervals in between). In spite of these intervals, the strain on the physical system is there, especially for the younger children ; and they exercise their fingers—which means lots of adjustments and practice—when they write, and strain their eyes. The prolonged maintenance of an erect posture is itself a tiring experience. It is believed as the result of several experiments* that the expenditure of mental energy in schools and colleges is not so heavy as to cause mental fatigue. But physical uneasiness and discomforts may lead to unnecessary strain as just observed, and this added to emotional factors may cause serious trouble to the young.

Very often it is this latter kind of fatigue, i.e. fatigue brought about by sustained or too frequent emotional strain

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*For a list of some of these experiments on school work and fatigue, see Starch *Educational Psychology*, Ch. XI.

that is more productive of evil consequences than physical strain or prolonged mental efforts. Even such factors as adverse criticism, unfavourable progress reports especially where they are supposed to be unfair, comparing of one's own achievement or attitude with those of better individuals, and a sense of neglect or misunderstanding by fellow-students or teachers —factors which less sensitive persons may all too lightly dismiss as trifling—may lead to emotional strain, and may result in the manifestation of symptoms usually associated with physical and mental fatigue. Charlotte Bühler refers to several interesting studies made in German-speaking countries to ascertain the influence of criticism on the quality and output of work. It was found invariably that while praise and appreciation stimulated activity, adverse criticism and failure tended to have a depressing effect. As a matter of fact not only the criticism of others but one's own dissatisfaction with one's standard of achievement has an oppressive effect on an individual. It is not only the adults who make such self-criticism ; even children of about eight years are capable—though there are great individual differences—of making low estimates of their performances in comparison with that of their fellows. These self-imposed requirements, regarding the quality of the performance, release, as Bühler observes, an emotional recoil that affects the character of the work drive. We deal more fully with emotional conflicts and their consequences in Chapter XX. Another common source of signs of fatigue in the school is, as we observed earlier, the uninteresting and monotonous nature of school work. To sit still and listen for long periods without sufficient scope for self-expression and play activities can by itself account for the production of numerous symptoms of fatigue in pupils even when they are not physically or mentally over-burdened.

In our endeavour to prevent too early an onset of fatigue we get much help from the findings of Industrial Psychology. To cultivate an interest, a personal interest in the work, and to feel proud about one's progress and possibility of achievement—

*Charlotte Bühler *From Birth to Maturity*, Ch. VIII.

this is easily the first essential to be aimed at in all sustained effort. The work must be felt as one's own, and not as imposed by any external agency. All kinds of work may not arouse spontaneous interests in us ; but we are capable, as we found earlier in this chapter, of acquiring new interests and keeping them steadily in view. Our philosophy of life, our ideals and outlook on life, are also helpful to us in resisting feelings of weariness that may occasionally assail us in the pursuit of cherished goals. Organization of work is a second essential in the accomplishment of any prolonged and different undertaking. Enthusiasm without systematic planning does not carry one far. Rest pauses and scope for relaxation should be provided for in the planning of work, both in respect of the needs of school-children and their teachers. The arrangement of the physical environment (involving ventilation, lighting, etc. of the schoolroom) under which work is done is also of great importance for concentrated attention and effort. Factors of life outside such as food and sleep are also of no small consequence in providing healthy conditions for efficient work. We should also recognize that habituated and rythmic activity is less tiring than activity that is carried on in a sporadic or haphazard manner.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

James	Psychology Briefer Course, Chs. XI, XIII.
Pillsbury	Essentials of Psychology, Ch. V.
	Education as the Psychologist Sees It. Chs. VIII, XIV.
Rignano	Psychology of Reasoning, Ch. II.
Aveling	Directing Mental Energy, Chs. IV, V.
Sulley	Teacher's Handbook of Psychology, Ch. VI.
Stout, Revised by Thouless	Groundwork of Psychology, Ch. VI.
Ross	Groundwork of Educational Psychology, Ch. X.
Colvin	Learning Process, Chs. XVII, XVIII, XIX.
Drever	Introduction to Psychology of Education, Ch. VII, p. 125 ff.
Myers	Mind and Work, Chs. II, VI.
Fox	Educational Psychology, Ch. XII.
Book	Learning How to Study and Work Effectively, Chs. VI-VIII.

XIX

STAGES OF GROWTH

So long as consciousness was considered the main interest of psychology, the latter was naturally preoccupied with the mind of the adult. The child, being a poor introspector, could not supply materials to the "scientist" who relied on the method of introspection. The progress of psychology and the study of the child have however been greatly inter-dependent. The undying interest of mankind in children led to the careful observation and systematic study of the child, and the child whose behaviour can mostly be observed only from the outside made it inevitable for the psychologist who cared for scientific methods to include in his purview the unselfconscious behaviour of children and even of animals, which unlike children never attain to self-consciousness. Thus we have child-study firmly established as an important aspect of psychology, and no teacher can be said to be fully qualified for his work unless he knows how the child, whom Madame Montessori calls our "sublime guest,"* feels, thinks and behaves. It is also useful to be acquainted with the various stages of his growth, to see how the muling and pucking infant in the nurse's arms becomes,

> The whining school-boy, with his satchel
> And shining morning face, creeping like snail
> Unwillingly to school. And then the lover,
> Sighing like furnace, with a woeful ballad
> Made to his mistress' eyebrow. Then a soldier
> Full of strange oaths.

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* *The Advanced Montessori Method*, Ch. I.

Seeking the bubble reputation
Even in the cannon's mouth.*

We are not as teachers particularly concerned with the later stages of middle age, senescence and ripe old age of the one who started his life as an infant struggling in the arms of mother and nurse, but we have to definitely take note of the fact that no successful and happy life is possible in the career outlined above by Shakespeare without much adjustment effected in early childhood.

It is cruel to expect however that all adjustment must be on the part of the child. "It is too often required of children that they should adjust themselves to the world. But it would be more to the purpose that the world should adjust itself to children in all its dealings with them."† The little child is so helpless that he cannot make many adequate adjustment of his own. At the same time he has intense feeling and mental needs. Through their helplessness and unsatisfied needs children plead of us, though not verbally, to be given to sense of security and satisfaction. Their emotional life is particularly stirred when such a thing as weaning, or the birth of a younger child, or going to school even if it be a nursery school, takes place. If love is supposed to be denied to them, and they make such suppositions even if the mother or other beloved persons are absent for a moment, they feel that they are entirely neglected. This does not mean that the little child should always be handled and pampered, but it means that grown-ups should be tactful and sympathetic in dealing with them. Very often constipation, or too free a clearance of bowels, wetting the bed in the case of the older nursery children, and refusal to eat may be due to an emotional conflict, conflict between a desire to please the mother (or father) and to destroy her for her lovelessness with that ease with which he destroys his toys. These unhappy feeling-

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*As You Like It.

†Alice Meynell, *The Unready*, quoted in the first page of Dr. Montessori's latest book in English, *The Secret of Childhood*, Kegan Paul, 1936.

attitudes may continue to exist in the unconscious even in adult years. As a psycho-analyst says evidently from personal observations " In analytic work with adults, one is never able to get altogether used to the extraordinary tenacity of memory and profundity of feeling which is retained throughout life with regard to the earliest events, at one or two or three years of age. These are perhaps hidden under an apparent blank, or distorted out of recognition, but they are always there, and always have a profound and permanent effect upon later development. It is incredible to the psycho-analyst that anyone can take the view that what happens at one or two years of age does not matter." *

What then can we do to help children to be as free of tensions as possible, seeing that absolute freedom from conflict is an impossibility ? The first thing that should be realized in this connection is that whatever that helps the child to experience power and a sense of his own importance tends to give him confidence. Confidence in himself makes him feel less dependent on others—and he feels that every thing is not lost even when others are not always at his beck and call. The natural ability to walk about, to talk, and to break, pull down or manipulate things—all this gives him the most necessary impression that he has some power within himself and that he counts for something in the world of bigger things and bigger persons. Parents and senior friends can help him in many ways, both positive and negative, to experience the joy of self-confidence. For one thing we can keep ourselves from speaking in a harsh manner to him, or despising his humble efforts to be helpful. Even a small child wants to help, and more often than not seniors find his efforts a nuisance rather than help. If however they are wise and considerate they welcome his co-operation for his own sake as well as for the joy he gives them by his readiness to be helpful. Above all it should be recognized that

*Susan Isaacs, *The Nursery as a Community* in On the Bringing Up of Children (Ed. by J. Rickman), p. 208.

to punish a nervous child for any reason good or bad is to make him still more nervous and emotionally unbalanced.

Like the nursery child (1—3 years), the child of the next higher stage of growth, roughly of years 3—7, is also extremely fond of play. Though children do not in subsequent years outgrow their fondness for play—as a matter of fact not even adults do—these age-groups we have mentioned are remarkable in this respect that they are years when the child makes of his own accord practically no distinction between work and play. This is why Froebel who specialised in the education of children of this age a little more than a hundred years ago gave a pre-eminent place to play in his system of Kindergarten—the soundness of which educational means has ever been recognized by later writers on education and by those practical educators who believe in putting into practice the highest truth they know even when such practice involves departure from conventional ways of doing things. Froebel rightly regards that to the child all play is work and that no work is helpful to him which does not have the spontaneity of play. We need not go here into the various theories of play—we have dealt with them already. As far as children are concerned we find that it is through play that they get control over their own body and become skilful in the manipulation of things it is through play that they get a sense of their power and of its steady increase; it is again through play that relations with other human beings—other children and adults—are established, "and by play enjoyed in common, the feeling of community which is present in the little child is raised to recognition of the rights of others." *

Play implies play-materials, and the first play-materials of the child are the parts of his own body. Very soon however he looks for other things he can handle, pull to pieces, or throw about and gather together again. Such things are in popular language called toys. Toys need not be costly things. Soft and coloured materials are welcome to children, but they

* Murray and Smith *The Child Under Eight*, Ch. III.

often make themselves happy with such simple things as marbles, pieces of rough stones, shells, pieces of wood or tin, or even bits of paper and cloth. They convert them by their ever-active imagination into houses, trains, bullock-carts, father, mother, playmates and fairies. These external aids are helpful to them to engage themselves in a never-ceasing series of dramas, so much so that this age, of three to seven years, has been called the dramatic age. But the purpose of this dramatic activity is, as Joseph Lee points out, neither to enlighten others nor even to show off to others what wonderful things the small actors can do—that purpose comes in later—but to enable themselves to understand the world of manifold persons and things by entering into them through imagination—in other words by the actors identifying themselves with their characters, animate or inanimate. The impersonating impulse gives to the experiencer, though unconsciously to himself, the intuitive sympathy that sees with another's eyes, that hears with another's ears, that feels with another's system of feelings—so that, in course of time, he is not merely energetic and active but truly becomes a human personality capable of sharing the joys and sorrows, hopes and fears, and needs and problems of other persons. He sees even inanimate things from the inside and begins "to get the feel of them, to imagine how it must be to fall like a stone, sail like a boat, tower and break like a big wave—the power to sympathise with matter, to speak its language, predict what it will do."* For the same reason we find him taking in with great zest all kinds of simple stories of animals and rivers and mountains and fairies. They have no difficulty to understand strange things incredible to the grown-ups. Fairy stories that deal with wonderful events enable them as we have seen already (See Ch. XIII) to identify themselves with things that transcend the limitations of a prosaic, finite world. Hence the wisdom of the loving teacher or parent who enriches the life of the little ones with suitable stories.

*Joseph Lee *Play in Education*, Ch. XVI.

Their readiness to believe in the possibility of the existence of beings beyond the ken of ordinary men makes this an ideal age for the imparting of elementary ideas of religion, and to cultivate in them reverence to a personal God who loves and cares for us and for our friends and is willing to provide us with all the good things we need. In this connection it should also be borne in mind that this and the previous age—which together we call early childhood—is remarkable for the operation of such general tendencies as imitation and suggestion. Children much too readily copy the words, accents, manners and attitudes of others—especially of the adult members of their social circle. Great importance is given to this period of life when it is realized that abiding foundations of religious attitudes and social manners and behaviour can be laid in this tender age.

Rhythm is of great significance in the child's life, whether the rhythm expresses any particularly intelligible idea or not. Children love rhythm for its own sake. It gives them a sense of mental poise and unity in a world of multifarious things. "One of the prettiest sights I ever saw," says one, "was a group of six-year-olds in an infant school in a poor neighbourhood improvising rhythms of feet, body and arms to the music of Mendelssohn's *Spring Song*. There was grace, joy and abandon—the very essence of aesthetic delight. Even nonsense rhymes satisfy a real need on the part of the child for balance and rhythm of sound—witness for instance numbers of such rhymes that prevail in all languages from generation to generation. They exist not for the importance of their intellectual meaning, but for the calm and poise they give to the little child in a distracting world of disagreements and diversities.

Childhood in all its stages is a period of constant activity : children cannot be idle for a moment but are up and doing some thing or another, talking to others and interrogating them,

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*Sir John Adamson *Externals and Essentials*, III.

moving about, constructing or pulling down, arranging and re-arranging their possessions which may comprise all and sundry things that come handy. The presence of some of these things may at times be regarded as a nuisance by adult friends. But the latter should have patience and sympathy. If the children are not full of activity now, they cannot grow into the healthy manhood and womanhood that we wish for them. Our insistence that they should be still, when we want them to, may deprive them of their freedom and spontaneity of self-expression. Prohibitions and restrictions such as " Be quiet ; leave it alone ; don't tease me ; mind your own business ; or, go off " are hard for children to follow, and if they did follow these adult orders, it would not be to their best interests. On the other hand, as Dr. Montessori says " If the struggle between the adult and the child could be brought to an end in 'peace,' and the adult, accepting the conditions of infant life, would seek to help the child, the former would be able to advance towards one of the most sublime enjoyments which nature can bestow that of following the natural development of the child and seeing the man evolved." *

Childhood is a period of continuous growth ; but the progress of growth is not uniform in all years. The first three years are of rapid growth, then the rate slows down a little till we come to the close of early childhood, when there is another period of rapid growth lasting for about a year or two. This happens mostly about the years 6-7. Then we have another period of consolidation and of slow growth until usually about the twelfth year. After this period what is known as adolescence takes place, and the early years of adolescence is another period of rapid growth. Later childhood may roughly be said to be the years eight to twelve, though no one can afford to be dogmatic in stating the years where one stage ends and another begins. Variations in individual cases must be allowed a range of about two years ; and we

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* *The Advanced Montessori Method,* Ch. IX, p. 300.

should also note that the characteristics of one stage are not absent in the preceding stages, and they do not cease to function in later years. What is meant is only that certain characteristics are more remarkably present in certain stages than in others ; they do not occur or disappear suddenly or in a saltatory fashion. With this proviso kept in view, we shall now deal with some of the marks of later childhood.

The smaller child endeared himself to the grown-ups by his very helplessness and dependence ; but these passive attitudes, if persisted in, will result in the development of a weak and supine character when the child becomes an adult. More active qualities should find a place in his mental make-up, if the child should grow into strong and vigorous manhood. This is how we explain the fact that in later childhood the normal child feels an irresistible urge to assert himself. He is no longer content to remain at home with his mother and to please and be pleased by her and other senior friends. He is keen on showing himself and others that he is capable of doing things, and that his existence as an independent person should be recognized. If his importance as an individual is not conceded he is ready to fight for it. Children at this stage are fighters more than at any other stage of their growth. They quarrel with their parents and brothers and sisters, and when they go out they do not shun opportunities to show their friends what they are capable of doing if any one dare disrespect them.

They go out to meet others of their own age and to play with them ; but each one is mainly interested in his own achievements, and associates with others for his own advantage. They do not very much care for the group as a group, but think of others as possible aids to further their individual plans and ambitions. The famous crusading king of England, Richard the Lion-hearted, may be taken as a grown-up example of the ideal of individual prowess so highly appreciated in this age.

This is, like all stages of childhood, an age of curiosity. The curiosity of this age takes a number of interesting forms. Children of this age move about the country when they get

a chance, and delight in climbing trees, chasing animals, and in swimming and diving. If father has some tools at home, they must be examined and experimented with. They act on the correct principle that even dismantling machines or other built-up things themselves constitute matter of construction. Their curiosity sometimes earns them the reputation of being cruel and heartless, for they tease animals just to see how they react ; they throw stones at frogs, poke the sides of cows and calves to see how fast and how long they can run, pluck off feathers of birds to see if they can fly or run without them. They similarly submit their weaker friends also to various teasing tests to see how they react. And if animals or boys show resistance to the exercise of their curiosity, well then there is noble chance for a fight ! Their interest in living things does not always take a cruel form. Children of this age are fond of pets such as dogs, cats and birds ; and a sensible educator—parent or teacher—will divert the attention of children to healthy directions like the keeping of such pets. That their curiosity takes various forms can be seen also from the fact that children of this age are voracious readers—when they have already mastered the rudiments of reading and where reading materials such as books and magazines are available.

The tendency to collect is strong in this age. Children collect all kinds of things. Marbles, coupons, seeds, grains, pieces of ribbon, bits of coloured or illustrated paper, stamps, autographs, magazines, cigarette cases, match boxes—all these have been collected by children. Charlotte Bühler speaks of a mother* who once took from her eight-year old son's pockets the following (1) a handkerchief twisted into a knot, (2) a roll of string, (3) a half-rusted pocket-knife, (4) an empty match box, (5) a piece of solder, (6) the bulb of a flashlight, (7) a shoe-lace, (8) a pencil, (9) two crayons, (10) four foreign stamps, (11) two carpenter's nails, (12) a steel pen, and (13) a wrinkled advertisement of a meat extract. The intrinsic value

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*Charlotte Bühler *From Birth to Maturity*, Ch. VIII.

of the things collected is not an important consideration for most of the young collectors. They seem to enjoy collecting much for its own sake, though if questioned why they collect any thing they are likely to mention some kind of utilitarian purpose. A small child of four years collected many seers of tamarind seed, and when asked why he collected it he said that it would be useful if a famine occurred in the country. The older children however seem to have a partiality for the things they can manipulate for practical purposes ; and the adolescents often attach sentimental values to their possessions such as letters and presents they get from friends. This tendency can be utilised by parents and teachers to help children to take an interest in the collection of educationally useful objects—stamps, coins and specimens of natural objects such as different kinds of seeds, grains, rocks and feathers ; to make an orderly arrangement of their collections ; and thus to have their interest in history, geography and science enlivened and stimulated.

Another remarkable characteristic of this period is the tendency to hero-worship. As boys and girls of this stage are themselves fond of vigorous action and outdoor life, the heroes they admire are naturally men of action. They admire the great men about whom they have heard or read, and still more warmly they adore such persons as the great footballers, the boxing champion and the highest scorer in cricket whom they see in their own school or city. From these characteristics of the older children it follows that stories of adventure, ballads and narrative poems dealing with heroic deeds, and biographies of men of action should find a place in their curriculum. Care should however be taken that the lives of those who fought for noble causes and did noble deeds of heroism should be held up before children for their admiration rather than an indiscriminate lot of dare-devils who risked their lives in hazardous ventures, good or evil.

During these stages that we have already mentioned, there are not many great differences between the boy and the girl. The girl is not usually so wild and dare-devil as the boy, but

this need not be due to different natural attitudes alone, it may also be due to differences in conduct expected from, and therefore training given to, girls as distinct from boys almost throughout the world.

From all that we have said hitherto, it follows that a negative kind of discipline imposed on children of this active and self-assertive age does not make them ideal members of society. As a matter of fact they lay by their self-assertion solid foundations for an efficient membership of society, for society does not function adequately where the individual members are weak, inert or dull. The right way of dealing with them is to recognize their natural inclinations and urges and to make use of them. The Wolf Pack organisation attached to the Scout movement is a step in the right direction. Similar movements of a formal or informal kind may be built up by all persons interested in the progress of boys and girls of this stage.

In spite of the strong tendency to self-assertion and interest in an active out-door life, this age is emotionally a comparatively calm and restful period. Children of this age do not have the bashfulness of smaller children nor the perplexity of ideals and consequent inconsistencies of adolescence. This is on the whole a plodding, steady period wherein the subjects care neither very much to analyse their own mental attitudes nor to criticize standpoints and ideals of others. They accept facts as they are and try to make the best of existing situations. Those who advocate, like the German philosopher Ziller, the Culture-Epoch theory—the theory that the human child reproduces, in the stages of its individual growth, aspects of the phylogenetic development of the human race (see page 35)—believe that this age of later childhood represents the adventurous but uncritical life of semi-savage and barbarous people who delighted in a nomadic life and its vigorous activities such as hunting, chasing and fighting. According to this theory, it is only with adolescence that young people even in civilized countries attain to standards of civilized life.

The characteristics of adolescence however do not put in their appearance suddenly and without notice. There is not much difference between the last year or two of later childhood and the early stages of adolescence. As a matter of fact it is hard to say where one ends and the other begins—and this statement is also true of any two successive stages of human development, the one passes so imperceptibly into the other. We found that children of later childhood are fond of moving about in groups, but that each one had a tendency to think of the group as only a means to advance his individual purposes. In course of time a change comes over their attitude, and the older children begin to recognize the importance of the group as a group and begin to think of it as something to the interest of which they should subordinate some of their own personal choices and conveniences. This attitude is particularly strong in early adolescence which in the case of boys is from about thirteen to sixteen years and in the case of girls is usually about a year earlier. Individual variations in the age of early adolescence are, however, so numerous that a range of two years, and in some cases even three, must be allowed. In this period the group becomes so important in the life of the individual that in his dress, the choice of his common expressions of speech, his social manners, and even in his moral code he allows himself to be rigorously guided by the standards of his group. The teacher who wishes to exercise control over the adolescent boy should study him as a member of his group, and should try as far as possible to influence the whole group. In this attempt he should find out and enlist the services of the natural leaders of the group as the influence exercised through their co-operation and support is more effective than the teacher's unaided efforts. In almost every group there are some, as we saw in Chap. IX., who are gifted with the qualities of leadership and there are many who are good followers, and both have an admitted place in organised society. The wise teacher or social worker is keen, so far as he can help it not to work against the wishes of the group but to win by patient and sympathetic

handling the approval of the group even in those matters where their public sense has not yet been roused or where their active hostility has unfortunately been incurred.

The most characteristic feature of this period is the inrush of sex feeling. Even sex feeling however does not appear on the scene for the first time in adolescence. Small children have vague sex-feelings. The particular love of the son for the mother and of the daughter for the father in infancy is not without a sexual basis. That small children see more and feel more than is popularly believed to be the case in sex matters has been more than proved by psycho-analysts. On the whole however sex-feeling is comparatively dormant in childhood ; but when the physiological organs of sex mature in adolescence, sex feelings are experienced at first vaguely, later clearly and with vivid awareness. The sex urge often passes through three stages :—(1) auto-sexual, here the person is interested in his own person—a stage called Narcissism by Freudian psychologists, (2) homo-sexual, where a boy or girl falls in love with a member of his own sex, and (3) hetero-sexual, where the natural attraction of opposite sexes operates. There are persons whose sexual progress is sometimes arrested at one or the other of the earlier stages. This is an abnormality, very often caused by fear or want of self-confidence.

Sex-consciousness gives rise to a number of secondary sex characteristics. Those on the physical side such as growth of hair on the face and on the body and change of voice are familiar to all. There are more subtle secondary characteristics on the plane of emotions and social behaviour, such as care for personal appearance and for social approval, especially the approval of the opposite sex. Young boys who clamoured in the lower classes of co-education schools for equal punishments to be meted out to boys and girls for equal failures or offences now stand up in chivalry to help and protect their girl classmates even where such help is not particularly needed. Slowly our young fellows are growing into full manhood and womanhood. The migratory habits of boys and girls of this age is,

to a certain extent, a secondary sex characteristic. These secondary characteristics of social and emotional significance can with advantage be made use of by teachers of adolescent boys and girls for higher educational purposes—in helping forward the development of personality through social adjustments.

The adolescent period is often a period of inconsistencies. The adolescent boy feels his own importance and must exert himself, but he feels himself a member of society and acknowledges his obligation to it. He feels life incomplete without the co-operation of the other sex, but before the members of the opposite sex he is sometimes bashful and at other times displays his own importance through learned or humourous words, fine dress, and heroic feats of courage and strength. His interests are immensely widened, but he retires more into himself than at any time before. Very often he is moody and melancholic. Critical and self-confident, he is also a great hero-worshipper. He passes more fully into the rational level of thinking and is interested in science ; but his emotional life is wide awake, and he is keenly interested in works of art and imagination. He is a fighter, but is swayed by high ideals of service and self-sacrifice.

From these observations we naturally draw certain important principles regarding the education of the adolescent. For one thing, any scheme of studies intended for them should be broad-based. Specialisation is not an unmingled good, especially in the case of the early adolescents. Again this is the best period for the presentation and acceptance of ideals. At no earlier period in their life were young persons so wide awake to the demands of society on their life ; and a few years hence they will be tossed about in a world full of the spirit of competition and self-aggrandizement. These considerations give the teacher of the adolescent a position of vantage which he can make adequate use of, provided he has sympathy, tact and understanding. He also recognizes that there is much difference between earlier and later adolescence, which latter begins about the year sixteen. In girls this often comes about a year

or so earlier. While the earlier adolescents are more like elder children, the later adolescents are more like grown-up men and women. They should therefore be entrusted with greater freedom and initiativeness. The discipline of the younger folk also should as far as possible be self-discipline ; but in the case of the later adolescents, any kind of discipline which is felt as external is resented. That Indian thinkers were cognisant of the importance of giving much freedom to the adolescent is clear from a famous couplet from *Chānakyasataka* :

लालयेत्पञ्च वर्षाणि दश वर्षाणि ताडयेत् ।
प्राप्ते तु षोडशे वर्षे पुत्रे मित्रवदाचरेत् ॥

which says "Fondle your son until he is five years old ; for ten years, beat him ; and as a friend treat him, when he is sixteen" Whether we accept the first two precepts in this couplet or not, there is undoubtedly much wisdom in the last. Educators should seek for the willing co-operation of the young ; and when it is genuinely and tactfully sought, it is given them in abundant measure.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Rickman (Ed)	On the Bringing Up of Children, Chs. V and VI (by Susan Isaacs).
Montessori	The Advanced Montessori Method, Ch. I.
Murray and Brown Smith	Children Under Eight, Chs. V-VIII at least.
Lee	Play in Education, Chs. XI, XIII, XVII, XXI.
Ross	Groundwork of Educational Psychology, Ch. VI.
Ryburn W. M.	Theory and Practice of Christian Education, Ch. IV
Simpson J. H.	Sane Schooling, Ch. IV.
Brooks	Psychology of adolescence, Chs. II and XIV
Kirkpatrick	Fundamentals of Child Study, Ch. V.
Watts	Education for Self-Realisation and Social Service Part III., Ch. IV.
Wheeler O. A.	: Creative Education and the Future, Chs. VI-X.

XX

EMOTIONS AND SENTIMENTS

More than once in the last chapter we had occasion to refer to the important rôle that emotion plays in the development of the individual from early infancy to maturity. The subject is so important that we wish to pursue it further in this chapter. Different schools of psychology have different views regarding the origin of emotions ; but they all more or less agree that an emotion indicates a stirred-up condition of the organism. Emotions refer to the feeling tone of an experience by the organism, but technically the word *feeling* is often used to indicate a more simple and a more particularized experience than an emotion which is regarded as more complex and more widely spread in the organism. Important physiological changes occur in the course of the stirred-up condition of an emotion, changes that are not so vividly noticed in the simpler feelings.

Emotions give change and colour to life. Had it not been for them, our lives would have been monotonous, drab and prosaic. Emotions come to our aid in this respect by introducing plenty of change into what otherwise would have been an existence of dull evenness. Pleasant emotions such as joy and sense of success often lead to greater effort on the part of the subject, who, with renewed courage, proceeds to excel the performance of others and his own record. Also great and momentous decisions and choices are sometimes made on the

waves, as it were, of a great emotional upheaval, steps that would never have been made had it not been for the inrush of feelings at the time. Such choices have made or marred lives of numberless individuals and even of public bodies. What are known as " conversions " in Christian countries, and " deekshas " or initiations of sanyasis who give up the world in Hindu India, are examples of such momentous personal decisions made possible by the toning up of the emotional life. Declarations of wars and demolition of social barricades through legislation are made possible when a people's emotional springs are touched.

The part that emotion plays in art is generally recognized. Works of art, such as poetry, music and painting are created by persons who have marked emotional experiences and who want to share their experiences with others. Even for the appreciation of such works of art, our emotions should be mildly aroused—a fact we seem to forget in schools and colleges where the appeal is too often to the cognitive, intellectual aspects of life, and emotional life is not rarely left to shift for itself.

Things that are highly useful when moderately employed may become injurious if used inordinately. This is true of emotional stir also. Emotional stimulation is beneficial in many directions as observed above ; but where there is undue emotional excitement many evil effects are likely to follow. First, we shall refer to its influence on the physiological system. Strong emotions interfere, as we saw in Ch. IV., with the activities of the endocrine glands. In anger and fear for instance the digestive process is delayed sometimes for hours, the heart pumps more vigorously, and the lungs are more active. The work of the bowels and the bladder is interfered with, and the liver sends out more sugar into the system. Cannon, Pavlov and others have demonstrated some of these consequences by experiments on such animals as dogs, cats and apes. Inhibition of accustomed

activities enhances as Pavlov noticed the tendency to sleep, while excitement tends to prevent sleep.*

A number of examples may be cited to show how functional habits are interfered with by emotional excitements and inhibitions. I once saw a girl who had become almost mute she speaks to none except small children and that too when other grown-ups are not looking. The pity of it is that she was able to talk normally until she was punished for making a noise in a boarding-school where she was educated. There are several cases reported (and I myself have come across some) of stammering developed as a consequence of attempts made to change a native tendency to write with the left hand. Susan Isaacs in one of her latest chapters speaks of the evil consequences of trying to force regular habits on small children. A new nurse of a child of two years and half was shocked that he wet his bed in the night and expressed shame and disgust at his dirtiness. At the end of six weeks the boy was so terrified of not being clean that he was waking at all hours of the night in great anxiety, and running to the w. c. every few minutes during the day. And he had developed a bad stammer. The nurse had gained her end—but at what cost! She gives another instance of a little girl of three who was so severely scolded by a nurse for a single wetting that she refused to urinate for twenty-seven hours, until the mother was in despair. Emotional conflicts may sometimes cause bed-wetting or diarrhœa in children, and sometimes just the opposite symptoms as constipation or retention of urine and loss of appetite. Not a few cases of serious illness such as nervous break-down, diabetes and blood-pressure are caused by continued worry, fear or anxiety.

Strong emotions interfere with skill, the learning process and thought. It is not without reason that medical men and

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* Y. P. Frolov *Pavlov and His School,* Ch. V.

† In *The Bringing up of Children,* a symposium edited by J. Rickman. Pp. 161-162.

lawyers usually seek the service of their colleagues when their own health and personal interests require skilled attention. A mild sense of anger and pride may serve the sportsman in putting forth his best efforts, but when his feelings are strongly stirred through anger or fear he does not do his best. Actors, musicians, poets and other artists cannot contribute their best to human happiness unless their feelings are held in control. Rules of technique help them to exercise this control and to maintain what is aptly called psychical distance, as too intimate an interest in his subject by the artist interfers with his own enjoyment and his ability to communicate his joy to his audience. Neither is absolute disinterestedness productive of the best results ; what is wanted is neither aloofness nor thorough identification, but a happy mean between too great a psychical distance and its total annihilation.

Extreme emotions operate on us like strong and intoxicating drinks ; under their influence we cannot think clearly, our words are not held in check, and we are apt to say or do things which in our saner and calmer moments we would have recanted, if we could ! There are occasions however when deep feelings of grief and disappointment work like an opiate ; our feelings are depressed as of one under the spell of opium and we are inclined to withdraw from contact with the outside world—a first step which if not adequately visualised and checked in time, may lead to a listless form of insanity, known to medical men as dementia præcox. Certain events are remembered for a long time when they are associated with strong emotional experiences ; but the functioning of emotions may actively lead to the forgetting of happenings. To administer punishments to children as an aid to learning and remembering is likely to end in consequences quite opposite to what the teacher intended. On the other hand, to give a little praise to what is actually done may lead to greater efforts on the part of the learner and to better results. G. C. Myers refers to an experiment by Gilchrist where one division of a class which was praised showed an improvement of 79%

whereas the other division whose work was disparaged did not show any improvement.*

Emotional disturbances are fraught with consequences on behaviour. We know instances of brilliant people who were baulked in love and therefore allowed their talents go unused. Not rarely the consequences of emotional disturbances are more positively evil. Stealing, truancy, playing dangerous practical jokes on unsuspecting strangers or friends, quarrelsomeness, using bad language, slandering others, sexual offences—these and many more can be traced to emotional strain and conflict. The subjects are so strained inwardly by conflicting impulses that they seek for a solution of this tension by some practical expression of feeling through word and deed, and it is this unfortunate outburst of feelings that onlookers often unsympathetically describe as misconduct.

If emotional disturbances so badly affect our physical welfare, thinking and learning processes, and social behaviour, we shall do well to find out how they arise. Charles Darwin wrote a book in 1872 on *Expression of Emotions in Man and Animals*. Therein he described some of the outer manifestations of emotions. Ten years later William James went one step further and said that the physiological factors were primary in an emotional experience and that the apprehension of the feeling aspect of it followed the physiological changes. "Commonsense says, we lose fortune, are sorry and weep ; we meet a bear, are frightened and run ; we are insulted by a rival, are angry and strike. The hypothesis here to be defended says that this order of sequence is incorrect, that the one mental state is not immediately induced by the other, that the bodily manifestations must first be interposed between, and that the more rational statement is that we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble because we are sorry, angry, or fearful, as the case may be."†

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*See G. C. Myers *The Learner and His Attitude*, Ch. V p. 93.

† James *Psychology Briefer Course*, Ch. XXIV, p. 373.

As a Danish psychologist named Lange also independently propounded this theory in the same year this is known as James-Lange Theory of Emotion. The physiological aspect has latterly been stressed more pointedly by the Behaviourists who in the words of an admirer of Pavlov "endeavour to give a *materialistic, i.e. physiological,* explanation of psychical phenomena."* Medical men too have not infrequently succeeded in treating mental and emotional upheavals by removing surgically or by medicine certain provoking physiological conditions. This does not however mean that emotional disturbances are always and solely caused by physiological factors. On the other hand we believe it quite possible that mental factors may bring about physiological effects. "No tissue of the human body", says a writer in the British Medical Journal, "is wholly removed from the influence of the spirit."† Without going into the thorny problem of the relation of the body and mind again, we are content here to accept the view of the old psychologists re-asserted by McDougall that any human activity tends to have three aspects—cognitive, conative and emotional—though no one can finally explain why it should have these three aspects. Emotions usually, if not inevitably, accompany all human efforts ; and all schools of psychology agree that they pronouncedly manifest themselves whenever there is any mental conflict. Without therefore trying to finally decide whether in emotions the bodily or mental conditions are primary, let us try to look at the origin of mental conflicts themselves which occasion these emotional experiences.

These conflicts and disturbances arise, as we have seen in the chapter on the Rôle of the Unconscious (see p. 90) when there is a clash between one instinctive impulse and another, when an impulse is held in check by deliberate choices

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*A. Deborin, quoted in Y. P. Frolov *Pavlov and His School,* Ch. VII, Kegan Paul, 1937.

†*British Medical Journal,* June 18, 1910 quoted by Leslie D. Weatherhead *His Life and Ours,* Ch. VIII.

actuated by a personal sense of propriety, when an activity is contrary to social standards, or when an individual is influenced by loyalty to two or more bodies with conflicting ideals. Going into more concrete details we find that disturbing situations for the young are created particularly by such factors as sense of inferiority due to physical helplessness or weakness, loneliness, harsh or partial treatment by parents or teachers, ill-health, faith in the honesty or uprightness of some trusted adult being shattered, undisciplined freedom or over-restraint, influence of malicious individuals or unhealthy group life, sex urge and ignorance of sex problems, quarrelling between two trusted individuals such as parents, and over-excitement caused by such things as the cinema or other unhealthy pictures or scenes.

From an examination of these facts, it is evident that no one can entirely avoid emotional conflicts. The most important practical question that arises then is as to how to meet conflict-producing situations with as little adverse results as possible. Our first suggestion is that if possible those situations must be avoided which we know to be certain to be harmful and pernicious. There are situations that can be avoided and very often prevention, as the good old proverb has it, is better than cure. Prevention however is not always possible. We should therefore think of other means of combating emotional wastage. First of all it is sometimes possible to meet the wastage of emotional energy implied in one instinctive tendency by calling into service another instinct. Thus fear can be modified by a strong sense of curiosity. Often intellectual processes can be made our ally in tackling highly emotional situations. For instance a fuller knowledge of a situation helps us to control the emotional intensity that the situation originally tended to evoke. Children who are afraid of thunder have been helped by the knowledge that thunder is often heard after the real danger is over. Again if attention is devoted to some intellectual problem we are able to escape at times the devastating effect of an emotional upheaval. The habit of looking at the bright side of things will help us at times when we are inclined

to be gloomy and depressed. If there is any element of truth in the James-Lange theory—and we know there is—we can not only scream and be sad, but can also smile and find help through that smile to get rid of a sense of depression or rage. In other words by a deliberate alteration of bodily conditions we can to a certain extent change the emotional attitude. If we can manage, when tempted to be angry, to count up to hundred, and still better if we can do it with a smile on our face, we thereby help ourselves to conquer anger. A habit of relaxation also aids us in an effort to maintain emotional poise. What William James says generally of the men and women of America is true of many individuals throughout the world "Neither the nature nor the amount of our work is accountable for the frequency and severity of our breakdowns ; their cause lies rather in those absurd feelings of hurry and having no time, in that breathlessness and tension, that anxiety of feature and that solicitude for results, that lack of inner harmony and ease by which the work is apt to be accompanied."* Too often we keep our nerves highly strung. If on the other hand we can train ourselves to relax even for short periods our whole system—mind and body—and allow ourselves to feel free, the practice will enable our emotional life to function in a more healthy way. The example of a noble life is of great service to us in this respect, especially if it is of some one whom we happen to know personally and admire as one

> (Who), through the heat of conflict, keeps the law
> In calmness made, and sees what he fore-saw
>
> Who, with a toward or untoward lot,
> Prosperous or adverse, to his wish or not,
> Plays in the many games of life, that one
> Where what he most doth value must be won ;
> Whom neither shape of danger can dismay,
> Nor thought of tender happiness betray.

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* William James Lecture on the Gospel of Relaxation in *Talks to Students*.

The Behaviourists led by Watson recognize only three emotions as primary, i.e. fear, rage and lust. They believe that all other kinds of emotional experiences are due to the blending of these primary emotions, and that such emotional blends are due to what may be called " conditioning " or " conditional reflex." Psychologists who do not belong to the Behaviourist school also admit that conditioning may and does take place. We have already referred to the famous experiments on dogs by the Russian biologist, Pavlov. A bell was rung whenever food was served to a dog and the dog evidently related the bell and the food into one configuration, with the result that later when the bell was sounded even without the food, there was secretion of saliva in his mouth. Other psychologists also ungrudgingly recognise that situations that originally did not give rise to an emotional experience may by proper associations—conditioning—originate emotions. What is more harmless for instance than a few spots of ink on a paper but by reading a meaning into this system of spots one man is elated and another enraged, one man finds himself highly honoured by the " writing," and another feels scandalized. Admission of the truth of conditioning does not however mean that we accept Watson's theory that there are only three primary emotions. McDougall, on the other hand, contends that each instinct tends to have an emotional tone peculiar to itself. It is hard to fully agree with this view either. We cannot, for instance, particularize the feeling tone in the instinctive activity of construction or acquisition. McDougall however anticipates this difficulty and points out that the mere fact of language not possessing a distinct word for an emotional experience such as in " appeal " or " gregariousness " should not lead us to the conclusion that that emotion is not definitely distinct from other emotional experiences.

Emotions may be simple or complex. The emotion of fear for instance is a simple or primary emotion. But when we speak of *admiration* we really refer to a complex or blend of

different primary emotions. When we admire a great national hero like Gandhi or a poet like Tagore, there is a tinge of fear in our emotional make-up—we would not think of taking liberties in their presence, much less with them. There is the unmistakable element of negative self-feeling. There is even an element of positive self-feeling, for we identify ourselves with the hero and feel a certain satisfaction that we are akin to him and that we too share his glory. Similarly when we speak of *pride* we experience a positive self-feeling, a sense of superiority. The feeling of acquisitiveness is also present to a certain degree in this emotion—we are satisfied that we possess something which others do not have. A sense of satisfaction that comes through membership of a herd also is an element that enters into the emotion of pride. Similarly we can analyse into simpler emotions such complex emotional experiences as gratitude, reverence, amazement, indignation, etc. These emotion-blends are made up of a number of primary feelings that are called forth by the combined working of two or more instincts.

What is known as sentiment is a still wider and more comprehensive system of emotions, a system that tends to call forth a number of different instinctive reactions in its service. It is different from an emotion simple or complex in that it is more closely associated with a conative urge and is more abiding and permanent than an emotion. It is as it were a system of different units or elements operating as one scheme or pattern. "A sentiment", as McDougall puts it, "is a system in which a cognitive disposition is linked with one or more emotional or conative dispositions to form a structural unit that functions as one whole system."* Take for example the sentiment of patriotism. If we are patriotic we love our country ; are afraid when its freedom or prosperity is endangered ; feel angry towards its enemies ; identify ourselves with its heroes ; are inclined to subordinate our personal interests

* Macdougall *Social Psychology*, p. 437, 1931 edition.

to its larger interest ; glory in its past and present achievements, and feel sorry when something goes wrong with it. Here the country is a cognitive object, and a number of emotional and conative attitudes are formed round the cognitive object. We are not only not indifferent regarding it in respect of our feelings, but we also tend to strive or be active on its behalf.

Sentiments however are products of growth. Though they are related to natural propensities they follow a certain course of development. As a matter of fact an individual starts life with very few sentiments, and those few are related to his personal biological needs. In course of time he is able to recognise not only his needs, but also those persons who minister to his needs his mother who slaves for him, his father who gives him a sense of security, and his brothers and sisters who make his life easy by their sharing some of his experiences. Thus he develops a sentiment for his home. As he grows older he develops a sentiment towards his play-mates whose presence he does not yet consider a blessing in itself, but without which he realises he does not have any scope to assert his own superiority. Later on, with the approach of adolescence, there dawns in him a more real spirit of friendliness to his companions whom he now regards as his comrades and whose opinion regarding himself he highly prizes. Thus arises genuine group loyalty, which implies not only a sentiment for the group as such, but also for those abstract virtues and ideals which the group holds dear.

In the course of this development, sentiments gather round a person like the father or mother, a group of persons or an institution like the family or a club or a church, a material thing like the photo of, or a book used by, a departed friend, or an abstract virtue like justice or fidelity or generosity. However they arise, sentiments are dynamic in nature—they supply the driving power that motivates behaviour. One who lacks the dynamic energy of sentiments is dull and lethargic in his ways. He is a stranger to that enthusiasm that enkindles

the imagination of a noble soul and surrounds all his achievements however humble they be with the halo of disinterested zeal. As a matter of fact the strength of one's sentiments can be gauged by the amount of sacrifice he is prepared to undergo in its pursuit.

As in all life-processes the law of exercise is operative in the development of sentiments also. The more a sentiment is exercised i.e., the more attention is given to the object of any sentiment, the stronger grows that sentiment. For example let us consider the sentiment of loyalty to one's school the more this loyalty is called forth by suitable stimuli the more is its pull felt by the individual concerned. If any one student takes a special interest in its progress in his capacity as captain of its football team or secretary of its debating union or leader of its social service league, his interest in that school is naturally more alive than that of a passive participant in these enterprises ; and the more actively he works for the school the stronger is his sentiment for it.

If a sentiment can grow and become stronger and deeper it should be possible for it to decay and eventually to disappear through negligence or disuse. This is why in every movement, however pure and lofty its ideals and however strong the momentum of its original enthusiasm, we often find not a few backsliders—men and women who made a start in the race but fail to continue steadfast in it. This fact is of particular importance to those entrusted with the training of character of the young. The beginning is important in all moral achievement, but those only are counted worthy of honour who are true and faithful to the end. It is possible for a person to develop a sentiment ; but it is equally possible for his enthusiasm to become so cool that it may deteriorate into active hostility. Some of the worst enemies of any virtue or of any good cause are to be found in the rank of those who paid deferential attention to it at first and then fell away.

Sentiments are also contagious. When one individual

evinces enthusiasm for a cause others are affected by it, and in course of time the whole group tends to show the influence of its prominent members. Participation in common activities and rituals and ceremonies are of special significance in this respect. They promote the group-sense of the members of the community and strengthen their sentiment of devotion to it. Speaking of educational institutions in particular, the various extra-curricular activities possible for its members—such as theatricals, social service, competition with other schools in sports, and co-operation with them in organising inter-school exhibitions—are important not only as they extend and enrich the intellectual apprehension of the young but also as they broaden their sympathies and develop their sentiments and loyalities. On the other hand those teachers and managers whose vision does not extend beyond the daily grind of intra-mural activities are mere vendors of useful information who starve out the emotions and sentiments of the young. And the result of emotional starvation is similar to that of physical starvation in that the hungry have a tendency to feed themselves without moderation or discrimination on anything that seems to promise satisfaction. Where there is no scope for the healthy functioning of sentiments, likes and dislikes of a morbid nature are likely to crop up and to express themselves in a social or anti-social conduct.

Hence the importance of caution in regard to one's attitude to sentiments of hate. No one can deny that hates and dislikes too, like loves and loyalties, have a certain place in the development of the moral self, especially when they are directed towards some vice or moral evil as cowardice, unfaithfulness or dishonesty. Hatred or contempt, however, entertained against some definite evil trait or traits in others, may degenerate into a hatred of the persons who harbour the evils in their life. This is a dangerous practice as it cuts at the very root of social life. Similarly inculcation of narrow ideals of patriotism or party loyalties makes it hard both for the leaders and the followers of the group concerned to enter into healthy

social relations with members of other groups except on terms of blind competition and hostility. Hatred, suspicion and fear are as baneful in the life of groups and nations as they are in that of individuals. In times of war especially the contagious nature of evil sentiments makes itself particularly felt, and forces of passionate rivalries and rapacious hatred seem to dominate ; and it takes years of pain and disillusionment for militant people to realise—and some do not seem to realise it at all—that co-operation, neighbourliness and sympathy are better than mutual suspicion, war and hatred.

The rôle of sentiments should however be differentiated from that of sentimentality. When a man gives expression to the existence within him of a number of good sentiments without that steadying and conative influence of a master-sentiment, we feel disinclined to give any credit to his sentiments, and we call him a sentimental person. Sentimentality is a paltry substitute for a system of sentiments. One who weeps over the sorrows of a hero in fiction and does not care to raise a finger in aid of his suffering neighbours is sentimental. When a sensible man's sentiments are stirred within him he tries to respond in an appropriate fashion by doing something to further the good towards which he feels drawn or to counteract the evil which he abhors. One who does not do either, merely indulges in cheap sentimentality, which in the long run is more productive of evil than good to his own moral self—not to speak of his influence on others. No one has any respect to that kind of renunciation which in Sanskrit is known as *smasan-vairagya* (स्मशान वैराग्य) or *puran-vairagya,* (पुराण वैराग्य)—an ephemeral wave of emotion that passes over one when he attends the funeral of a friend or listens to a heart-stirring religious talk given by a self-sacrificing saint.

A man's character is very much influenced by the kind of sentiments he holds and by their relative strength. As a matter of fact it is the organization and integration of his numerous sentiments under a master-sentiment that gives him a steady

character. The amassing of wealth, enjoymnet of sensuous pleasures, enrichment of one's personality, service of humanity, realization of the divine in the human—all these can serve as master-sentiments. A wise man often examines himself and asks: "What is my master-sentiment the fulfilment of which all my other interests subserve?"

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Mc Dougall	Social Psychology, Supp. Ch. VII.
,,	Energies of Men, Ch. XII.
Shand	Foundations of Character, Chs. IV, V.
Sully	Handbook of Psychology (Ed. V), Ch. XVI.
Brooks	Psychology of Adolescence, Ch. V.
Ragsdale	Modern Psychology and Education, Ch. VII.
Sandiford	Educational Psychology, Ch. VII.
Gates	Psychology for Students of Education, Ch. V.
Aveling	Directing Mental Energy, Ch. IX.
Saxby	The Education of Behaviour, Chs. IV, VIII and IX.
Sturt and Oakden	Modern Psychology and Education, Chs. VII, VIII.

XXI

MORAL CONDUCT THE WILL

In dealing with the problems of cognitive life we found that purpose plays an important rôle in reflective thinking and in learning. We learn more of a thing when we intend to do so, when we attend to it. In the early stages of life we attend to those things which call forth our spontaneous interest ; but life grows richer and more fruitful when we give voluntary attention to a number of things that did not appeal to us in a spontaneous way. In other words we exercise our *will* in learning.

Will is no less important in the development of personality and in our social relations. We cannot act in accordance with all our impulses, and expect at the same time to be respected as reliable members of society. Social life implies a number of restrictions and inhibitions on each member of society, however high or low his position be. Moreover there are, as we have more than once observed before, conflicting urges and desires swelling up in each individual's own life and it is impossible for any one to make the best of his life if he does not exercise a certain amount of self-control. About nineteen centuries ago a great thinker in Palestine gave expression to this universal experience when he said :—" The good that I would, I do not ; but the evil which I would not, that I do.

For I delight in the law of God after the inward man ; but I see another law in my members, warring against the law of my mind, and bringing me into captivity to the law of sin which is in my members." * About ten centuries even before these words were written a sage in India said :— "One thing is conducive to pleasure (*preyas*, प्रेयस्), another thing leads to true welfare and renown (*Sreyas*, श्रेयस्), and the wise man gives up the former and chooses the latter."† The time-old problem of conflicting impulses is solved only by the exercise of will in all departments of life.

What then is will ? If by will is understood a separate faculty of the mind, a faculty which exists as a discrete entity, a faculty that can be isolated and developed by itself, then we shall have to meet the astounding statement of modern psychology that there is no such thing as will. There is a man who wills, willing is one aspect of his total behaviour this however does not prove that he has any special automatic faculty called willing nor that it has any degree of independence to function in its own way. Therefore when we speak of a man exercising his will, we only use figurative language ; what is meant is that the man as a whole is reacting to a situation of conflict and that the whole man is making a decision or choice in accordance with his past experiences and his insight into the future. We do not now follow, as was observed more than once before, the lead of the *faculty psychologists*—psychologists who dealt with memory, observation, reasoning, discrimination, and will as separate mental entities which could be separately cultivated and strengthened and which by association made up the mind.

Will is distinguished from wish and desire. All the three expressions refer to things or states we do not have at present. *Wish* is the idlest of all the three ; what we wish may be for something that is possible or impossible. *Desire* refers to wish

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St. Paul *Letter to Romans*, VII ; XIX ff.

† See *Kathopanishad*, I. II. I-II.

that is directed to possible things, but it is not necessarily characterized by a resolve to attain them in the face of difficulties and oppositions. In *will* on the other hand is implied the determination that so far as it lies with us we are going to make an effort to attain the goal. This determination to make effort is the distinguishing characteristic of will in the category of the mental states mentioned.

Any idea entertained by the mind tends to be followed and completed by a suitable activity or series of activities. The idea and the action that immediately follows make up the ideo-motor process. We sit in a chair, a friend comes in, and we immediately stand up to welcome him. The standing up was accomplished as soon as we entertained the idea. Most of our activities are carried out in this manner : the idea occurs to us and the action is completed. If every idea is not followed by an activity it is not because certain ideas do not realize themselves in action, but because when one idea is present in the mind other ideas also happen to be present and these ideas counter-act one another. In other words numerous inhibitions take place in all our life. Inhibitions play an important and most necessary part in the lives of all sane persons. Those in whose life inhibitions do not play their essential rôle are rash and impulsive—they follow up ideas that occur to them without the inhibition of contradicting considerations. The idea of giving expression to their opinion concerning a neighbour occurs to them, or they feel impelled to grab what rightfully belongs to someone else ; and immediately they do it, regardless of what good or evil may befall others or themselves by so doing. The child grows in wisdom and social efficiency through the exercise of healthy restrictions and inhibitions.

Healthiness of volition implies a certain balance between the impulse to do things and a tendency to withold activity, a balance that gives us the normal type of behaviour wherein we are not engrossed in merely satisfying our immediate wants but visualize distant goals and adjust our efforts for their realization. It thus implies fore-sight and the effort of making a

choice, preference or selection. The choice may be between the doing of a thing or the negative attitude of not doing it, as between getting up in a cold morning or continuing to enjoy a warm and comfortable bed. It may be between the satisfaction of an instinctive urge like sex impulse and a sentiment like patriotism which demands the sacrifice of personal interests and pleasures. Or it may be a selection of one out of two desirable lines of activities as of a young man who wonders whether he should take up engineering or a literary profession. When there is thus a conflict between two or more tempting lines of activities, positive or negative, the man of normal mental health reflects and throws the weight of his whole self, his integrated self, into one of the alternative courses and works steadily at it. The strong-willed man is one who having made a choice abides by it in the face of difficulties and distractions. For example a man gives up his chance of becoming wealthy and powerful in social and political circles, and chooses to live with the poor and the ignorant trying to improve their condition. He is scoffed at, his health suffers, and his own fellow-workers desert him ; still he goes on with his work. Such examples of the exercise of a strong will are not rare in any part of the world. We are proud that one of the most outstanding world figures in this respect is our national hero, Mahatma Gandhi, who, with a frail body of not more than a hundred and two pounds in weight and with the forces of the mightiest world-empire ranged against him, has, through the exercise of a powerful and untiring will, been able to achieve much which commanders of military forces could hardly expect to equal, much less excel.

How does it happen ? How does a man make a momentous decision and abide by it ? In this pre-eminently conative effort, he is helped both by his intellectual and emotional habits and abilities. His intellectual life is concerned in the cognition of the goal. He has to attend to all the relevant factors of a situation, think reflectively on them and decide which goal is most in keeping with his own past ex-

periences and ideals for the future. Different courses may have different values according to the personal estimate of the individual regarding what is worth while for him to pursue. This estimate and judgment on value is to a great extent one of intellectual effort. Not only in the cognition of the right goal is the individual's intelligence in demand, but also in the apprehension of helpful and obsructive circumstances and in the divising of adequate means for its realisation. Strength of will without intellectual resources makes one obstinate and inefficient.

His emotional life also has great influence over him and his volition. One may assert his will against a natural, instinctive urge by conscious effort ; but that effort has no chance to be maintained for any considerable length of time unless it is supported by other instinctive urges and the emotional accompaniments of such instinctive urges. No man can fight against all the natural propensities at once ; he may fight against some with the aid of others, when these latter evoke emotions of their own. For instance fear may be overcome with the help of a desire to show one's importance (instinct of self-display), with keenness to acquire new knowledge and new experiences (curiosity), or with a native tendency to delight in construction or hoarding. Even sex impulse, which is regarded as one of the hardest to resist, can to a certain extent be tackled and controlled with the help of other natural instincts and emotions. But it is futile to expect to carry on at once a successful crusade against all instincts and emotions ; we have to make use of some against others. Those natural mental allies that we call forth should be organised into a system in our fight with certain other natural propensities. In other words will can effectively function only when it is employed in the service of some emotional system or sentiment, a system which implies the service on appropriate occasions of such factors as fear, anger, joy and sorrow. "Strength or weakness of will, other things equal, varies," as Shand says in a monumental work on character, "with the strength or weakness of the emotion or sentiment to which it belongs ; and hence it is that the

same man is strong in some directions and weak in others."*

Every strong sentiment has a tendency to develop a strong will in its support—says Shand. But is there no organisation other than that of the several sentiments? Is not personality itself organised as one whole? Shand thinks that it is, but that it is more useful in understanding *the science of character* to devote attention to the various emotions and sentiments and the "wills" they evoke—to "these many selves" of an individual rather than to his one self. Here we cannot agree with Shand; for we believe that the secret of a generally strong will is found in the organisation of the whole personality into one single system. James has devised a formula to show how an ideal impulse which appears at first to be a still small voice prevails over a more powerful natural impulse. The fact, says James†, may be most briefly symbolized thus, P standing for propensity, I for the ideal impulse, and E for the effort.

$$\begin{array}{lll} \text{I} & \textit{per se} & < \text{P} \\ \text{I} + & \text{E} & > \text{P} \end{array}$$

other words if E (effort) adds itself to the still small voice of I (ideal impulse), then I prevails over natural propensity. McDougall has amplified the usefulness of this formula of James, describing how E (effort) co-operates with I (ideal impulse). He takes E to be the effort called forth by a sentiment that operates generally in all one's life and unifies and integrates it into a single whole, *the self-regarding sentiment*. Just as a person may have a sentiment for his mother, for his school, or for his country, he has a sentiment for his own personality. This self-regarding sentiment, as we saw in the last chapter, is the basis of what we in ordinary speech call his self-respect, and like all other sentiments—nay, more than all other sentiments—calls forth on appropriate occasions his

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* A. F. Shand *Foundations of Character*, Ch. VI.

† James *Psychology Briefer Course*, Ch. XXVI.

fear, anger, joy, sorrow or other emotional concomitants. And the more the self-regarding sentiment is developed, i.e. the more self-respect a person has, the greater is the hold of *the will* in the life of that person over his primary passions, appetites and desires.

All normal persons exercise their will, and make choices, decisions and resolutions. As a matter of fact in no other aspect is the superiority of man's life over that of the lower animals more evident than in the exercise of his will. But there are extreme individual differences among men in the strength of will. Some persons seem to be able to make a clear decision promptly and to stick to it ever afterwards, whereas others find it difficult either to make up their mind in the midst of conflicting situations or to keep steady in the choice once made.

An *obstructed will* may be due to feebleness of impulse due to want of interest. More often the obstructed will is caused by conflicting interests. A case is reported of a hysterical woman who wanting to throw herself down from a window tried with one hand to pull it open and used all the strength of the other to keep it shut ! Though this is undoubtedly an abnormal case there are not a few persons who are called normal and yet find it comparatively hard to arrive at any decision regarding either trifling or grave matters. Extreme cases of difficulty to make up one's mind are referred to under the term abulia , and there are abnormal minds who remind us of the mythical donkey who starved herself to death between two hay-stacks not being able to make up her mind as to which one she should eat from, first. There are those who try to change their residence, enter into a new occupation, or launch out on a new enterprise. They start with plenty of good intentions but when the appropriate occasion for action arrives they conjure up new difficulties and fail to realize their purposes. All the plans they assiduously made for a number of days are left unexecuted on account of their failure to make up their mind when the critical moment arrives. Some of this hesita-

tion and vascillation may be due to the operation of repressed desires and complexes.

On the other hand there are those who make it difficult for others to place any reliance on their conduct through their impulsiveness. Sometimes they cannot tell themselves whether they will stick to their present decision a week or two later. If those whom we described on the previous paragraph may be said to have an obstructed will, these latter may be said to be of a *precipitate will*. They decide on lines of actions without mature consideration. Their unreflecting decisions often make them "repent at leisure." Neither the obstructed nor the precipitate will leads to the realization of the best that is in man. It should therefore be the endeavour of all good educators to help young persons to exercise their will in healthy ways, or as it is more generally described, to train their will. How can this be done ?

Before proceeding to consider the means of "training" the will, it is useful to recognize that some of the difficulties met with in the healthy exercise of the will are due to innate factors which cannot now be controlled. Very likely the strength of the will is affected by such psychological factors as glands and their *hyper* or *hypo* conditions, the strength and organization of the nervous system, and the condition of the respiratory and circulatory systems. These factors, in so far as they are innate, are more or less permanent and therefore cannot be radically modified, though with the help of the medical sciences some help can be given to nature, as in strengthening certain glandular activities. It is however useful to recognize that where marked natural defects have existed from the beginning of a man's life, that is to say where the defects are innate though not necessarily hereditary, he cannot be blamed if he is not able to exercise his will and exert control over himself as much as more naturally favoured individuals. For the same reason one should be considerate in one's estimate of those persons who exercised strong will while their bodies were strong and sound but now present quite a different picture, being weak.

irritable or fickle-minded. Even these naturally handicapped persons will profit to a certain extent if, in accordance with their ability, they can be made to heed the following suggestions.

The first fact to be noticed in this connection is that the will does not function by itself or for itself. It is called forth by one's *sense of values*. Therefore the best way of strengthening one's will is for him to have a clear sense of what he holds important in life. A man is only as great as his purposes and his ideals make him. In order therefore that willed activities may be most fruitful they should be enlisted in the service of ideals. "'Tis not what man Does which exalt him, but what man Would do."* An absorbing purpose—a dominating passion—in a man calls forth our respect even when we do not have any high regard for the nature of his ultimate goal. His purpose makes him strong and highly integrated within himself. This is why the stories of Hannibal, of Shakespeare's Lady Macbeth, and Milton's Satan have appealed to the imagination of successive generations.

Training the will implies again the cultivation of a number of useful *habits*. Even such habits as getting up every day at 5-30 in the morning whether it be pleasant to get up or not, answering a letter by at least the second day of its receipt, keeping up an appointment even when failure to do so does not entail any serious inconvenience to either party, and a number of other little habits are helpful in making our volitional effort easy and effective. As a matter of fact training, in ordinary speech, means not only the knowledge of rules and technique but their *repeated practice* to such an extent as to make the practice automatic. Training the will thus implies—paradoxical as it may sound—the repetition or practice of certain habits to the extent of making them automatic or non-voluntary.

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* Browning *Saul.*

Volitional activity develops only in so far as it is called forth in the service of plans and purpose that are felt to be one's own. Without *personal interest* there is no zest in action and no persistence. The goal should vitally appeal to the individual concerned. This is true not only of adults but also of children. Children's conforming to adult standards does not by itself make them strong-willed. They should be encouraged to form little projects and enterprises of their own, and the grown-ups should assume the rôle of helpers in these juvenile undertakings rather than of dictators. Coercion direct or indirect does not lead to the growth of strong-willed children, any more than compulsion and slavery produces ideal citizens of the state. It is true that occasionally we come across irritating cases of obstinacy in children. An older generation of child trainers thought that such attitudes of self-assertion must be stamped out by force and that the will of children must be broken and made subservient to the will of the parent and the teacher. "Break your child's will," wrote John Wesley, "in order that it may not perish. Break its will as soon as it can speak plainly—or even before it can speak at all. It should be forced to do as it is told, even if you have to whip it ten times running." It is however charitable to remember that Wesley had no children of his own! No one who cares for the fullest development of the child can afford to be less wise than a skilful *tonga-walla* who patiently deals with his horse when it shies. Obedience leads to self-realisation only in so far as it proceeds from a free acceptance of the authority or wisdom of another person or of an institution.

The *ordering of the social order* is however not a negligible factor in the life of children. Over-exciting events and circumstances that cause emotional conflict and strain in the child, of the kind we have referred to in the previous chapter and the chapter on environmental conditions, do irreparable harm to his

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* Quoted by James *Talks to Teachers*, Ch. XV.

volitional development. On the other hand the example of senior members of society who exercise

> Self-knowledge, self-reverence and self-control—
> These three alone lead to sovereign power—

enable the young to develop a healthy control over their passions and over any temptation to fritter away their energy on contradicting aims and purpose. Elderly friends of the child can do much in strengthening his will by sympathetic understanding of his point of view and by the appreciation of any progress that he makes in the field of conduct. Progress can also be " suggested " to the child. There is no reason to show that a *moderate use of suggestion,* suggestion that gives hope and self-confidence to the little ones, weakens their capacity to make their own mental efforts and decisions.

Even with all the help, sympathy and encouragement we may extend to them it is difficult for children to visualise distant goals and to work towards them. That a clear vision of a goal in the distant future and to work steadily for its realization is no easy matter even for those of mature age and understanding, is evident from the prayer that a great gentleman and thinker of the ninteenth century makes in a famous hymn

> Keep thou my feet ; I do not ask to see
> The distant scene ; one step enough for me.

When the ultimate goal is distant it will be useful to provide *intermediate goals.* For instance the reading of all the works of Charles Dickens or of Sir Walter Scott may appear to be too great an effort to even a good student in the higher classes of a high school. But if he is persuaded to read one or two works of the author chosen, he will do it with a feeling of greater ease and enjoyment ; when they are completed a few more can be attempted, and thus the series can be completed. That the near goal is more appealing than a distant one is clear from the more intense efforts which almost all students put forth

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* Cardinal Newman.

when the examination approaches than at the beginning of the school-term. Nor is it wise to confront the child with a piece of work that is clearly above his capacity. *Neither too easy* work *nor too hard* work calls forth one's best volitional effort ; it must be hard enough to tax one's ability without subjecting it to over-strain.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

McDougall	Social Psychology, Ch. IX.
James	Psychology Briefer Course, Ch. XXIV.
Shand	Foundations of Character, Book I Ch. VI
Aveling	Directing Mental Energy, Ch. XI.
Book	Learning How to Study and Work Effectively, Ch. VII.
Wheeler (R. H.)	The Laws of Human Nature, Ch. VII.
Sturt and Oakden :	Modern Psychology and Education, Ch. IX.
Woodworth	Psychology, A Study of Mental Life, Ch. XII, pp. 322-333.
Nancy Catty	Theory and Practice of Education, Chs. XI, XII.

XXII

MORAL CONDUCT : CHARACTER AND PERSONALITY

In the first chapter of this book we referred to formation of character and its importance in all organized life, a topic we more than once referred to in subsequent chapters. The subject however deserves more detailed attention. Formation of character as the sole aim of education is not our goal, especially if the term is used, as it often is, in a narrow sense, but if we consider the various aspects of a sound educational system we shall come to the conclusion that no other single aspect of life is of greater importance than the development of character. What, then, is meant by character? What are the elements that go to make up a good and stable character?

The word character is sometimes used for a man of peculiarities as when we say, he is a character. Sometimes it is used for a man with a good and reliable character as when we describe some one whom we admire as a man of character. But character is possessed not only by one who has admirable virtues ; a rogue or a rake also has a character. It is the sum-total of all one's internal system of tendencies, disposition, temperament and ambitions, and is affected by his physiological and cognitive abilities. It is the whole inner life of a person considered as a self-consistent individual that we refer to when we speak of his character.

Character thus implies organization or integration. The tendency towards integration is evident in all living things. Even a little bird's life tends towards integration. When the nest-building time comes she chooses a tree, flies round about it, and frequently returns to it with small twigs and leaves. She builds a nest and lays eggs in it. When the eggs are hatched and the little birds come out, the parent bird's activities are centred round them. If any enemy such as another bird or a snake comes to the neighbourhood of the nest, she and her mate are ready to engage in a fight even if the enemy be stronger than themselves. Their own hunger may not be entirely appeased, and still they try to feed the little ones. Thus there is a kind of inter-relatedness or organization even among instinctive activities ; and the unity of animal character—so far as it exists —depends on it. The essence of human character is the systematic organization of its tendencies and dispositions, native and acquired. Alexander Shand who tries to evolve a "science" of character refers to this aspect of life in his first law "Mental activities tend, at first unconsciously, afterwards consciously, to produce and sustain system and organization." *

In the organization or integration of the various tendencies and impulses, habits play an important rôle. In the chapters on Learning and Will we saw how repeated activities tend to be automatic, how random movements get arranged into a system through habit-memory, and how we may even speak of emotional and thought habits. Much of our work in character training consists of helping the young to form useful volitional moral habits. To teach truthfulness, for instance, it is not enough that the child knows that we expect him to speak the truth and to regard uttering falsehoods as heinous ; he should have *practice in actual situations* where he is expected to consistently speak the truth, situations where if he chooses he may tell a lie. To force him to tell the truth defeats the purpose he must be encouraged to experience the joy of

* Shand *Foundations of Character*, Bk. I, Ch. II.

speaking the truth even when its consequences may not be convenient. In the same way to help a boy to be courageous is to put him in situations where he can shirk if he wants and run away, but where we cheer him up and encourage him when he keeps faithful to his trust. A person who goes on speaking the truth becomes a habitual truth-speaker one who goes on behaving falsely or cruelly for any reason comes at last to be confirmed in his evil ways. Words alone do not help any one to be virtuous ; actual practice, and plenty of it is necessary before any habit becomes part of one's integrated system of inner life which we call his character.

It is important to notice however that any number of habits—physical, mental or moral—do not bring about a stable character so long as they operate in isolation. In that case there would be simply a bundle of habits, an untied bundle at that—as Dewey pithily observes.* Conduct would lack unity, would fail to be a system if each habit existed without affecting and being affected by the operation of other habits. Character could not then exist ; for character is the interpenetration of habits. This " interpenetration of habits " does not occur in all individuals to the same extent. In a man of weak character the various habits have, as it were, their own ways and are not interconnected ; they do not form a system. A person does a kind deed in a certain situation, and in another he speaks uncharitable and false things of a friend ; he fights bravely with a rushing bull, but is not bold to defend the reputation of a colleague in adverse circumstances. Why does he fail to maintain a uniform record ? How is it that there are differences in the attitude and conduct of the same individual in different environmental situations, and how does it happen that there are differences in character between one individual and another ?

The fact is that mere habit does not explain everything. Habits subserve the ideals and sentiments of people. A man's life is steady and self-consistent to the degree he follows

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* Dewey *Human Nature and Conduct*, Part I Sec. II.

certain ideals. Ideals imply a system of values. Some persons do not know a standard of values higher than the satisfaction of their instinctive impulses. As children we all started life at this, the instinctive level. Soon we began to care for the approval and disapproval of our parents and brothers and sisters expressed through a smile, a kindly word, an angry look or a sharp blow. These things made us pause and think when we were inclined to follow our primary impulses. Later we came into contact with our friends outside—in the school, on the play-ground and elsewhere—and tried to do things in conformity with the standards of our group. Along with this widening of experience went also a deepening of our inner life, and we slowly came to recognize that we have to consult the satisfaction or disapprobation of a still small voice within that seems to speak to us whenever we have to announce our standpoints to ourselves or to others on matters that require decision and personal choice. A good example of one who felt that he was respected by his society and still felt that he had to satisfy a higher standard is offered by Tukaram who says

"I am a bundle of sins, I elude the service due to Thy feet ; root up my mind within me, O Narayan, and punish me.
The service that people do for me, like a rogue, I accept.
Tuka belongs neither to Thee nor to the world ; he is a thorough rogue."*

In the course of this development we have learnt to recognize a hierarchy of values—a system of loyalties and sentiments—which gives us a standard by which we may measure the intrinsic nature of our own conduct and the conduct of others. It is the formulation of these ideals—unconscious though it be—and the measure of adherence to them that determines the degree of steadiness and self-consistency of one's character.

Recognition of the relative value of diverse goals is, however, an intellectual affair. Without some *fore-knowledge and*

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* Deming *Selections from Tukaram*, 74 (C. L. S.).

anticipation of possible results of different lines of activities one cannot make a choice when different possibilities are open before him. " For want of knowledge my people perish ", said a Hebrew prophet more than twenty-five centuries ago. The best intentions in the world without discrimination and understanding will not make one behave in a wise and efficient manner. Conflict is not always between a tendency to act in accordance with a crude, primary impulse and a more rational line of conduct ; very often one has to choose between such desirable factors as loyalty to a friend or devotion to wife and children, kindness to animals or safety of one's human neighbours, the path of personal distinction and affluence or of personal toils and obscurity, persistence in one's personal principles or respect for the sentiments of one's group. In making a decision in such hard and perplexing situations one has to make use of all his cognitive abilities he has to appraise himself of facts regarding more than one situation, use his imagination and reflective ability, study and answer the arguments of others, and make his own choice. In all these processes he has to be *intellectually active and alert.*

Among other factors that go to make up a man's character must be mentioned his disposition. *Disposition* is the result of the varying strength of one's several instincts. One man may have the instinct of pugnacity overactive in him ; and with the slightest provocation he may get angry with his neighbours. Another man in whom the instinct of flight is unusually strong is afraid to face any situation fraught with danger ; he may be afraid of the sight of blood, may be unable to listen with composure to any altercation between two or more people carried on in a high tone. The first of these two persons mentioned is said to be of an angry disposition, and the other of a timid disposition. Similarly there are those who by disposition are abnormally sensitive to all sex stimuli. Still others there are who by disposition are always amiable, always ready to follow other persons' lead—evidently the negative self-feeling is strong in them. We do not

know exactly how these differences in dispositions are ultimately caused ; to say that they are the result of *differences in the relative strength of the instincts* is to remove the veil of our ignorance just one step backwards, for we do not know how the instinctive differences arise. They are innate properties, and possibly they are also inherited ; more than this we cannot safely assert. Perhaps the most hopeful thing for us to bear in mind in this connection is that howsoever the dispositional differences originate, there is no doubt that the way each man gives vent to his original tendencies, the way he exercises them, determines to a certain extent the strength of their hold on him in life. In other words through habitual exercise of healthy tendencies and through diverting the course of unhealthy ones, a person can have considerable control over his own self. No man has a right to excuse himself for any ill-patterned moral conduct by asserting that he was so made and that therefore he need not make any effort at self-discipline.

There are *temperamental differences* also between one person and another, and it is generally thought that they are caused by physiological conditions. For instance some persons are more easily fatigued by work than others, and this difference is said to be partly at least caused by the accumulation of toxins in the blood during exertion. The influence of *over-activity or under-activity* of such organs as the thyroid, pituitary and adrenal *glands* is indisputable on temperament. For instance, if the deficiency of the thyroid secretion is very marked, the patient becomes sluggish in all his activities, dull and indifferent.

" Fortunately such defects can now be remedied by administration of thyroxin through the mouth. If it is taken in suitable amount, all the symptoms vanish, the patient regains a normal liveliness (which continues only so long as the drug is taken) and the growth and maturation processes resume their normal course. On the other hand, excess of thyroxin in the blood (produced either by excessive activity of the gland or experimentally by way of the mouth) produces the opposite symptoms, namely, those of a general excessive activity or irritability of the nervous system :

not one tendency only is brought into undue activity, but every kind of excitement is unduly intense ; the patient lives at too great a rate."*

Similar temperamental results have been demonstrated to be derived from the activity of the other glands also (see Ch. IV pp. 47 f.).

Jung divides all people into two types the Introverts and the Extroverts. The introverts are shut-in personalities, people who are afraid to enter into active fellowship with their neighbours. They are more interested in themselves than in others. "Of the two worlds, the inner and the outer with which the psychic life is concerned, it is the inner world which will be of most importance to the introvert."† On the other hand, what matters most to the extrovert is the outer world. He tries to get on well with his fellows, even if in the attempt he has to drop or change his views a little too frequently. The trouble with the introvert is that being too shy and retiring and being too much absorbed in his own fancies and plans, he may lose the expansiveness of a creative life. The extrovert's temptation on the other hand is to become an opportunist and time-server, sticking to nothing for a long time. As Van Der Hoop says, the extroverts "are governed more by their sense perception than by their inner needs and laws."

The factors we have mentioned above are closely associated with hereditary and innate differences. Differences are occasioned and accentuated by the environment also. Of all environmental factors there is none that equals the home in its influence on the development of character. The most impressionable and the most helpless period of the child is spent at home, and the influence of the home lasts for ever. Next in importance is the influence of the school i.e. of one's school mates and of the teacher. Not only persons but places, scenes and institutions wield great influence on the character of the growing person through suggestion, sympathy and other general ten-

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* McDougall *Energies of Men*, Ch. XII.

† Van Der Hoop *Character and the Unconscious*, Kegan Paul, 1923.

dencies. As we have dwelt with many of them at some length in the earlier chapters (see especially Ch. XI.) and as certain other aspects will again be touched in the chapter that follows, we shall now pass on to the consideration of a third factor in character formation.

Nothing is so important to an educator as the use which each person makes of his own life and its opportunities. Though each one is undoubtedly affected on the one hand by the character of his parents and his ancestors and by innate factors like his disposition, his fund of general and special abilities and his temperament, and on the other hand by his social heredity involving the influences of institutions and agencies that leave their indelible mark on his development as well as by all the details of his personal history including his prenatal experiences and by the operations of his own unconscious mind, we are yet confident that in spite of these powerful factors his conscious self—with its systems of values and its hierarchy of sentiments operating under the presidency of his will—has a great share in making or marring his character. In other words he is not only a witness of the building up of his character but is himself an active agent in the concern, is himself its most responsible architect. By identifying himself with a noble cause —famous or obscure—he can constrain himself to do things which he may be inclined on occasions not to do ; he can restrain himself when he is impelled to rush into certain lines of activities ; he can persist in any course of behaviour even when newer and easier alternatives offer themselves. In short, he can do much by conscious effort to organise his self and its various interests and activities into one. Though our will may not be as free as certain schools of thought consider it to be, there is no doubt that often we could have acted differently if only we had chosen so to act, and that we could often make a choice different from the actual choice we have made. We too can say, as Tennyson said,

> "Our wills are ours, we know not how,
> Our wills are ours to make them Thine."

The man of good character then is one who has mastery over his own feelings, urges and desires. He is at peace with himself and is a unified, integrated personality. When an emotional drive or instinctive urge within is in conflict with others of the same kind, or with reason, or with accepted standards of conduct, he takes a long and comprehensive view of things.

Character plays an important rôle in one's *personal efficiency*. No man can do his best in any learning process however great his intellectual resourcefulness may be, unless he has also a steady and reliable character. Character also affects a man's *intelligence* as an important factor in his *w*. In learning and memorising, in acquiring skills, in solving hard intellectual problems, in meeting difficult life-situations—in all these a man's character is inevitably in evidence. Character also affects his physical well-being. No man who habitually leads an evil life can expect to escape paying the penalty, sometimes of a very serious nature, even on the physical side.

Character development is liable to be one-sided and inadequate if *cultural and religious influences* are neglected. One who endeavours to lead the best life he can, cares not only for the true and the good ; the beautiful and the sublime have also an important place in his life-scheme. The charm of an extensive and varied landscape, the melody of music, the proportions and expressiveness of painting and sculpture, the harmony of architecture, the creative imagination of poetry, the beauty of sunset and sunrise, the joy of contemplating the ultimate realities of life—all these appeal to him and enrich his life. Apart from them, life tends to be low, sordid and prosaic. The ideal man appreciates all beautiful works of nature and art, and tries to not only make his efforts serve practical ends but also to satisfy his aesthetic sense. If, in addition, he is convinced that the ultimate nature of reality is spiritual and that he can enter into fellowship with this Spiritual Reality, his character will rest on firm foundations which difficulties and disappointments will not easily shake.

Character however cannot develop in a social vacuum. We can be at our best and do our best only when special attention is devoted to our position as members of society. The self-centred man is a poor specimen of mankind ; he does not make a good comrade, a good neighbour or a good citizen. He is a failure in the greatest art of life, *the art of living together*. Self-realization in the best sense of the word is possible only when social adjustments of the right kind are made by the individual. All good character traits have a common denominator of social courage and social usefulness and common sense. Good traits bind human beings together in a free association." *

Character implies inter-action of individuals, but when we want to emphasize the position of one individual in relation to others we frequently use another term to denote it, viz., personality. Just as character involves the study of the will as an important element in it, so character itself is regarded as an important aspect of personality. The words character and personality are often used as interchangeable expressions but it is more correct to take personality as something wider and more comprehensive than the former, as it is " not merely the organization of all so-called mental contents, traits, capacities and reaction tendencies, but that final perfection which virtually includes in itself all the principles of human activity and constitutes a unitary, self-conscious, and (to some extent at least) self-determining individual."† Again, personality implies some reference to the personal appearance and social manners of a person and the impression he makes on others, so that we often use such adjectives as pleasing, dominating, striking, or ungainly before the noun personality. When we use such expressions we think of an individual as he appears to others and in relation with others—we think of him as a member of society, a social unit. It is the development and enrichment

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* Beran Wolfe *How to be Happy Though Human.*

† Aveling *Personality and Will,* Chapter XI.

of a man's personality in this comprehensive sense that we regard as the highest aim of all education.

Individuality is found in all living beings—one teak tree is different from all other teak trees, and one parrot or one elephant has characteristics different from all other parrots or elephants as the case may be, while *personality* refers to the distinctiveness of man as higher than all other animals. Like individuality, personality also refers to characteristics and traits that mark out the person from all others, but it does more. It emphasizes, much more than individuality, the universality* of man—the common characteristics and qualities of a human being as distinct from all other animals, and stresses the moral and social significance of the individual man or woman.† It refers to man as a social force—" the man himself in so far as he moves the minds of other men, and is in turn moved by them. To impress and to be impressed—these are the main functions of personality. They constitute its dynamic meaning, the only meaning with which educational psychology is concerned.

In order that personality may thus be developed, the freedom of the individual is to be safeguarded both from the oppression of the state or any other external authority when it has a tendency to be tyrannical, and from the more subtle and very often more effective repression by over-zealous upholders of family or denominational prestige. On the other hand the individual should be so trained that he may clearly realize that the development of the best in him is made possible only by the give-and-take of social life and that the solidarity, efficiency and welfare of society is so important that he should be prepared to sacrifice much in the form of personal comfort and convenience—if need be, life itself—on its behalf. It is fair to admit that those who advocate individuality as the

* See Williom Brown *Science and Personality*, Ch. III.

† See *Philosophical Bases of Education*, Ch. III, by R. R. Rusk, whose lead I have followed in preferring *personality* to *individuality*.

‡ P. B. Ballard *The Changing School*, Ch. VII.

supreme thing in life, and therefore as the one thing the development of which must be sought after in education, are not blind to this two-fold aspect of a person's life—his intrinsic worth as a person in himself and the importance of his membership of society. The word 'individuality' however has to be stretched in order to convey this double sense, and this is why we prefer to use the expression *enrichment of personality* where Sir Percy Nunn and many others following him speak of the *development of individuality*.

It is in this more than anywhere else that many of the tragedies of life take place—that people do not know how to get on with their neighbours, how to adjust themselves in their social environment. When they were children they mastered with comparative ease the art of adjusting their behaviour in relation to their material environment. Material things and situations are more or less fixed and stable and if the child once understands how they operate he can successfully adjust his behaviour accordingly he may be angry, elated, fearful or curious—they do not mind any way, nor show any change of attitude. Not so the human beings. Sometimes they praise him for what he does, another time they punish him for doing the same. Once they give him a smile, another time a frown ; once they cheer him up, another time they discourage him and disparage his efforts. These mercurial variations on the part of others make the child perplexed and baffled, and it takes him a long time before he can evolve his own system of judgment and belief regarding the conduct of other persons and is able to adjust his own behaviour to it with anything like confidence.

In a healthy social environment no man has a right to expect to have his own way in all things. On the other hand it is impossible to entirely follow the lead of others, either. To accept persons and things as they are and still not to let go one's own personality, to make others help him in the furtherance of his life-scheme and at the same time to seek the welfare and happiness of others—this is a hard lesson which every one

should learn before he can call his life a success. No man finds himself in an ideal social situation ; there are many factors that are unpleasant to him and are jarring to his fine feelings ; there are many people who try to swamp his personality by overwhelming him with kind deeds and kinder advice ; there are many who obstruct his movements and meet him with scorn and ridicule. In the face of all these factors, one has to maintain his own personality and face facts as they are. As a matter of fact his success in life is " measured " by his capacity to meet this two-fold task of being true to his own self and of getting on well with his neighbours.

The term *measure* in the above sentence is used figuratively, but it is not infrequently used nowadays even in a literal sense when applied to personality. To study anything objectively it is necessary to measure it, and the effort even in human sciences is to employ as much as possible objective tests and standards. Psychology started with the method of introspection, but it now employs objective tests to examine its premises and to arrive at scientifically accurate data. Psychologists have achieved a fair amount of success in their effort to measure " intelligence." But even the measurement of intelligence is complicated by factors that are not purely cognitive. In doing a test, the interests and attitudes of a person count for much ; sometimes a highly intelligent person who is not keenly interested in what he does, may not score as many points in a test as a less intelligent, but more enthusiastic, testee. His score of intelligence has been spoilt by personal factors. The same applies in common life ; a high grade intelligence is no guarantee that its possessor will do well in life. Here the personality of the individual should necessarily be considered. So attempts are nowadays made to measure personality.

No one claims that any test made hitherto to judge and measure personality has yet been perfectly successful. There has been a subjective element in all tests applied, but the effort has throughout been to make the estimate as objective

as possible, i.e. to make them as less dependent as possible on the individual general impression of the tester. One of the means employed to achieve this result is to analyse personality into component units. Thus such factors as the emotions and dispositions, the temperaments, the introvert-extrovert types of reaction, and the will—have all been considered and evaluted separately, and attempts have been made to prepare scales and standards regarding them based on the examination of several hundreds of persons. Even finer distinctions have been tackled—such as resourcefulness, cheerfulness, optimism, and originality.

The methods employed are different, and undoubtedly of different values. One of the earliest was the *questionnaire method*. A series of questions was put to different persons and each one was asked to answer regarding himself questions like

Are you disturbed by the presence of others when you work?

Do you day-dream much? etc.

The interview method is another. Both these methods have their limitations. Regarding the first, no one can be expected to be an accurate judge of himself. As for the second, the person interviewed is likely to be judged by the whole impression he makes on the interviewer rather than by details taken as details, and each interviewer will have his own subjective impression.

Another method is to make a *five-point scale* regarding each trait to be assessed. Suppose we regard "optimism" Then we make the following points on a line

Looks always at the bright side of things.	Is generally hopeful, rarely expects evil.	Regards both bright and evil prospects.	Takes more often gloomy than bright view of things.	Always expects evil to happen.

Or we take *attention*

Is so intent on the thing at hand that he does not notice other things.	Returns to task immediately after any distraction.	Keeps attention fairly steady.	Occasionally attends, more often distracted.	Cannot attend to a thing for even a short period. Attention seems always to wander.

Still another method is what is known as *the key-method.* Instead of five points, five best understood individuals are taken as keys," and others are adjudged in comparison with them.

There are what are known as *situation tests.* A number of *situations are described* or indicated to the testee and he is asked what he would do under the circumstances. Here a high score may be scored by an intelligent person, but it does not however mean that the high scorer will do equally well in actual life situations. But there is no doubt however that some people do wrong because they are not able to comprehend what is right or wrong in the circumstances. *Actual situations* have been cleverly provided in some tests, so that a testee may give false answers if he wants, the falsehood of which may be detected through other parts of the test.

Association tests which indicate departures from the normal, through lengthening of reaction time or through unusual responses, are also helpful in finding out personality traits.

Which-ever method is used, the scores on different points are consolidated into numerals or into personal graphs. These methods, as has been already pointed out and as is admitted even by those who frame and administer these tests, are not perfect. In a number of them there is still a subjective element which it is hard to eliminate entirely. Again a performance of a high order in a test or even in one life-situation is no guarantee that the same order or quality of performance will be maintained by an individual at all times and in all places. Nevertheless, there is no doubt that the efforts to adjudge objectively

a person's interests and attitudes and wishes and prejudices are at least as useful as the attempts to assess accurately his aptitudes and cognitive abilities. If they have not yet fully succeeded in measuring, they have at least helped in confirming the reality, of these great "imponderables"

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Shand	Foundations of Character, Chs. III—V
McDougall	Energies of Men, Ch. XII.
" "	Outline of Psychology, Ch. XVII.
Aveling	Personality and Will, Ch. XI.
Dewey	Human Nature and Education, Part. I, Sec. II.
White and Macbeth	The Moral Self, Chs. III, VII.
W. Brown	Science and Personality, Ch. III.
R. R. Rusk	Philosophical Bases of Education, Ch. III.
H. R. Hamley (Ed.)	The Testing of Intelligence, (Ch. XI by Dr. P E. Vernon).

XXIII

MENTAL HYGIENE

Hygiene of the body is considered to be important by all ; for they recognize that prevention is better than cure. So in every civilized country arrangements are made not only for the cure of diseases but for their prevention as well. When rats begin to fall sensible people give special attention to inoculation, and to general cleaning up ; still more sensible people anticipate the possible evils of the future and in good time see that houses and surroundings are so kept that rats do not multiply at all. The same principle is applicable to mental life. There are serious mental maladies such as double or multiple personalities, various forms of insanity, phobias and delusions. Some of these maladies may be caused by organic or structural faults ; but opinion is growing among medical people that these troubles are more often functional than organic—that they are not so much caused by any defect in the brain or in the nervous system as by the faulty exercise of one's cognitive and emotional life, and that the present serious situation in a patient's mental health has been brought about by a slow process of ill-adjustment to the environment. Just as many physical ills can be avoided or successfully treated if right measures are taken in the beginning, so also it is possible to help persons avoid mental diseases and develop efficient personalities.

Mental maladies may be occasioned in several ways, but they are alike in that they are all expressions of conflict. The conflict may be between a desire to be fair to the individual himself and to do the right thing by society, or it may be a conflict between one ego-centered desire and another. When the conflict is too great for the individual to solve, he loses the most distinguishing mark of a strong personality, i.e., his integration. A normal life is one in which the various tendencies are balanced ; but when the conflict is too strong, this balance is upset—one motive or series of motives carries the individual off his feet rendering the other tendencies or motives comparatively inoperative. Reference to a few major kinds of troubles will make this clearer.

We shall take dissociation, for example. Dissociation occurs where a person has two contrary desires and where both cannot be equally satisfied in an integrated self. The most quoted example of dissociation comes from fiction, from Stevenson's *Dr. Jekyll and Mr. Hyde.* Several cases of dissociation are studied by psycho-pathologists interested in double or multiple personality. One mark of dissociation is that the normal personality is not conscious of the other personality. In the Chapter XVII we saw how sudden shocks sometimes result in persons forgetting their whole past history. Many such " shell-shock " stories were told of soldiers during the World War, stories of men who suddenly lost the use of their arms, legs or tongue. Very often dissociation takes place suddenly, though the conflict and the repression that prepared the way for it must have been operative for years back. For instance the soldier who suddenly becomes unable to walk was very likely having an unbearable conflict between his sense of duty as a soldier and his desire, as a peaceful citizen who hated war and bloodshed, to be at home attending to the education of his children.

There is another trouble called *Paranoia.* Here the patient has delusions of grandeur and persecution. He feels that he is great but that others hate him for his greatness. Here too

there is conflict. A person cannot reconcile himself to the fact that he is small and insignificant, and that other people are favoured above him. He feels himself unable to compete with his more fortunate neighbours and arrives at the comfortable belief that his misfortune is due to persecution by others, and that but for this systematic and persistent persecution his greatness would have been recognized. At the root of the disease we see, as Prof. Bleuler says,

> A situation to which the patients are not equal, and to which they react by means of the disease ; the young man feels in himself the impulse to achieve and be something worth-while, but because of an intellectual or, especially, a characterological weakness, he does not get as far as he would like. He is not sufficiently indifferent to ascribe the failure to fate or to let it rest on himself ; still less has he the strength to admit his own mistakes to himself and make them clear to himself. Then, according to the every day method, he blames the environment and merges into the delusion of persecution ; or, in case of a more cheerful disposition, he fulfils his wishes in fantasy and works himself out of reality into the delusion of grandeur."*

The small beginnings of serious cases of fully systematised and incurable delusion which are diagnosed as *paranoia* may be seen in " a mild and fleeting and perhaps well-grounded sense of injury and belief in one's unrecognized merits ".† We refer to the educational importance of this knowledge, later. (p. 315).

A third kind of grave malady is what doctors call Schizophrenia or *Dementia Praecox,* which arises out of a person's loss of emotional or affective contact with his fellow-men. This is a trouble which particularly affects those of an introvert tendency. As McDougall lucidly puts it, " Schizophrenia involves excessive introversion, and it involves also severe and prolonged conflict ; but it involves more besides. It involves that loss of personal *rapport,* that loss of sympathetic contact, that complete irresponsiveness, that appearance of complete indifference to persons, which is the most characteristic

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* Bleuler Quoted by McDougall *Outline of Abnormal Psychology* Ch. XX. p. 336.

† McDougall *Abnormal Psychology,* Ch. XX p. 336.

symptom of the disorder."* It might appear from his inactiveness and listlessness that the person affected by this disease has no interest in himself. The fact is just the opposite he is all fixated upon himself, he is in love with himself.

Several other forms of mental disorder arising out of internal conflict and discord can be mentioned such as compulsions and obsessions, vague fears and anxieties, tics and stereotyped movements, hallucinations, sex perversions, maniac depression and exaltation. What we observed in the case of dissociation is true of each of the other troubles—none of them arises all at once in a patient's life, even if in some cases the outburst may be sudden. Years of conflict and unrelieved tension prepared the ground for the final phase which we now explicitly notice and deplore.

As a matter of fact many of the troubles must have taken root right in childhood. No period is so important for mental health as early childhood. We have already referred to the helplessness of the small child (see pp. 246f) and to his need of love and sympathy. He feels that he is capable of activity and that he can do useful, helpful things ; and what he does, gives him intense satisfaction. But we grown-ups want him to be idle or inactive, when we do not want to be disturbed, and generally expect him to behave not according to the drives and urges within him but in accordance with the scheme of life we have clearly or vaguely formed for him. Many parents and teachers are grievously ignorant of the fact that our tendency to interfere with the natural activity of the child may, if carried to extremes, develop in him a sense of inferiority—a danger that should as far as possible be avoided. For a sense of confidence is the basis of all satisfactory adjustment on the part of the child with his material and social environment, and of all integration within his own self.

When we say, don't touch, don't talk, don't move about, don't play, don't look outside, don't pull, etc.

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* McDougall : *Outline of Abnormal Psychology*, Ch. XXIII, p. 382.

—we interfere with his spontaneity. All movements of the adults are not allowed by others, and are not free; and no doubt all movements of the child also are not permissible. But let us at least recognize that the child has some right to freedom. We have no right to interfere with his movements merely because they inconvenience us or because they do not fit in with our scheme of life. A repressed child may develop into an adult who is not sure of his right to any initiative, may be too sensitive to criticism, may be too shy, reserved and unwilling to take a risk ; or on the other hand he may become a rebel tending to regard all authority as irksome, may err into delinquent ways, and in extreme cases may have even to be branded as a criminal. If all thwarted and repressed children do not express their sense of frustration in these extreme forms, let us be thankful for the robustness of the mental health with which they are gifted—just as we have reason to be thankful that all children born in a malarial region or born in or near homes of tubercular patients, do not catch these ailments.

It is not only repression and harshness in early childhood that can be harmful. Even the fond devotion of a mother who is so anxious about the safety and welfare of her child that she does not willingly allow him to play for any length of time alone or with other children, is fraught with possibilities of future trouble for the child she loves so well. For one thing, her anxiety regarding him may have its origin in some complex of anxiety or sense of guilt she may have entertained—unconsciously—for many years, nay it may have had its origin even in her childhood ; and, through sympathy and suggestion, her child may catch the contagion of these anxieties and worries. Even if there is no grave complex working in her, her undue devotion to him and her eagerness to make life easy for him tends to make him so ready to depend on others that he may have little desire to meet boldly the thousand and one little tasks and problems that inevitably await all normal individuals. No wonder that such fond unthinking devotion of a

mother or any other member of the family is described as "murderous love" by one writer.*

Quarrel among parents is another source of emotional instability in children. When the two persons whom the child regards as his most loving and helpful friends, guides and protectors not only behave unsympathetically to each other but are opposed to and fight with each other, the child feels bewildered. The sense of security and calmness, which is one of the essential conditions of all normal progress in the life of the child, seems to be undermined; and the resulting sense of uncertainty, helplessness, fear and worry makes the child unprepared to meet men and things in general with a feeling of competence and courage. A feeling of inferiority is thus engendered in him, which he finds hard to shake off even when he grows up and has an adequate intellectual comprehension of the true nature of his trouble and its early origin.

Unfriendly relations between brothers and sisters in childhood sometimes do much harm to sensitive children. Recently Dr. Masani, psychiatrist of the Child Guidance Clinic of the Tata School of Social Work, Bombay, reported a case of a boy who was taken to him. He felt compelled to go out to the urinal about twenty times a day and about the same number of times in the night. When the trouble was narrated to the doctor by the boy he said that he went out not twenty times but fourteen. This special reference to fourteen set the doctor thinking. Later, in talking with the boy it was found that he had three sisters. He referred to two of them by their names, and of the third he spoke not by mentioning her name but her age, which was fourteen. She was unkind to him and often boxed him on an ear which had been sore. The boy was allowed by the doctor to play in the clinic. In the play-room along with other things there was a basin of water and a doll. He put the doll into the basin, and tried to send it down to

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* Beran Wolfe : *How To Be Happy Though Human.*

the bottom by directing a continuous jet of water upon it with a piece of rubber tubing. He was evidently trying to drown his merciless sister through the immersion of the doll, which was a sister-substitute. He was made aware of it, and admitted when questioned by the doctor that it was what he would do, if he could, to the sister too. In the course of the talks with the doctor, he saw the whole situation afresh, and went back home with the knowledge of the meaning of his symptom, namely an attempt at drowning his sister, and with this knowledge his "fourteen times" trouble disappeared too. Stress and strain of this kind—in some form or other—occur in many a home where stronger or older or more naturally favoured children, instead of helping and befriending the weaker ones, behave harshly and unsympathetically towards them. The effect may last a life time throughout their life the children so treated tend to be shy, timid, bitter, and resentful in dealing with those superior to them ; and to become harsh, irritable and unkind to those weaker than themselves. Functional disorders of the physical system also occur at times, as happened in the incipient case mentioned above.

A sense of insecurity and inadequacy is sometimes very badly driven into the mind of the child at school. Some teachers are rigorous disciplinarians : they demand too high a standard in the studies of the child, and they expect him to develop the passive virtues of obedience, deference to authority and submissiveness. The virile qualities of adventure, initiativeness and self-assertion are taboo to them. They punish the children in such a way as to wound their self-respect. Boys are asked to keep standing for many hours, which is a cruel thing to do ; but sometimes they are asked to stand up on a bench, which is insult added to injury. There are teachers who try to enforce obedience with the tool of ridicule. Pupils are ready to improve upon the standard set by the teacher in ridiculing their unfortunate and helpless classmates. If there is some one with a physical handicap or an "ugly duckling" in the classroom his life is made a regular misery. Poverty and its con-

sequences such as inability to buy a sufficient number of clothes or books, ill-reputation of parents for drunkenness for theft or for being sent to the gaol, consciousness of being intellectually backward—these and many other similar factors tend to make the little ones feel small before their friends at school.

That even a single casual incident or an accident which others may consider to be a trifling matter may produce lasting consequence on a person is clearly shown by examples of the kind mentioned by the late Dr. Rivers, who helped a medical man of about thirty-one to get out of an abnormal fear of enclosed spaces. It was found that his fears went back to early childhood when one day he was terrified at the sight of a brown spaniel that growled at him in a dark and narrow passage. The emotional condition associated with the infantile experience was so developed and fixed in the man that he felt discomfort and dread whenever he travelled in an underground train or sat alone in a room or attended even a crowded picture-house. One of my students—a teacher under training—had an unaccountable dislike of dogs. He honestly tried to get rid of this attitude, but do what he would he could not tolerate the presence of a dog. In the course of his study of the unconscious an old incident flashed through his mind, which provided him with the solution of his strange attitude and incidentally also helped him to get out of it. When he was a small child he woke up towards the morning and went to sleep with his father. His father used to be disturbed at times by a dog who wanted to share the bed of the master. To keep off the unwelcome bedfellow, he had kept a cane with him. When the little child went to the bed of the father, the latter thought it was the dog and applied the dog's cane to the boy. The father discovered the mistake a little too late. As for the son his unconscious helped him to project the trouble on the dog and so, that dog and all other dogs became objects of his disdain.

Restlessness regarding sex matters is recognized as a fruitful source of ill-adjustment. What is not as generally recognized is that all sex troubles do not have their origin

in adolescence. Psycho-analysts of the Freudian school have laid much emphasis on the fact that "sexuality is certainly present from the very beginning of life, and is not a thing that comes only later."* Freud has introduced the term *Oedipus Complex* to denote the sex attraction of the boy to his mother and of the girl to her father.† Even if we do not follow Freud in his stress on the sexuality of the small child it is helpful to note that there are at least a few abnormal children, and even babies, in whom sex-feelings are wide awake ; that even in the case of others some faint sex-urge is present ; and that what careless or ignorant parents or senior friends are inclined to regard as trifling incidents may at times cause great tension of feelings in juvenile minds. The witnessing of a sexual act may cause a bad shock to the child. It is for this reason recommended that the bedrooms of children and of parents should as far as possible be separate.

Sexual perverts who use children for their selfish indulgence do not pause to think of the grave evil they perpetuate on their innocent victims. It causes a tension and revulsion of feelings in the latter, which may express itself either in similar sex acts by children or other forms of anti-social behaviour, or both.

Sex difficulties come pronouncedly to the fore in adolescence. McDougall refers to a striking array of cases, studied by Dr. William Healy, of repeated thieving by adolescent children of otherwise good character and reputation, children who have been led astray by evil examples. The persistence with which they indulge in their misconduct might make one think that they enjoy doing what they do. Facts however are otherwise. As Healy says :

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* Freud *New Introductory Lectures on Psycho-analysis*, Sprott's Transln., 1933, p. 84.

† Some persons use the terms *Elektra Complex* for the girl's sex-feelIng to the father. Freud himself however uses the term *Oedipus Complex* in the above book in the case of both boys and girls.

"We know that this is often not the case, because the effect of the conduct in question is not in any sense pleasurable to the mis-doers, nor do they regard it as such. The wrong-doing is not even primarily contemplated as likely to give them high satisfaction. So far as we can learn, the impulse arising from mental conflict has no penumbra whatever of delightfulness; on the contrary, it seems as if one of its most noteworthy characteristics is the curious absence of any idea of pleasure to be derived from following it. We have heard the expression from not a few mis-doers "I don't know what made me do it, I don't want to do it, and I feel sorry afterwards."*

There was a boy called Geddy, who repeatedly got into trouble through driving away in some horse-carriage (buggy) left standing at the road-side. There was another boy named Armond who in spite of good intentions found himself masturbating and stealing things, though he was well supplied with pocket money. Milda was a healthy girl of decent family who at the age of eleven repeatedly stole small articles. In each of these cases, explorations revealed that the evil habit had begun a few years ago when the sexual impulse was first stirred by some person who at the same time also induced it to contemplate the possibility of stealing. Normal conduct was restored when the children were able to recognize the source of trouble and to visualize the whole situation from a new and integrating stand-point.

Cases of persistence are brought before what are known as *Child Guidance Clinics*. The Child Clinics are usually staffed by a psychologist, a psychiatrist (a mental expert specially qualified to deal with psychopathological cases), and a social worker. They usually requisition the services of a regular medical doctor and of the school-master to help them to understand the physiological factors particularly concerned and to hear about the scholastic progress and general social characteristics of the problem child. The home conditions of the child are carefully and thoroughly studied, and necessary advice and instructions are given

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* William Healy : *Mental Conflicts and Misconduct* Quoted by McDougall in *Outline of Abnormal Psychology*, Ch. XIX.

to the parents concerned. Progress in normal development is particularly difficult in those cases where through ignorance, vice or callousness the parents' co-operation is hard to obtain. In extreme cases where it is found most necessary, advice is given to remove the child from the home and to give him or her a new environment with new chances to make good.*

Those responsible for the education of adolescent boys and girls have a special responsibility in the matter of mental hygiene. It is in adolescence that persons generally begin to be explicitly sex-conscious. Where parents are properly educated we expect that some information regarding the physiology of reproduction has been given to children even before adolescence, as answers to natural questions put by the children themselves. Such information should necessarily be given at least in adolescence. From a number of dreams collected from adolescent boys and girls, the writer believes that they feel much bewildered in this period. Many of them dream that they are travelling alone or with a few friends in a pathless wilderness and that therein they are attacked by giants, monsters and serpents in such a way as to leave them no chance of escape. New urges and desires are stirred in them at first vaguely, and later on with a more vivid understanding of the nature of the impulses that work in them. The awkward social manners of the junior adolescents bespeak a certain amount of inward uncertainty and lack of confidence.

Masturbation is at this stage a common experience, which itself is an indication of want of boldness to make love to, and win the affection of, a member of the opposite sex. This kind of experience is followed by a tendency on the part of the person to be sexually attracted towards a member of the same sex. This is known as homo-sexualism. But neither auto-erotism nor homo-sexual attachments can give adequate satisfaction to

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* *The New Era* (London) in its May and June Numbers, 1936, has some very useful articles on this subject.

an individual ; the natural psychic development of a person is perfected only when it culminates in deserving and winning the affection of a member of the opposite sex. There are however many persons who in spite of attaining the proper age and possessing the economic means do not wish to marry, being fixated upon the auto-erotic or homo-sexual stage of sex-life—an experience which may result in actual retrogression or *going back* to a childish level of thought and emotional experience. Where marriage for any good reason is an impossibility, the person concerned should have other creative activities which give scope to the exercise of that life-energy which would normally have been spent in devoted service to a family—in pleasing and caring for a life-partner and children.

Adolescence is a period of general expansiveness in the intellectual and social outlook of persons. In younger years they were more interested in their own affairs than in that of others ; and it was only late in childhood that they felt the pull of the gregarious instinct and vividly recognized that for their own personal satisfaction itself they needed contact with others in the form of co-operation and competition. This social sense is strengthened and widened in adolescence when the individual feels that he is a member of wider units and solidarities. Again many youngsters, especially towards the close of adolescence, are obliged to get out of the protective care of their homes and to find remunerative work for themselves. All this implies much faith on the part of the individual in himself and in the social order in which he finds himself. All persons cannot boast of as much boldness and confidence as they wish to have ; but most people are able somehow to shift for themselves without special attention from others. There are however not a few cases that indicate a degree of marked inadequacy—cases that call forth sympathetic understanding and tactful help and guidance from others. Even in some of the so-called normal cases these danger signals may appear, and parents and teachers will do well to see that these unhealthy personality traits are as far as possible eliminated.

One of the worst weaknesses that most of us are likely to be subjected to is the tendency to blame others for the mishaps that befall us. We have referred to this evil under the name the psycho-analysts give it, *projection* (see p. 96) : we attribute our failure to sinister interference by others and to adverse circumstances. More often than not, there is an element of truth in implicating others, for rarely are we alone in our activities; deliberately, and more often casually, other persons interfere with our progress. The real danger in this situation lies in what one writer calls a distortion of emphasis.* Although the blame may largely rest with us, we can lessen the sense of inadequacy if we magnify the part played by others. The child often seeks to escape punishment or censure by pointing out how others were at fault. It is however a great disservice to the child if his elders even tacitly encourage him to put the blame on others. The danger is that he may get into the habit of considering other persons responsible for his own well-deserved misfortunes. If regularly indulged in this habit is likely to pave the way in adult life for that serious malady called paranoia mentioned earlier in this chapter (p. 305), the main characteristic of which is the confirmed notion on the part of the patient that others always think ill of him and plan to do him evil. It is true that every child who blames others does not become a parnoid, but it is immensely wise to encourage the child to trust his own powers and not to be worried by little failures and still less by the unkindness or lack of co-operation of others.

It is easy in the face of failures and disappointments to turn away from the outside world and to be engaged with the affairs of one's own inner life, viz, to lead an introverted life. A cricket player who was good with the bat and the ball expected to be elected captain of the school eleven ; but he was not, with the

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* J. J. Morgan : *Child Psychology*, Ch. XV., Harrap 1934.

result that he did not like to participate at all in subsequent fixtures. An attitude of non-co-operation is often more harmful to the one who fails to co-operate than to those with whom he does not want to co-operate, as they can easily find others willing to associate with them. We observed earlier in this chapter that extreme introversion is likely to end in dementia praecox and that this fell disease is not caused in a day. It is a constant habit of turning away from the world, often practised even before adolescent years, that has resulted in this disease of "self-love." Those who spare their life by cherishing and humouring their own susceptibilities and do not wish to have anything to do with their neighbours, who regard their own estimate of themselves as much more precious than the opinion of others, are likely to impair their own wholesomeness of spirit. Whether we like it or not, we are all members one of another ; and we cannot cut ourselves adrift from our social milieu and be sound in mind any more than any of our limbs can enjoy health and strength without maintaining relationship with the rest of the body. Orthodox disciplinarians think more of curbing the turbulent spirit of the law-breaker than to win over to normal conduct those among their boys and girls who are inclined to be inordinately shy and melancholic, or to sulk and non-co-operate. If however discipline is for the good of the young rather than to uphold the prestige of the custodians of order and authority, it should be the duty of those who are placed in positions of trust and authority to see that the second group gets at least as much attention as is given to the more noisy lot. It is likely that the boisterous ones will somehow adjust their own behaviour without special help ; but the sulking, shut-in personalities require more skilful and sympathetic handling.

Introversion is often caused by an indulgence in day-dreams, which again like many other manifestations of abnormal personal development, are caused by unsolved conflicts (vide p. 304). As one writer cryptically puts it, "what one might have been and is not, undoubtedly

helped to produce what one is."* Though all day-dreams are caused by an inward distinction between what might have been and what is, between a desired ideal and an undesired reality, they are not all equally harmful. As a matter of fact without a certain amount of day-dreaming great and extraordinary enterprises would never have been accomplished. If people always thought only of things that were strictly practicable and there were no dreamers of dreams, they would never have been able, as we saw in Ch. XIII., to produce glorious works of art, or to make great discoveries, or epoch-making inventions. Admitting all this we have yet to confess that day-dreaming can be carried to extremes, and that then it may develop into the mental evils mentioned in the above paragraph and earlier in this chapter. To help children out of such a life of extreme phantasy we should remind ourselves of the origin of phantasy, how it is caused by failure on the part of the persons concerned to successfully cope with their tasks and situations. Let us therefore give the child a chance to win real victories ; for to the extent that he wins some little triumph in the real world, to that extent will the victories of the imaginary world lose their hold on him.

What is known as misconduct itself is often due to a sense of inferiority ; and to hide this feeling of helplessness and weakness people sometimes behave in an anti-social manner. Unruliness, boisterousness, rowdyism in various forms, boasting speech, strutting manners, practical jokes involving serious consequences, telling lies, truancy, theft—all these may be forms of compensation for a consciously or unconsciously felt sense of incompetence. Sometimes physical defects such as bad teeth, enlarged tonsils or adenoids, malformation of certain limbs, or stammering may cause or aggravate this sense of inferiority. Tension brought about by these and by such other factors which we have already mentioned, as acute sex-curiosity or unsuccessful attempts at sex-repression, may cause such feelings of helplessness and desperation as to lead to

* E. S. Conklin : *Principles of Abnormal Psychology*, Ch. XV, p. 359.

masochism (self inflicted pain) or to sadistic cruelty (cruelty inflicted on well-beloved persons). In all such cases the subject should be individually studied, the cause of his emotional tension must be properly understood, and above all his faith and self-confidence should be revived. He must be encouraged to boldly face the giant of fear and despair, who then will retire and disappear. Charles Mackay has well represented the highly beneficial consequences of a bold facing of reality

There came a giant to my door,
A giant fierce and strong;
He scowed and frowned he shook the ground;
I trembled through and through;
At length I looked him in the face
And cried, "Who cares for you?"

The mighty giant, as I spoke,
Grew pale and thin and small—
"Is this," I cried with growing pride—
"Is this the mighty foe?"

He sank before my earnest face,
He vanished quite away,
And left no shadow in his place
Between me and the day.

We have in this chapter, in Chapter IX, and in several other places, mentioned a few of the abnormalities which, if not attended to in time, may develop into serious mental disorders. We have in no sense exhausted the list of incipient troubles which may easily assume unwelcome proportions. If teachers and parents are keen that these evil developments should not take place, they should give clear attention to their own mental life. A nervous and ill-balanced personality is sure to exert a baneful influence on the growing child. It has been truly said that behind a problem child there is more often than not a problem parent, and let not the unfortunate child be still further burdened with the load of a problem teacher! Teachers are in honour bound to

lead a balanced, confident and efficient life not only for their own sake, but also for the sake of the young folk entrusted to their care. They cannot do otherwise when they realize that their responsibility is not only to give intellectual instruction to the young, but to help them to grow into efficient personalities—men and women who are at peace within themselves and are socially well adjusted.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

McDougall	Energies of Men, Ch. XIX, XXI, XXII.
	Outline of Abnormal Psychology, Chs. XI, XII, XIX.
Freud	New Introductory Lectures, XXXV.
Adams	: Modern Developments in Educational Practice, Ch. XI.
O'Shea (Ed.)	: The Child, His Nature and His Needs, Chs. VIII, X, XII, XV.
Morgan J. J. B.	Psychology of the Unadjusted School Child, Ch. VI, VII, IX, X, XV.
	Child Psychology, Ch. XV.
Starch	Educational Psychology, Ch. XIII.
Benson & others	Psychology for Teachers, Ch. XXII.
Beran Wolfe	: How To Be Happy Though Human, Chs. V, VII
Brooks	: Psychology of Adolescence, Ch. XVI.

XXIV.

FREEDOM, DISCIPLINE AND LIFE ATTITUDES.

We have come to the end of our quest. We started with an enquiry into the *aims of education* and came to the conclusion that each individual or community has to decide what it is that person or community tries to obtain from education from time to time; that the various commonly accepted aims of education are not all necessarily conflictory—though some of them undoubtedly are ; and that, whatever particular aims we may follow in our educational enterprise, about one there cannot be any doubt whatever, viz., the development of the personality of the individual who is subjected to the educative process. We tried to find out *how far a knowledge of psychology is helpful* to the teacher in this respect. Then we tried to evaluate the importance of such *fundamental factors in education* as the biological nature of man, the relation between the body and the mind, the specialized tendencies commonly known as the instincts, the more general and adaptive tendencies such as imitation and play and repetition, the influence on man of his membership of a community, the drive of unconscious urges and complexes within one's own mind, and the limitations that he is subject to through the inevitable working of heredity and of the physical and social environment.

Passing on to what is more narrowly known as the *psychology of learning*, we considered sense perception as the basis of all intellectual activity ; and observed that man has an

immensely greater capacity than all other animals of apprehending even those things that are not immediately present before the senses. The progress of man in all departments of life has been due to the exercise of this power of imagination and thinking—of his creative and reflective mental effort—and it is the function of education to help forward the development of these cognitive abilities. The cognitive abilities are not given in equal measures to all persons, and attempts are made as we saw in Ch. XV to measure these abilities and aptitudes by objective standards. We studied also the different laws and principles that apply in learning, and saw how learning is affected by such factors as interest and fatigue. We dwelt on the importance of acquiring new interests and of attending to not only those things that call forth our spontaneous interest, but even to those things which may not have originally attracted our notice. This brought us to the importance of exercising the will in the development of personality, a topic that leads us on to the study of important factors involved in what may be called the psychology of conduct—which is at least as important in education as the psychology of the learning process.

In the opening chapter (XIX) of this the final section, on *the psychology of conduct*, we saw how personality is developed in the various stages of growth—stages which may roughly be differentiated as infancy, early childhood, later childhood, and adolescence which is the stepping stone to mature manhood and womanhood. We saw how extremely important it is in personal development to harness and regulate the dynamic energy released through emotions and sentiments. Emotional streams take divergent courses and they can serve the best interests of the individual only in so far as they are all subject to some master-sentiment in life, or life-ideal. This brought us to the study of the will and of character, which are operative in all one's performances and achievements—cognative, emotional and conative. Hence the importance of attention being given to it from early childhood, so that one may enjoy sound mental as well as physical health throughout life. The importance of lay-

ing the foundations of sound physical health in childhood has been long recognized, though pratice has not always kept pace with the ideal; but the importance of mental health and of attending to it from the very beginning of the child's life is almost a discovery due to the light thrown on the unconscious by Freud and other psycho-analysts. We therefore hope that what was said on mental health in the previous chapter will be especially pondered over by the reader.

Mental health, physical health, progress in studies, adjustment to the demands of social life—all imply the freedom and spontaneity of the individual. Physical growth is impossible where the free movement of the child's limbs and body are hampered. Even the uterine life of the baby is characterized by activity; and, when the child begins his life as a separate person, his needs and scope for freedom are immensely extended. Similarly intellectual growth is not possible unless the child has the freedom to think, investigate, experiment and generalize for himself. So too, if his emotional life should develop normally, if his wild instinctive urges should be converted and consolidated into stable sentiments and emotion-patterns, he must have the joy and satisfaction of expressing his own feelings in ways appropriate to himself. He cannot grow into a well adjusted member of a social group unless he is free to meet and enter into the life of his friends and playmates. Take thus any aspect of life, and we find development inevitably associated with freedom. The old systems of education stressed the importance of restraining the activities and will of the students. They were not all useless or ineffective systems—but they succeeded in so far as they failed to carry out fully the implications of their ideology. Human life is too vital and dynamic to be entirely cramped and suppressed by even the most authoritarian educational doctrine or practice. If life however cannot be entirely suppressed, it can certainly be hampered. Modern educational theory recognizes this fact, and cheerfully concedes to the child his right to be his natural self and to express himself in ways most appropriate to himself.

Freedom by its very nature can never be unqualified ; for complete freedom implies, negatively, absence of interference from outside ; and, positively, it means a willingness and ability on the part of the person concerned to maintain an internal balance and harmony between his various urges, desires, interests and motives. Complete absence of interference from outside, however, is not possible. There are restrictions placed on every one by nature—rain, storm, heat, cold, physical barriers and distances, there is no end of restrictions on a man's freedom. There are social restrictions too, such as laws and regulations, and the more pervasive and oftentimes more powerful and profound conventions, traditions and customs, which cannot all be set aside or ignored by even the most pronounced social freelance. Again there are restrictions placed on each individual by economic circumstances ; no man can carry out all his schemes of social or aesthetic self-expression without the necessary economic means. What is true of adults in these respects is particularly true of children. Their freedom is still more restricted by the fact of their inexperience and immaturity.

The wise man not only recognizes the existence of these limiting factors, but even regards them as aids in the greater expressiveness of his own personality. A great poem is not a riotous expression of feelings, but is an expression of moods and feelings and attitudes with restraint and dignity and with a sense of internal harmony. The same is true of the grand poem of life when it is an expression of every passing desire and impulse and whim and prejudice, it does not bear the mark of poise and dignity. Obstacles there are—both external and internal—which evidently seem to cramp a man's movements and choices, but a sensible person regards them as circumstances the overcoming of which gives him scope to realize his own creative and dynamic energy. What is inevitable he accepts, but his reaction to it is determined from within. Thus in dealing with nature's forces and agencies, in dealing with the rules and conventions of society, in dealing with economic circumstances, he seems to follow his own pattern of life. Equally purposive and discri-

minating—why, even more—is he in the expression and satisfaction of his own wishes and fancies and impulses : he controls them and regulates them and allows them to be expressed only in so far as they are not incompatible with what he holds dear and important in his best moments. His sense of self-respect, his idea of the best that is expected of him, his discrimination between what is useful or pleasant only for the time being and what is useful or conducive to happiness in the long run—all these help him to exercise discipline. Mere conformity to the rules and regulations of society does not ennoble personality, if the person who conforms does not choose of his own accord to do so. Some schools put up elaborate rules for the conduct of life of its pupils, evidently believing that progress depends on the wisdom and elaboration of commands and prohibitions. Even if children conform to these rules and regulations, it does not mean that they accept with their own will and judgment the principles underlying them. All our effort should be to help children appropriate within themselves those principles of thought and conduct which should be useful to them in real life—within the school and outside it. The best of rules are but external factors ; and these external factors tend to be internal, apart from the effect of individual judgment and reflection, only to the extent that those who uphold them are respected by the young, and to the extent that these laws are honoured in the co-operative life of the young by themselves. Until laws, which are external, are thus interiorised by the individual himself, they do not ennoble or uplift his personality.

Those who are entrusted with the management and administration of institutions for the young cannot be indifferent about external order. For they know that though true discipline is self-discipline, self-discipline itself is made easier where the environment is so regulated as to make the true, the beautiful and the good more winsome, and where whatever that militates against these great ideals is generally disapproved of and discouraged. It means that the external ordering of the environment is desirable and necessary ; and especially so it is where

the social environment is predominently an environment of young people, as in a school. Hence the great importance of what is usually recognized as discipline—the right ordering of the social environment under the leadership of recognized authorities. As a matter of fact most people think only of this social ordering whenever they talk of discipline.

Even in this latter sense of the term discipline, i.e. the creation and maintenance of the conditions that are essential for the orderly progress of the work and the kind of life for which the school exists, there are two phases worth considering (1) positive and (2) negative.

The positive aspect of discipline has reference to whatever is conducive to efficient life within the school by raising its tone and by increasing the devotion and pride of the students towards the school. Common activities and enterprises that create a sense of solidarity and oneness on the part of the many that attend the school are of great use in this respect. Their usefulness is increased when the young folk concerned not only participate in these activities, but help in planning and administering them. This is why go-ahead schools make provision for "self-government" within the school. It is true that self-government cannot be complete in schools the members of which are necessarily handicapped by want of knowledge and experience and maturity of judgment. But those who have tried the experiment with discretion and commonsense as well as with enthusiasm and faith feel that the effort is worth making. Young folk develop an amazing sense of responsibility when they are entrusted with the management of live problems of controlling and regulating their common life within the schoolroom and in the playground. Even smaller children are capable of understanding the importance of maintaining the rules of common life, but the adolescents are able to enter into the spirit of it much better. Regulation of conduct in the playground, order in the classroom, the planning of extra-curricular activities, management of a school-store and its sales, enforcement of penalties for the violation of their own regu-

lations—all these can be and have been successfully attempted by teachers who believe in co-operation as a method of discipline rather than in intimidation, teachers who have patience and hope, and know that goals that are worth striving after cannot be reached in a day. Such a teacher should have courage and audacity to face opposition, fear and suspicion of other teachers, and of even some of his own students. Neither is it assumed that he will never be obliged to exercise his own authority and that he will never be obliged to punish. He may have to meet all these contingencies ; nevertheless he does not forget or set aside his ideal of being a leader and friend of his pupils in a co-operative enterprise rather than a dictator and an enforcer of discipline.

Turning now to the negative aspect of discipline, we find rewards and punishments usually regarded as the stock in trade of the strict disciplinarian. Punishments certainly are—but many disciplinarians do not care much for the giving of rewards, unless we take it that failure to punish is in itself a sufficient reward ! To give a reward for doing a kind deed or for not doing an evil one, or for doing one's lessons, may be a form of bribe ; and bribe-takers do not wish to do much good unless they are paid for it. They do not know the satisfaction of doing good for the sense of right-doing they themselves enjoy, thereby or for the joy they can thus give to others. To condition a good deed with the expectation of a reward is therefore bad psychology—and worse morals. For only that conduct can elevate the character and the intrinsic worth of a person, as we have already observed, which is the natural, voluntary expression of his own choice and judgment. What is done through fear of others, or with the expectation of receiving favours from them, cannot strengthen the moral fibre of the individual concerned. In this respect the frequent use of either punishment or rewards is equally detrimental in the development of personality—but this may be said about the dispensers of rewards as against the punishers, that they believe in recognizing something that is praiseworthy when such a thing

exists. To convert this recognition and appreciation into a system of bribery is wrong, but to appreciate the efforts of those who endeavour to do better in the realms of conduct or intellectual or artistic achievement is certainly to help them forward in their line of progress. It is certainly a good thing that those who care for discipline sometimes take note of the fact that young folk make commendable progress, rather than to be always on the look-out to find fault and to punish.

Punishments form, as things now stand, the most important negative factor in maintaining discipline. What is the theoretical justification for punishing ? First of all, punishment is said to vindicate justice. The offender against natural and moral laws must be punished in order that it may be known that laws are sacred and cannot be violated with impunity. Suffering, according to this *vindicative view* of punishment, is the natural consequence of offences. We admit that nature is relentless in exacting penalties for violating its laws. This does not, however, mean that it is easy for man to establish what is called the discipline of natural consequences. For one thing some of the consequences of violating natural laws are so dire and drastic that it is sometimes hard to believe in a moral order in nature that cares for the individual, as for example when an innocent and lovely child, who climbs a mango tree to pluck fruits, loses his footing and falls down and is killed, or becomes a lifelong cripple. How can a teacher or a parent copy this way of enforcing discipline ? Again, there are those who try to meet offences against rules of discipline by an inevitable series of graded punishments. It is impossible to arrange a thoroughly satisfactory gradation in inflicting pain ; and, even if it were possible, the uniform enforcement of such punishment without reference to the motive or the personal history or the possible effect upon any individual would be grossly unjust. Whatever be the purpose of natural laws, the purpose of rules and regulations in the home and the school is to help forward the healthy development of the young ; and where such a purpose prevails, we cannot think of mechanically vindicating laws for

the sake of vindicating them. If we do, we care more for laws than for the persons for whose benefit the laws are supposed to exist.

Punishments are said to have a *deterrent* purpose. If a boy is caught telling a lie, he must be so punished that other boys may not tell lies in the future. But is it right to punish one boy in order that the morals of others may be improved. Judges sometimes proclaim that they are giving deterrent punishment in some case about to be disposed of by them. What they mean is that they intend giving a punishment which they themselves believe could have been lighter if the particular individual's case alone had to be considered. The school disciplinarian also sometimes announces a similar purpose. But is it right to expect one boy to bear the consequences of the offences of a number of persons—most of whom perhaps have some reasonable grievance or other against the school or the master, a grievance which they ventilate in the form of some offence against discipline ? Again the moral that clever neighbours often draw from the deterrent punishment given to one of their classmates is that the offender should be so skilful that he may not be caught by the authorities. There is more reason in giving *protective punishments*—punishments such as segregating the individual for a while in order that he may not disturb other people in their pursuits. Even in attempting to protect the rights of others, the offending individual's needs and his ultimate good should always be kept in view by the one who punishes.

The chief purpose of punishment should always be the *reform of the offender*. We are not talking of the existence of reformative schools—but of the reform that must be aimed at in every school and in every home of those young people who show by their misdemeanour that they find their own internal harmony and social adjustment a task too difficult for them to achieve. This is the root cause of offences the offender has not attained sufficient self-poise within himself and cannot get on well with his social environment. Too often these two difficulties, i.e. of internal and of social adjustment, occur together;

and the consequent emotional tension leads to an outburst of offence against the generally accepted code of behaviour. Punishments cannot by themselves help any offender to get over this difficulty of ill-adjustment. But punishments may be helpful to show the offender that his activity is disapproved of by others, by those who have his interest at heart and whom perhaps he respects in certain matters, if not in all. If those who administer punishment not only show their disapproval by their punishment but make it a starting point to understand the offender better and to help him more effectively to attain a desirable life-goal, then punishment is of some real value.

Whatever be the ostensible aims of punishment, many teachers and parents actually punish not because they care for the sanctity of laws, nor to help the offenders or their friends into right ways, but because they take disobedience on the part of the young as a challenge to their own authority. "My father's word was law in this time, and so shall be mine," is their attitude. They want to be obeyed, and do not care whether they are right or wrong in what they insist upon. There are many who punish out of sheer peevishness. They are troubled over something, and they cannot bear any noise or self-activity on the part of the child to disturb them further. Many persons punish their helpless little ones for doing something the error or folly of which they are too small or inexperienced to understand. A small child set fire to a grass-field in fun, and the irate parent beat him. The day previous to the writing of these lines the author happened to go to the quarters occupied by the workers of a certain mill. A cycle was kept there. Two children, one of about six months and the other of about three years, from neighbouring houses played with it. The smaller child's finger was hurt with the cycle-chain, and she cried. The mother of the older child came out and oh, the beating she gave her ! What the ignorant mother did for fear that she might be found fault with is being done in the same or a different way—but equally cruelly and foolishly—in numberless homes and educational houses. There is no doubt whatever that punish-

ments are often inflicted upon helpless boys and girls when the latter do not deserve any punishment at all. Even when children are really offenders and may be supposed to have deserved punishments, they are often punished more severely than the occasion justifies ; and very often the kind of punishment given is unsuitable, stupid and cruel.

Offences that are recognized as such may be broadly classified into two groups : (1) moral offences and (2) offences against rules and regulations regarding orderliness, routine and work. Lying, theft, destructiveness and sex-offences come in the first group ; late-coming, irregularity, failure to do work, noisiness, shabbiness and disrespectfulness belong to the second. The offences of the latter group may be easier to deal with, and punishments may show better results with them ; for, what is sought to be rectified here is non-conformity with accepted forms or standards of behaviour. Even this kind of behaviour-difficulties may have their origin within the offender himself and his emotional complexes. This origin of behaviour problems is still more in evidence in offences of the first kind. Tactless, unsympathetic and ignorant punishments in such cases are not only useless, but add to the very troubles which originally caused offences. It is the teacher's duty to find out as much as possible—without trying to psycho-analyse the child, that is the work of specialists, not his—the possible causes of behaviour problems, and to encourage the child to engage himself in those spheres of activities where he is strong.

Even where the teacher is compelled to punish, he should recognize that it is a painful duty that he performs. For a teacher to giggle over the punishment he inflicted is to betray the fact that he is least fitted to inflict it—his punishment may be a form of sadism, and perhaps betrays unsolved conflicts within himself. It is said that Oliver Cromwell went out after the execution of Charles I to the place where his decapitated body lay, and muttered to himself "Cruel necessity!" The same spirit should characterize the teacher who is obliged to punish he should admit to himself with humility that it is a

pity that he is obliged to punish, that there should be occasion for him to punish. For a good teacher is ready to confess that to the extent that he is compelled to resort to punishments, his efforts at truly educating his pupils have failed ; and that if punishment must follow all failure on the part of a person to live up to the standard expected of him he himself deserves to be punished. In other words it is the ideal of every noble teacher to share to some extent the guilt and the shame of his offending disciples. A great World Teacher has been prophetically described :—

> He hath borne our griefs and carried our sorrows ;
> He was wounded for our transgressions,
> He was bruised for our iniquities.
>
> The chastisement of our peace was upon him,
> And with his strips are we healed.

When the teacher works in this spirit, he will not only have a different conception of the place of punishment in discipline, but he will have an entirely new view regarding his own responsibility in helping forward the growth of his pupils' personalities.

In this great task the teacher's religious attitude is of inestimable importance. If he is convinced that he is not only a citizen of this world but is a member of a spiritual universe, one who lives in time but is capable of having personal relations with the Spirit that transcends time and space, his whole outlook is different from that of one whose immediate attention is all centred on the intellectual activity and the order and discipline of his pupils and whose ultimate vision does not extend beyond the achievements of three score years and ten.

Religious experience is common throughout humanity, so much so that Freud who considers it a great illusion refers to it again and again and groups it with what he calls the other universal illusions—art and philosophy. If these are illu-

sions, they are quite extraordinary ones, as they often enable a person to face reality in a much more efficient manner than those without them ! Of the three, the influence of religion is most wide-spread and effective. As Freud himself admits: " Religion is a tremendous force, which exerts its power over the strongest emotions of human beings." *

The fact that some form of religion is found in all grades of society and in all countries has led to the notion that religion is the result of a special instinct. It is better, however to take religion as a product of growth. The religious attitude can be analysed into a number of simpler elements. The first of them is what Rudolf Otto calls the *creature-feeling*.† We are no doubt creative spirits, but the religious attitude emphasizes the idea that we are created, that we are not here by our choice, that we have been made what we are by a power that overwhelms us, by something wholly *beyond ourselves*. It strikes us as full of energy and urgency, as entirely different from ourselves—" wholly other "—and as striking us with a sense of *dread and fear*. At the same time we are *fascinated by it* we cannot get away from this power which manifests itself to us in various ways, leading us on to itself not only as recipients of its blessings but as participants of its very nature and essence. Outside it in a way, we are still within—this is the attitude that almost all religions imply, and the practice of religion consists of our realising this one-ness with the Spirit that we at times are inclined to regard as wholly distinct from us. It is hard to understand, but those who have begun to practise this *at-one-ness* with the World Spirit have in it a world-view, a *weltanschauung* as the Germans call it, in the light of which all things within our own life and in nature are easier to explain.

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*Freud *New Introductory Lectures on Psycho-Analysis*, xxxv.

† Rudolf Otto *The Idea of the Holy.*

Belief is impossible without a certain amount of readiness to believe; this is why religion has its greatest hold on those who have sincerely practised it from childhood. Hence the importance of cultivating a religious attitude even in infancy. In almost all our schools children come from heterogeneous religious groups. The teaching of one religion in preference to all others may not be practicable, and may not always be charitable. But if the teacher is one who believes in God and has an attitude of reverence, he will thereby introduce into the minds of children a steadying influence which is most welcome in view of the baffling perplexities and conflicting tendencies they often feel within themselves. If this should be possible with the help of the teacher, he should be one who has the winsomeness of a noble and loving character made rich by the consciousness of *a presence and purpose higher* than the transitory values of the hour or the day. The earlier the child comes into contact with such a teacher, the more permanent is the impressions left on him by such a teacher's reverence and devotion.

The teacher badly requires all the help that religion can give him. If he is a "conscious" teacher, he feels his burden too heavy for one man to carry alone erring students have to be directed in right ways, idle ones are to be stimulated, the backward and the defective have to be borne with and encouraged, and the bright ones spurred on to still higher achievements. In India especially he is often not able to give his undivided attention to these noble efforts as he is badly paid and is often worried by varied financial obligations. Again in no country can we expect all teachers to be ideal and some of the less respectable ones—with ill-balanced minds and unsolved complexes—make the life of their more sensitive colleagues a hard trial. Faith in a loving World Spirit, a God, Who understands and cares and is able to help, stands them in good stead in these circumstances. This faith in God, as well as the sense of insufficiency out of which this faith leads

one out to renewed hope and courage, has been nobly expressed in parable by the poet-teacher of India who sings:—

I brought out my earthen lamp from my house
and cried, "Come, children, I will light your path".

The night was still dark when I returned,
leaving the road to its silence, crying,
Light me, O Fire! For my earthen lamp
lies broken in the dust!"*

Teachers who live and work in this spirit are never arrogant. Arrogance comes out of a blatant self-assertion, and often bespeaks an unrelieved emotional strain. The ideal teacher, when he is obliged to find fault with others, searches the recesses of his own mind to see whether any hidden complex is influencing his attitude. He repeats in his own words the prayer of an old saint in ancient Palestine who said

Search me, O God, and know my heart;
Try me, and know my thoughts
And see if there be any wicked way in me,
And lead me in the way everlasting.

The religious attitude is, in other words, one of humility, which is an essential qualification in a good educator, whether teacher or parent. "Except ye become as little children ye shall not enter into the kingdom of heaven," said Jesus Christ. A good teacher learns, as I have said elsewhere, not only *for* the child but also *from* the child. "We gain rich and varied experiences while we grow up, but in the process we are apt, unless care is taken, to lose some of the finest things with which we started life, such as the sense of wonder which is the root of all intellectual and spiritual attainments, the assurance that all good things are ours despite artificial barriers and partitions set up by exclusively-minded adults, the unsophisticated faith in the

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*Rabindranath Tagore, *Fruit-Gathering*, xvii.

goodness of all men especially of those who are near us, the optimism that the future has a store of happiness hidden in it, and the artless delight in (lovely) forms and colour." * Instead of these, there will close upon us, unless we have the attitude of life-long learners, what Wordsworth calls the shades of the prison house of customs and habits—heavy as frost, and deep almost as life. ** If thus we live with and learn for and from our little ones there will be a healthy, natural sharing of experiences between them and ourselves ; and they will come to us for understanding and sympathy in their troubles and perplexities. If not, the younger folk will seek for enlightenment and relief elsewhere; and, in some at least of these cases, the cure may turn out to be worse than the disease.

Much wickedness has been perpetrated in the name of religion. It has presumably been on many an occasion the cause of, or a cloak that covered, wars, internecine strife, hatred of neighbours and various other forms of cruelties including the sex-perverted cruelty on one's own self called masochism. This is however due to the abuse of religion and not to its intrinsic nature, which has been of inestimable service to mankind in ennobling its character and in raising its standard of moral values. Religion has taught man to look upon himself as a child of God, and this in its turn has led to the recognition of other persons as one's own brothers and sisters even where so called blood-relationship does not exist. Service of God thus implies service to man. Educationists cannot be indifferent to this spirit of service which religion stresses. We have devoted much attention to the evil of men leading shut-in lives and to the need of their establishing social relationships. Social intercourse however is bound to be inadequate and artificial when it is maintained for one's own advantage. The individual's personality is best developed, he attains to self-

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* Matthew *Message of Psychology to Teachers and Parents* (not yet published), Ch. X.

** Wordsworth *Intimations of Immortality.*

realization in the best sense of the world, when he forgets his ego in ministering to the needs of others. To help boys and girls cultivate this life attitude is one of the greatest efforts of all good educators.

All students are recommended to read at least two of the following references, and those who wish to make a special study of the topic are advised to go through them all :—

Adams	Modern Developments in Educational Practice, Chs. V, VI, XII.
Ballard	The Changing School, III, IV.
M. Obrien Harris	Towards Freedom Chs. 1, III, X, XII.
C. W. Bailey	Happiness in the School, Chs. 1, II.
Bossing	Progressive Methods in Teaching, Ch. VI.
Nunn	Education Its Data and First Principles, Ch. XV.
Simpson. T. H.	Sane Schooling, Ch. III.
Drever	Introduction to Educational Psychology, Chs. VI, XI.
Bagley	School Discipline, Chs. I, VII, X.
Sophie Bryant	Moral and Religious Education, Chs. VII, XII, Sections 1, 4.
Rudolf Otto	The Idea of the Holy, Chs. II-IV.
Horne	Philosophy of Education, Ch. IV, pp. 123-127

QUESTIONS FOR INDIVIDUAL STUDY AND GROUP DISCUSSION

I

Aims In Education

1. How far is it true that the science of education is based upon philosophy? (Bombay, 1928).

2. Discuss how philosophies of life react upon educational ideals. (Bombay, 1932).

3. "Educational problems are at bottom social problems". Discuss this statement. (Manchester, T.D. 1937).

4. Examine critically any three of the following aims of education:— (1) Social efficiency; (2) Culture; (3) Preparation for complete living; (4) Development of moral character; (5) Nature of the spirit. (Bombay, 1930).

5. Give your views upon the respective merits of a "general" and a "vocational" education. (T.D. London, Internal. 1934).

6. Discuss how far it is possible to socialize the pupils as well as to cultivate their individuality at the same time. (Benares, 1937).

7. Discuss the alleged divergence between the ideals of individual development and fitness for social service. What educational consequences follow from your conclusions? (T.D. London, Internal, 1933).

8. How would you reconcile the apparently conflicting aims of education as (1) social adjustment and as (2) self-realization? (Andhra, 1934).

9. Show what you deem to be the value of school education from the standpoint of (*i*) the interests of the community, (*ii*) the interests of a particular pupil; consider whether those interests are divergent or can be reconciled. (T.D. London, Internal. 1934).

10. Education is likely to be more fruitful when it emphasizes preparation for the need of later or adult life. Discuss. (Mysore, 1936).

11. What is meant by culture in education? Choose any one school subject and describe its cultural value. To what extent does manual training impart culture? (Bombay, 1927).

12. What is meant by individuality? On what ground does Nunn regard the development of individuality as the correct aim of education? What is the objection to regard this as an unexceptionable aim?

13. What is meant by personality? Consider the enrichment of personality as the highest goal of education.

14 Individuality and self-expression are generally accepted as principal aims in the theories of education. Do schools foster these aims to the best of their opportunities? If not, ought they to do so? (Manchester, T.D. 1933).

15. What conception of the purpose of education seems to you to be most practically helpful? (Manchester, T.D. 1928).

16. Discuss the reaction of the State to Education so as to bring out the proper scope as well as the limitation of State control in education. (Nagpur, 1938).

II

Psychology And The Teacher

17. The theory of education must base itself wholly on the science of psychology. Examine this statement and bring out clearly its limitations, if any. (Aligarh, 1938).

18. The teacher, concerned as he is with the modification of behaviour, is finding invaluable help in the newer psychology. Discuss. (Andhra, 1936).

19. "Psychology can add little to the teaching of common sense and practical experience." Examine this statement. (T.D. London, External. 1933).

20. Explain how a knowledge of general principles of psychology is useful to the teacher, bringing out what you consider to be the aim of education. (Andhra, 1936).

21. 'The difference between modern and earlier educational practice consists in the fact that now we teach the pupil rather than the subject.' Examine this view-point in the light of your conception of what the teaching process ought to be. (Lahore, 1939).

22. It is said that the new view-points in psychology are more helpful to the educator than the old. Do you agree? Why?

23. Discuss with illustrations the psychological basis of the methods whereby teaching is guided by the learner's interest in the topic. (Nagpur, 1933).

24. Discuss the aim of education from the psychological standpoint. (Mysore, 1931).

25. What is the psychological basis of the modern paidocentric tendency in education? (Bombay, 1934).

26. State the main heads under which applications of psychology to education may be described. Under each head state the point or topic which seems to be important or interesting. (Lahore, 1939).

27. Show how the study of psychology has given you a better insight into the art of education. (Nagpur, 1934).

28. Show how the knowledge of psychology helps in the teaching of reading and writing in schools. (Calcutta, 1936).

29. Explain how the study of the life and writings of some great teacher throws light upon a teacher's duties and possibilities. (Manchester, T.D. 1932).

30. Discuss the bearings of either (*a*) Behavourism, or (*b*) the Gestalt psychology on the practical problems of education. (T.D. London, Internal. 1935).

III

The Human Being As A Living Organism

31. What is meant by the biological standpoint in education? How does it affect the special problems of education? (Andhra, 1937).

32. "Comparatively few educated people have a grasp of biological principles, even those principles which are most directly related to human welfare and right living." Discuss the functions of biological science in education, with special reference to this dictum, and explain how far you consider it does or does not justify specialist courses in botany and zoology. (T.D. London, Internal. 1936).

33. Discuss the significance of the prevalent movement for the inclusion of biology in the curricula of central and secondary schools. (T.D. London, Internal. 1932).

34. Explain briefly the significance of the terms horme and mneme, and discuss the value of these concepts for educational psychology. (T.D. London, Internal. 1936).

35. Discuss the relation between horme and mneme, with special reference to the education of delinquent children. (Bombay, 1929).

36. Bring out the mutual implication of "horme" and "mneme" by showing how both are involved in cultural progress, *e.g.*, in science or history or literature. Derive from your discussion some practical suggestions for the treatment of the same subject in a secondary. school (T.D. London, Internal. 1935).

37. Illustrate the distinction between "conservative" and "creative" activities in the life of a community. What is its bearing upon the activities of a school? (T.D. London, Internal. 1936).

38. The aim of education is sometimes expounded from the biological standpoint as that of adaptation to environment. How far does this aim correspond with the purposes which the teacher sets before himself? (Manchester, T.D. 1921).

39. "Human behaviour is not mechanical but purposive." Explain the statement, and indicate its educational implications. (Bombay, 1935).

40. "Human behaviour is not different in origin or function from animal behaviour". Explain and illustrate the above statement. (Bombay, 1930).

41. How would you distinguish between 'purposive' and 'purposeful' acts? What means would you employ to develop purpose in school life? (Bombay, 1925).

42. "Whatever is laudable in man is learned; it is the product of social heritage or of intelligent adjustment". How is this view reconcilable with Nunn's statement that life as a whole may be regarded as the unrolling of an instinct and that it is a continuous, unified process of self-assertion? (Aligarh, 1938).

IV

Mind In Relation To The Body

43. Discuss the physical basis of mental life, and illustrate the influence of physical factors in the mental life of children undergoing education. (Calcutta, 1936)

44. "A knowledge of human psychology is of the greatest importance to the educational psychologist." Support this. (T. D. London, Internal, 1936)

45. Give a short description of the brain and the nervous system. (Bombay, 1925)

46. With the help of simple diagrams explain the structure and functions of the nervous system. (Madras, 1936)

47. Explain in simple terms the mechanism of reaction. In what sense could education be described as the creation and modification of bonds between stimuli and responses? (Mysore).

48. Explain with the aid of diagrams the mechanism of the reflex of the third or highest level. Give an illustration of its action. (Bombay, 1928)

49. Mention the chief endocrine glands. How do they affect one's mental life?

50. Consider ways in which our bodies and our minds react upon each other. What light is thus thrown upon questions of school hygiene? (Manchester, T. D. 1928)

51. What are the common causes and effects of swollen tonsils and adenoids? What hygienic measures would you encourage to prevent such troubles arising? (T. D. London, Internal 1932)

52. Briefly discuss the words in italics in the following passage:—

"The *behaviourists* have given us more assertion than proof. We know very little about the nature of the change which propagates itself along the *neurones*, still less about the nature of the *inhibitions* in the synapses. The doctrine of the localization of the functions in the *central cortex*, is also rockingly insecure. After all we are justified in refusing to believe that life is nothing more than a succession of *reflexes*, a number of *responses* to *stimuli*." (Bombay, 1925)

V

Special Tendencies Instincts

53. What do you understand by instincts? What part do instincts play in the development of character? (Bombay, 1925)

54. How do instincts differ from reflexes? Discuss the possible ways of dealing with instincts in children. (Bombay, 1936)

55. Discuss the relation of instinct to purposive action and mental growth. Illustrate with reference to child life. (Bombay, 1929)

56. Bring out the nature of an instinct by comparing it with a habit. Describe the nature of pugnacity, self-assertion and constructiveness; and show what use you would make, as a teacher, of these instincts in the education of the young. (Andhra, 1935)

57. Give a brief acoount of the impulses of pugnacity, escape and appeal from the point of view of character training. (Mysore, 1935)

58. Mention some of the chief instincts of childhood, and taking one of them, show how it can be utilized by the teacher. (State the age of the child in your example.) (T. D. London, External. 1934)

59. Describe the normal manifestation of the impulses of Herd, Parental instinct, and Laughter. Indicate how these impulses should be trained so as to develop the traits of sociability, sympathy, and honour. (Mysore, 1937)

60. What is the relation between instinct and emotion? Explain and illustrate the basic character of instincts in the educative process. (Andhra, 1937)

61. Distinguish clearly between the instinctive and the intelligent elements in behaviour. What is the relation of instinct to intelligence?

62. Discuss the psychological basis of the principle: "Instincts should not be repressed but sublimated". (Benares, 1936)

63. What part, if any, ought repression to play in education? (Manchester, T. D. 1927)

64. Are instincts educable? Decribe how you will make use of the instinct of curiosity in the education of the young. (Madras, 1934)

65. Describe the essential features of the instinct of constructiveness. How could scope be given for it in the school? What effect does it have on the fully grown mind? (Madras, 1936)

66. "Instinct is the raw material of character. Discuss. Show how knowledge of the working of the instinct helps us in dealing with children, and if possible give illustrations from what you have observed. (Madras. 1936)

67. What do you understand by the sublimation of instincts? Does moral education consist mainly in the sublimation of instincts? (Nagpur, 1935)

68. Prepare a list of instincts like the list drawn by James, Thorndike or McDougall, and a list of characteristic activities either of Boy Scouts (or Bratacharies) or the Girl Guides, and place against each of these activities the numbers of instinctive activities that you think are appealed to or are advantageously directed by the activity. (Calcutta, 1937)

69. What do you understand by 'instincts harden into habits'? What are the different methods by which instinctive and emotional acts can be changed or modified? Which of these in your opinion work best? (Calcutta, 1938)

70. "The commoner delinquencies committed by the young, in almost every case, spring from those aboriginal modes of response which constitute the universal human instincts." (Cyril Burt.) Discuss this. (Manchester, T. D. 1923).

VI

General Tendencies: Sympathy, Suggestion And Imitation

71. What is sympathy? How is it important that teachers and parents should lead emotionally well-balanced lives?

72. Write a short note on the rôle of 'Sympathy' in the social and moral development of the child. (Aligarh, 1938)

73. Suggest ways of cultivating sympathy and social emotions of children with a view to social service. How may children best be trained to love the right and hate the wrong? (Calcutta, 1938)

74. What is suggestion? Discuss what place should be assigned to it in the education of a child. (Bombay, 1934)

75. Estimate the value of the various kinds of suggestion as means of (*a*) mental and (*b*) moral instruction. (Calcutta, 1938)

76. State the conditions under which direct and indirect suggestion operates, and consider their relative merits as factors in moral education. (Aligarh, 1937)

77. Discuss the statement "When an idea has been suggested the unconscious finds means for its realization," with reference to education. (Bombay, 1929)

78. Describe the factors favourable to the ready acceptance of suggestion, and indicate the place you would give to suggestion in education. (Andhra, 1934)

79. Mention six conditions favourable for the operation of suggestion in the order of their effectiveness. (Mysore, 1932)

80. What part does imitation play in education? How is it related to suggestion? (Bombay, 1927)

81. "Imitation is but the first stage in the creation of individuality." Develop this principle in regard to the responsibility and opportunity of the class-teacher. (London, T. D. External 1935)

82. Show how children's [tendency] of imitation may be used or abused in the teaching of handwork. (Madras, 1936)

83. What part does imitation play in formal and informal education? (Bombay, 1935)

84. Distinguish between imitation and suggestion. Indicate the use and abuse of suggestion in school. (Benares, 1937)

85. What right has a teacher to try to guide and control the thinking and feeling of his pupils? (Manchester, T. D. 1931)

86. Read the following statements and mark them as true, or false or doubtful:—(1) Relaxation reduces suggestibility; (2) Indifference increases suggestibility; (3) Emotional rapport favours suggestion; (4) Music retards suggestion. (Mysore, 1931)

VII

General Tendencies: Play, Rhythm and Ritual

87. Discuss the chief theories of play, and state how you would use the play impulse in the service of education. (Andhra, 1934)

88. What is the play-way in education? Discuss some play-way devices in the teaching of your favourite subject. (Bombay, 1926).

89. Is a person who declares that he is happier in his work than in any kind of play to be envied or pitied? Justify your answer in the light of the psychological theory of work and play. (Aligarh, 1938)

90. Sketch briefly the psychological principles upon which Nursery School practice is based. (Mysore, 1933)

91. "Games should never be used to point a moral or teach a lesson; play has a value as an end in itself, which is lost if it is used as a means." Criticize this view. (Madras, 1936)

92. Distinguish between work and play, and discuss the question whether all work can be turned into play. (Lahore, 1939).

93. "The child's enjoyment may be gauged by the intensity with which he concentrates his attention." Discuss this with reference to the place of play in early education. (Madras, 1936)

94. What is the value of organized team-games as an instrument for the training of character? Explain the type of organization you consider best suited for this purpose, confining your answer to one game and to one type of school. (Madras, 1936)

95. Explain what is meant by Routine Tendency. What school practices have their justification in this tendency? (Bombay, 1935)

96. "The founder of the Boy-Scout movement was a very profound psychologist." Illustrate this remark. (Nagpur, 1930)

97. What effects would dramatization have in learning? How has the 'Play Way' method dealt with this problem? (Calcutta, 1938)

98. What views have been held about the significance of the 'routine tendency' in young children? Discuss their bearing upon education during the early years. (T. D. London, Internal, 1934)

99. "Ritual, properly employed, should have an important function in school life," Explain this function. (Manchester, T. D. 1929)

100. What is the educational value of acting? (Manchester, T. D. 1935)

101. Consider the value of school games, with special reference to (*a*) the boy or girl who dislikes games and (*b*) the boy or girl whose interest in games is excessive. (Manchester, T. D. 1930)

102. Estimate the value to the children of school ceremonies. (London, T. D. External. 1936)

VIII

The Rôle Of The Unconscious

103. What do you understand by the term unconscious? In what ways can the teacher benefit by the technique of psycho-analysis? (Mysore, 1931)

104. What is psycho-analysis? What light does it throw on the problem of the difficult child? (Bombay, 1935).

105. "In actual class-room work, the teacher is often concerned mainly with the subconsciousness of his pupils." Examine this statement and point out the applications of psycho-analysis to the problems of teaching and of general upbringing. (Mysore, 1935).

106. Give an account of psycho-analysis so as to explain each of the following terms:—(*a*) Conflict; (*b*) The pleasure principle; (*c*) Repression; (*d*) Transference. (Bombay, 1927)

107. Discuss any two of the following behaviour mechanisms:—(i) regression; (ii) repression; (iii) rationalization; (iv) projection; (v) compensation. (T. D. London, Internal. 1935)

108. Of what use are children's dreams to the educator? (Bombay, 1935)

109. 'Discuss the bearings of the psychology of the unconscious on the problems of the classroom. (Nagpur, 1937)

110. How far is a knowledge of psycho-analytic theory helpful to the teacher in meeting difficult situations in the classroom? Take any concrete situation and illustrate your answer. (Aligarh, 1937)

111. As an educationist how would you overcome the evil of repression? (Bombay, 1934)

112. What is the importance of the concept of "Conflict" in the theory of mental development? What are the causes of "Conflicts" in the mental life of school-children and how can they be resolved? (Aligarh, 1938)

113. What elements in the psychology of Sigmund Freud seem to you to throw valuable lights upon educational problems? (T. D. London, Internal. 1935)

114. Read the following statements and mark them as true, false or doubtful :—(1) The unconscious mind is a contradiction in terms. (2) We can easily detect complexes in others. (3) Our own complexes easily escape our notice. (4) Kissing children on the lips is an unhealthy practice. (Mysore, 1931).

115. "It is impossible to understand even the normal child without the knowledge of the working of the unconscious mind." Discuss this statement. (T. D. London, Internal. 1935)

116. What light has the "unconscious mind" thrown upon the origin of children's moral and intellectual difficulties? (T. D. London, Internal. 1932)

117. What is meant by *re-education?* What part can a teacher play in the re-education of problem-children?

118. What influence is exerted on the conscious activities of man by his unconscious or sub-conscious mind? How does modern education make use of this influence? (Nagpur, 1933)

IX

Membership Of The Group

119. What are the psychological characteristics of a well organised social group? What would you do to secure social cohesion in the school? (Benares, 1935)

120. In what respect does a group differ from a mere crowd? How would you provide group consciousness in your school without sacrificing the claims of individuality? (Andhra, 1937)

121. In what ways is the 'group mind' formed? How is the psychology of the group mind useful [to the] teacher? (Madras, 1936).

122. Discuss the aim of education as embodied in the following, indicating clearly the influence exerted by that aim on the methods of work in modern schools:—

> "Under proper conditions the school becomes itself a form of social life associated with modes of experience beyond school walls." (Dewey) (Benares, 1936)

123. Describe the subject-matter of social psychology and point out those problems and results thereof which are of special significance to education. (Lahore, 1939).

124. How will you fulfil the principle of individual growth in a school, which is an organ of society? (Bombay, 1928)

125. Discuss the educational ends to which the "gang" and the "team" spirit may be directed by the teacher. (T. D. London, External. 1934)

126. What is implied in the conception of a school as a society? What are the responsibilities of a teacher in such a society? (Bombay, 1927)

127. What essential psychological principles must be observed if good discipline is to be maintained in a class? (Nagpur, 1930)

128. Discuss the instincts of self-assertion and self-abasement and their significance in the life of the individual. (T. D. London, Internal. 1935)

129. "Every good school has a personality of its own. Discuss this statement in the light of your own experience. (Manchester, T. D. 1934)

130. Show how the character of the pupil could be built up by developing the tone, esprit de corps, and tradition of the school. (Madras, 1934)

131. Bring out the implications of the principle that the routine tendency should be allowed to act in school, as in the wider social community, like a fly wheel.

What is its relation to freedom and creation? (T. D. London, Internal, 1935)

132. "The tone of a school is a most potent influence for good or for evil. What measures would you adopt to develop a healthy tone in your school? (Bombay, 1937)

133. Give an account of the theory and practice of "school celebrations". (T. D. London, Internal. 1933)

X

Heredity and Individual Differences.

134. What is the biological standpoint in education? How does it affect educational practice? (Bombay, 1925)

135. "Father and son ought to be thought of as half-brothers by different mothers." What is the theory of heredity implied in this statement? What are its bearings on Educational Psychology?

136. How may the transmission of hereditary characteristics be explained biologically? Discuss how far such qualities may be modified by environment. (T. D. London, Internal. 1932)

137. "It could not be otherwise; he is dull, because both his parents are dull." Discuss the statement.

138. Has heredity any effect (1) on learning capacity, (2) on social behaviour? Refer to some important researches made in this direction. Cite illustrative instances from your own observation.

139. Read the following statements and mark them as true, or false, or doubtful:

(1) Mental traits are inheritable to the same extent as physical traits.

(2) For purposes of education, heredity is more important than environment.

(3) Language is the chief medium of biological heredity.

(4) Heredity is a mysterious force which moulds the offspring in the likeness of the parent.

(5) A clear-cut distinction between the innate and the acquired is always possible.

(6) Heredity is the sum total of traits potentially present in the fertilised ovum. (Mysore, 1931)

140. State what you know of the physical basis of inherited characteristics. (T. D. London, Internal. 1934)

141. "If acquired characteristics are not inherited, it is wasteful to spend much money on education." Do you agree with this view? Why?

142. Do children inherit mathematical ability or musical talent? Do you know of instances in which stone-deaf children became musical as the result of careful and persistent instruction? What is the role of heredity in the matter of special abilities? (Calcutta, 1937).

143. Discuss the evidence for and against the inheritance of mental characteristics. (T. D. London, External. 1936)

144. Discuss briefly the relative importance of "Heredity and Environment" in the development of the child, and show how a knowledge of the subject is necessary for efficient teaching in schools and proper organisation of education in a country. (Benares, 1938)

145. Compare and contrast biological heredity and social heredity, and indicate clearly the contribution made by each towards the equipment of the individual. (Andhra, 1935).

146. "A knowledge of the laws of heredity is of the greatest importance to the educational psychologist." Discuss the statement. (T. D. London, Internal. 1933)

147. What is the significance of the study of twins by psychologists? What part does social heredity play in the make-up of a child? (Calcutta, 1936)

XI

Environmental Conditions and Individuality

148. How far is it desirable to prepare the environment of the growing child? What factors should determine the 'prepared life'? (Madras, 1938)

149. "Give us the young and we shall create a new heaven and a new earth in a single generation." Discuss the theory of education implied in the statement. (Bombay, 1929)

150. Read the following statements and mark them as true, or false or doubtful:—

(1) Idiots can never profit, however favourable the environment. (2) The later the environmental influence the more potent they are likely to be. (3) Environment determines to what extent

the hereditary potentialities shall be developed. (4) Genius will come to the forefront in spite of unfavourable circumstances. (Mysore, 1931).

151. "Children are born with a biological heritage; they are born into a social heritage." Discuss the statement with special reference to the upbringing of children between the ages of four and eight. (Calcutta, 1937)

152. "Whatever is laudable in man is learned; it is the product of social heritage or of intelligent adjustment." How is this view reconcilable with Nunn's statement that life as a whole may be regarded as the unrolling of an instinct and that it is a continuous, unified process of self-assertion? (Aligarh, 1938)

153. How does the Cinema help education? Point out and discuss its possible evil effects on the young.

154. There are a number of institutions that are not usually recognized as educational, which all the same help in the education of young citizens. Mention some of these institutions and discuss their importance in education.

155. What are extra-curricular activities? How can they promote a civic sense in school-children.

156. "The proper aim of education is positive, to encourage free activity, not negative, to confine or to repress." Interpret and discuss this statement. (Bombay, 1928)

157. The process of teaching a child to adjust himself to society is the fundamental work of education. How far can this [statement] be accepted if development of individuality is to be regarded as the supreme educational end? (Bombay, 1933)

158. "The value of the formulated wealth of knowledge that makes up the course of study is that it may enable the educator to determine the environment of the child, and thus by indirection to direct." (DEWEY). Do you accept Dewey's view as regards the functions of the teacher and of the curriculum? Give reasons for your answer. (Benares, 1937).

159. Compare the value of environment with the nature of the child in building character. Which in your opinion is the more powerful influence? (Nagpur, 1934)

160. How far is a child's mental development determined by his environment (including his opportunities for schooling) and how far by innate tendencies? In what respects must the teacher take these two influences into account? (T. D. London, External. 1934)

161. What is the proper function of a school? Can no other agency, the home or library for instance, take its place in the education of the young? (Andhra, 1938)

162. What should be the aim of school discipline? How far do schools you know achieve this aim? If they fall short of it, what are the probable reasons? (Manchester, T. D., 1929).

163. Write an essay on Relation between School and Home. (Calcutta, 1938)

164. Discuss: Schools should not be places where narrow rigid courses are given in isolation of the surroundings of the community, but should be local points for developing all life processes." Dr. Zilliacus. Bombay, 1939).

XII

THE BASIS OF INTELLIGENT ACTIVITY SENSE PERCEPTION

165. How far is sense-training a valid educational objective? Examine briefly some of the well-known methods of infant education in the light of your answer. (Aligarh, 1936)

166. Explain clearly the meaning of the word 'perception'. Discuss the importance of clear percepts in class teaching and illustrate your answer with reference to any subject that you have taught. (Bombay, 1927)

167. In what way and to what extent are perceptions influenced by previous experiences? (Bombay, 1928)

168. Explain the place of apperception in education. How may apperception be effectively directed in the class lesson? (Madras.)

169. Distinguish between perception and conception, bringing out clearly that both are modes of cognition. What are the essential steps of a thought-process? (Benares, 1936).

170. "Perception may be spatial, temporal or qualitative. Explain this statement and its application to education. (Bombay, 1929)

171. Explain the meaning and importance of observation. In what ways can observation be improved? (T. D. London, External. 1933)

172. What do you understand by 'sense-training'? In what ways is it possible to develop sense-perception either in the infant schools or with children who have passed beyond the infant stage? (Madras, 1935)

173. Discuss the importance of sense perception in an educational programme. Distinguish between perception and observation. What are the advantages of activity by pupils as compared with elaborate description by a class teacher? (Calcutta, 1937)

174. Show that perception, conception and judgment are but different stages of the same fundamental process. (Nagpur, 1931)

175. How would you assess the value of a child's testimony with regard to something he has witnessed? (T. D. London, Internal. 1933)

176. Estimate the educational value of "scouting" or "guiding". (T. D. London, Internal. 1935)

177. "The starting point of educational process must be the 'sensori-motor' reaction" (Nunn). Explain the foregoing statement with illustrations and state from your own experience how far this important educational maxim has been given effect to in your school. (Nagpur, 1936)

178. What is the value of school excursions from the stand-point of sense-perception? Give examples from any in which you took part either as a pupil or as a teacher. Make practical suggestions to make such excursions more useful than they usually are.

XIII

IMAGINATION AND DAYDREAMS

179. What is imagination? What part does it play in the education of youth? (Bombay, 1930)

180. What is the relation between imagination and imagery? How is imagination related to reasoning? (Aligarh, 1937)

181. Discuss the subject of mental imagery, showing in what respects the imagery of the child may differ from that of the adult. (London)

182. How far should the teacher endeavour to take into account individual differences in mental imagery? (T. D. London, Internal. 1932)

183. Explain the difference between memory and imagination. Estimate their relative importance in the education of children? (Bombay, 1932)

184. Distinguish imagination from perception and describe the main types of creative imagination, indicating their importance in the development of life. (Andhra, 1937)

185. "Images are an essential part of imagination, and no one can say where mere imagery ends and imagination begins." (STURT & OAKDEN) Discuss this statement. (Bombay, 1929)

186. Distinguish between reproductive and constructive imagination and discuss the importance of each in education. (Bombay, 1928)

187. Discuss the psychology of imaginative thinking. Relate your discussion to one of the school subjects. (T. D. London, External. 1936)

188. Discuss the place of make-believe in the development of a child. (Bombay, 1934)

189. Distinguish between phantasy and imagination. What are the different forms of imagination and what is the educational significance of each? (Lahore, 1939).

190. How does imagination exist in children? What is meant by training the imagination? (Andhra, 1936)

191. Should education develop 'the fanciful imagination'? Discuss with relation to the place of fairy stories in the early education of children. (Madras, 1936)

192. Can the school help the development of any particular faculty in a child? If so, indicate how a child's imagination can be stimulated and developed in the school. If not, give reasons for your answer.

193. Indicate how the teaching of various school subjects may be made to gain in interest if appeal is made to the imaginative activity of the pupil. Give illustrations in support of your answer. (Nagpur, 1936)

194. Discuss the value of imagination in education, giving illustrations from work done with (*a*) young pupils, and (*b*) pupils aged about 15. (Nagpur, 1933)

195. Discuss the use and abuse of imagination in the education of the pre-adolescent child. (Nagpur, 1930)

196. Discuss the different ways of developing the æsthetic side of education. (Bombay, 1934)

XIV

REFLECTIVE THINKING

197. What is meant by thinking? How do we train the child to think? What is the psychological relation between thought and language? (Andhra, 1936)

198. What are the various steps in a complete act of thought? What are the causes of poor thinking? How can children be trained to think efficiently? (Nagpur, 1937)

199. Show psychologically how practical work helps thinking? (Bombay, 1934)

200. Analyse reasoning. How would you try to develop reasoning in children? (Benares, 1938)

201. What processes are used in reasoning? How far is the reasoning of children like or unlike that of adults? (Manchester, T. D. 1932)

202. What are the features of reflective thought? Consider the usual shortcomings of children in thinking and show how habits of logical thinking can be developed. (Aligarh, 1938)

203. Discuss the bearings of Spearman's Noegenetic Principles on the psychology of reflective thinking. Illustrate your answer by referring to the thinking of children. (T. D. London, Internal. 1935)

204. Illustrate by reference to a concrete case the mental operations involved in an act of sound judgment in your pupils in the classroom. (Nagpur, 1936)

205. Describe the relation between language and thought and the significance of this relation for teaching. (Lahore, 1939).

206. How do concepts arise in the mind? What is the significance of concepts in education? How could the teacher help the child in forming concepts? (Madras, 1935)

207. "Mind uses at all its levels the twin methods of analysis and synthesis." Consider this statement in connection with any problems of teaching or learning upon which it may throw light. (T. D. London, Internal. 1934)

208. Discuss briefly the value of illustrations in teaching. Give some specific examples from your experience. (Calcutta, 1937)

209. State Spearman's Noegenetic Principles and give illustrations of their application from more than one school subject or more than one activity of life. (T. D. London, Internal. 1936)

210. Write a short essay on the use and abuse of illustrative aids. (Bombay, 1939)

211. "All which the school can or need do for pupils, so far as their minds are concerned, is to develop their ability to think". Comment on this statement, and indicate briefly how ability to think can best be developed. (Manchester, T. D. 1934)

XV

Variations In Natural Abilities

212. What do you understand by intelligence? Describe any two types of tests devised for its measurement, indicating their value and noting their limitations, if any. (Andhra, 1938)

213. How far is the evidence in favour of the innateness of intelligence conclusive? (Mysore, 1931)

214. "Oh, but surely one man has a poet's imagination, another a soldier's pugnacity and a third the reasoning of a mathematician". "No!" replied Johnson. "It is only that one man has more mind than another".

Discuss this passage in the light of the modern conception of intelligence. (T. D. London, Internal. 1935)

215. What is the view of modern psychology about individual differences? How far is modern education trying to deal with this problem? (Nagpur, 1938)

216. It has been suggested that standardised tests of intelligence and of scholastic attainments should be given periodically in every school. Discuss the following propositions :—

(I) That a test of intelligence is unnecessary, since the child's total mark from a group of attainment tests gives a measure of his all-round ability.

(II) That, if an intelligence test is used, there is no need to include any questions in the attainment tests that definitely call for intelligence. (T. D. London, Internal. 1935)

217. What grounds are there for believing that education cannot increase intelligence? What consequences for teachers are involved in this belief? (Manchester, T. D. 1929)

218. "There is little ground for the belief that intellect secures an all-round training from the specific training of any part of it." (SANDIFORD). Discuss this statement. (Bombay, 1927)

219. Briefly discuss the various theories on the nature of intelligence. Say definitely which one carries greater conviction with you. (Benares, 1936)

220. How far and by what means can the ability which is natural as distinguished from the effects of learning be discovered?

How far should this ability be relied upon as a basis for school classification? (Nagpur, 1938)

221. Distinguish between mentally defective and normal children. Keeping in view the conditions of this country what measures would you suggest for the education of the mentally defective children? (Benares, 1935)

222. Write a short essay on "General Intelligence Tests" under the following heads:—

(1) The possibility of estimating intelligence by psychological tests.

(2) Comparison of mental tests with examinations.

(3) Some possible sources of weakness in these tests.

(4) Examples of the application of mental tests. (Nagpur, 1936)

223. Discuss how your knowledge of the extent and range of individual differences in intelligence would influence your class organisation and your teaching. (T. D. London, External. 1934)

224. Write notes on:—(i) Mental age; (ii) Achievement Tests; (iii) Vocational Guidance; (iv) Co-efficient Correlations; (v) Factor theories of intelligence.

225. Can you guarantee that a man of superior I. Q. will always be more successful in his work, than one of a comparatively lower I. Q.? Why?

226. Discuss the relation between educational attainment and general intelligence, and explain why educational attainment is at times far short of expectations based on intelligence-test results. (Aligarh, 1937)

227. Name two or three special abilities that seem to have little relation to general intelligence. For what types of work can the higher grade of feeble-minded individual be trained? (Calcutta, 1937)

228. Trace the progress of mental testing in India.

229. What is the structure of the Binet Scale of Intelligence (or any one of its revisions)? How is it scored, and how may its results be interpreted? To what extent may the Intelligence Quotient (Mental Ratio) be regarded as constant? (T. D. London, External. 1934)

XVI

Learning: Some General Principles

230. What are the main characteristics of learning? Explain and illustrate the laws of learning. (Calcutta, 1937)

231. In what respects and for what reasons is human learning superior to animal learning? (Andhra, 1938)

232. State Thorndike's laws of learning and the general principles of teaching that you would deduce from them. (Benares, 1937)

233. Estimate the importance of maturation in learning. What is its bearing on the problem of learning in the school?

234. Give a comparative estimate of the *Trial and Error*, and *Insight*, theories of learning. (Mysore, 1934)

235. Mention the factors involved in the learning of a skilled action like telegraphy or typewriting and explain the phenomenon of Platea-stages in learning. (Andhra, 1935).

236. "In learning we must allow time for consolidation. Discuss and illustrate. (Bombay, 1935)

237. Discuss the parts played by mechanical association and the apprehension of relations in the processes of learning. (T. D. London, Internal. 1934)

238. Discuss the bearing of the Gestalt psychology on the psychology of education. (T. D. London, Internal. 1933)

239. What is meant by the personality of a teacher? How does it help school work? (Bombay, 1927)

240. What is an "inductive" method of teaching? Show by illustrations how and to what extent such a method can be used in any chosen subject at a stated age. (T. D. London, External. 1934)

241. "Efficient teaching may be a positive obstacle to efficient learning." Discuss this. (Manchester—T. D. 1930)

242. Discuss psychologically the maxim "No impression without expression", and show how you would put it into force in your classwork. (T. D. London, External, 1934)

243. Apply the laws of learning to the teaching of reading or writing in the primary stage.

244. State the psychological considerations to be borne in mind in the teaching of English in Indian students. (Mysore, 1931)

245. "The core of the learning process is not habit, but intelligence." Explain and illustrate this statement by reference to actual situations in teaching. What functions would you assign to habit in the teaching process as a whole? (T. D. London, Internal. 1936)

246. What is meant by concomitant learning? Give examples from your own observation. How is concomitant learning important in (1) appreciation of poetry, (2) character training?

247. Explain, the dictum "practice makes perfect". Point out, with examples, some of its limitations.

XVII

How To Make Learning Efficient: Memory, Habit And Transfer Of Training

248. Discuss the part played by reception, retention, and reproduction in memory. (Bombay, 1927)

249. What is the relation between association and memory? Give an accoount of some experiments on memory that have bearing on methods of teaching. (Benares, H. U. 1937)

250. Discuss the nature of the laws of association, and indicate their value in the learning process. (Calcutta, 1938)

251. Distinguish between 'habit' memory and pure memory. On what respects is the distinction helpful to the teacher? (Nagpur, 1932)

252. Can the story of a habit be told completely in neurological terms? What is the teacher's responsibility in the matter of the formation of habits? (Lahore, 1939).

253. What do you understand by a "conditioned reflex"? What is its significance in psychology? (T. D. London, Internal. 1933)

254. (a) A name or a fact cannot be remembered at the time, but later on it can be recalled without effort. (b) In spite of being repeatedly reminded of a certain name, a person fails to remember it when required to do so. Discuss the psychological laws involved. (Bombay, 1927)

255. Analyse the process of memory and point out in what way, if any, and how far each of the factors involved is capable of improvement. (Aligarh, 1937)

256. If pupils complain of lack of memory, could the teacher help to remedy it? How could a lesson be taught to facilitate recall? (Madras, 1937)

257. Suppose a teacher does not remember names and faces readily, what suggestions would you offer him to make his memory more serviceable in the respect? (Nagpur, 1937)

258. "I am very sorry. I forgot." Distinguish various causes which may have led the boy to forget. How would you propose to deal with them? (Manchester, T. D. 1927)

259. What are some significant features of curves of forgetting? What practical conclusion do you draw? (T. D. London, External. 1933)

260. Describe the various methods of memorising, and the points of advantage and disadvantage of each. (Lahore, 1939).

261. State the result of experiments relating to the following problems in learning :—(i) Part *vs.* Whole learning. (ii) Massing *vs.* Distribution of work. (iii) Reading *vs.* Recalling method. (Mysore, 1935).

262. "It does not matter much what we teach in school so long as it is difficult enough" Discuss. (Bombay, 1939)

263. How have the problems of Formal Training been investigated? What are the main conclusions from recent investigations of the subject? (T. D. London, Internal. 1934)

264. Consider the question whether the study of a particular subject can have a general effect upon the mind. If it has no such effect, in what way may it be said to "train" the mind? (T. D. London, Internal. 1936)

265. Mention at least three essential conditions which favour transfer of training in the order of their effectiveness. (Mysore, 1932)

266. Criticise the statement that we teach boys mathematics in order to make them accurate. (T. D. London, External. 1933)

267. Various "mind-training" institutes claim that they can train the memory. Examine this claim in the light of your experience as a teacher, and of your study of psychology. (T. D. London, External. 1936)

268. Write notes on: (*a*) Faculty psychology; (*b*) Incubation period in learning; (*c*) Meaning of insight according to Gestalt psychology; (*d*) Plateau in practice.

XVIII

Attention, Interest And Fatigue

269. Distinguish clearly between what are called the "native interests" of children and their "acquired interests." Show how the former may be utilised in developing the latter. Give illustrations in support of your answer. (Nagpur, 1936)

270. What is the relation of interest to attention? Discuss the criticism that the modern doctrine of interest leads to soft pedagogies. (Benares, 1935)

271. Is it possible to have attention without interest? Discuss the main factors involved in giving attention. How would you help your pupils to acquire an interest in uninteresting things? (Calcutta, 1938)

272. Show in what way instincts play a part in interest and attention. (Bombay, 1927)

273. "The mind does not take what does not interest it. Discuss with reference to the duller elements of school learning. (Manchester, T. D. 1929)

274. Read the following statements and mark them as true, false or doubtful:—

(1) Attention may be defined as clearness of cognition.

(2) Interest is another name for attention.

(3) Training in enforced attention is the best preparation for adult life.

(4) Sustained focal attention requires a constant development of the mental object.

(5) Voluntary attention cannot be indefinitely sustained.

(6) Restlessness and laughter are often symptoms of fatigue.

(7) Fatigue never expresses itself in inhibition.

(8) Excessive or monotonous work reduces fatigue.

(9) Rhythmic work increases fatigue. (Mysore, 1931)

275. Describe the nature of and the factors involved in attention and explain how the phenomenon of fatigue is related to it. (Andhra, 1936)

276. "There are ninety-nine right ways of teaching, and one wrong way—the dull way." Examine this dictum. (Manchester, T. D. 1932)

277. You are teaching your favourite subject to a class of twenty-five boys or girls, of which the average age is fourteen. It is a sultry afternoon and the digestion of lunch is not complete. By what would you stimulate attention? (Madras, 1936)

278. Distinguish between spontaneous and volitional attention and consider their place in the educative process. (Aligarh, 1938)

279. To what causes would you attribute a child's inattention to lesson in Class I? How would you prevent the same? (Madras, 1937).

280. Discuss the part that should be played by *Interest* and *Effort* in learning and teaching. (T. D. London, External. 1934)

281. Distinguish fatigue from boredom. What would you do to avoid boredom in the class? (Calcutta, 1938)

282. What is the nature of fatigue? Describe the methods and results of experiments on fatigue. How would you prevent school fatigue? (Mysore, 1935)

283. Fatigue may be muscular or mental. Discuss what steps you would take to remedy fatigue? (Madras, 1935)

284. Explain the relation between work and drudgery. Is work done under compulsion necessarily badly done? (Bombay, 1939)

XIX

STATE OF GROWTH

285. Trace the development of the social traits in children during infancy, childhood, and the pre-adolescent period. Give concrete examples from experience. (Madras, 1936)

286. Trace the growth of interests up to adolescence and show the educational bearing of the subject. (Benares, 1938)

287. Analyse the concept of 'Self'. Trace the growth of the self in any individual whom you know or about whom you have read. (Bombay, 1929)

288. The years between two and five are often described as peculiarly critical from the point of view of future development. Upon what grounds can this claim be justified? (Manchester, T. D. 1935)

289. Plan a school day for a class of infants of about 5 years old, giving exact times of the lesson and all other items and mentioning exact subjects of the lessons. (Calcutta, 1937)

290. Describe briefly the psychological equipment of the child under eight, and indicate the main features of the curriculum and methods to be employed at the stage. (Aligarh, 1938)

291. What tendencies would you expect to find most active among children of the age ten? How would you give practical recognition to the importance of these tendencies when determining (*a*) the subjects of the curriculum for such children, (*b*) the class-room methods of instruction? (Nagpur, 1936)

292. Why is the period of early adolescence regarded as quite a critical period? What are the psychological and ethical changes that

mark off the age of adolescence from that of childhood? How would you, as a teacher, deal with this period of life? (Andhra 1935)

293. What are the mental and physical characteristics of boys and girls during the period of adolescence? Discuss their bearings on the principles of education at that stage. (Benares, 1935)

294. What personal traits first appear in adolescence? What can a High-school teacher do for the student when personality is marked by superficiality. (Calcutta, 1936)

295. In what respects and why does the period of adolescence seem to be the most fruitful period for moral development? (Nagpur, 1934)

296. Describe the physical, mental and moral characteristics of adolescence. How should they influence the content and method of secondary education? (Bombay, 1926)

297. What are the chief characteristics of adolescence? In view of this critically examine the following:—

"The matriculation requirements of Universities which in many cases are relics of over-intellectualistic tradition should no longer be allowed to dominate the training given to adolescents." (Bombay, 1932)

298. By the time that the age of 11 or 12 has been reached children have given some indication of differences in interest and abilities. If education is to act as stimulus it must appeal to those interests and cultivate these powers." Comment on this statement and show how educational organization should take account of individual differences during the period of adolescence. (Aligarh, 1938)

299. Discuss the psychological differences between the sexes and their educational implications. (T. D. London, External. 1933)

300. What are the main stages in the growth of a pupil? What is their educational significance? (Bombay, 1927)

301. Show in what way instinct plays a part in 'Mental development'. (Bombay, 1927)

302. "The child has the right to be at each stage what that stage requires." (FROEBEL)

"The aim of education is to hasten the change from boyhood to manhood." (Dr. ARNOLD)

Defend either of these propositions against an attack from the other. (T. D. London, External. 1936)

XX

EMOTION AND SENTIMENTS

303. What do you understand by 'emotion'? What are its characteristics? How far should the teacher encourage the expression and repression of emotions? (Bombay, 1925)

304. In what sense and to what extent are the emotions rightly to be regarded as "the foundations of character"? (T. D. London, Internal. 1934)

305. What is the James-Langue theory of emotion? Suggest some practical application of the theory in the schoolroom. (Bombay, 1926)

306. "There is no emotion that cannot by judicious treatment be transformed into something desirable" (Bombay, 1927)

307. Is the control of emotion necessary for the training of children? How would you cure a child who gives way to fits of anger? (Calcutta, 1938)

308. "The instincts and emotions are fundamental factors in behaviour and therefore they are of profound consequence in educational theory and practice." Explain and discuss the above statement. (Bombay, 1932)

309. Distinguish between emotion and sentiments, and indicate their respective places in the character-system. How are emotions trained? (Andhra)

310. Are feelings or is intellect the more powerful guide to the action of (*a*) a child, (*b*) an adult? Give examples of action in which the emotional attitude is (*a*) beneficial, and (*b*) not beneficial. (Nagpur, 1935)

311. Give an example of the growth of a sentiment. What sentiments would you regard as important to develop in your pupils, and how would you seek to develop them? (T. D. London, External. 1936)

312. "The education of the emotions is at least as important as the education of the intellect." Discuss this statement and indicate in what ways the school ought to share in the education of emotions. (Manchester, T. D. 1935)

313. What is the sentiment of self-regard? Trace the growth of this sentiment in a person whom you know or about whom you have read. (Bombay, 1933)

314. What is meant by the forming of a sentiment? Show by a specific example how the forming of a sentiment may be helpful in education. (Manchester, T. D. 1930)

315. Discuss the place of sentiments in character formation. Describe a method by which the sentiment of kindness to animals can be fostered. (Bombay, 1929)

316. What is the place of 'hatred' in the development of sentiments? How is it dangerous to cultivate hatred as a means of character-training?

317. Discuss the importance of a master-sentiment in the development of personality; and indicate the rôle of direct and indirect teaching in the formation of master-sentiments.

XXI

Moral Conduct: The Will

318. Explain the nature of the will, and show how it could be educated in the school. (Madras, 1936)

319. How are habits formed? What danger is there in over-emphasizing habit-formation in school? (Madras, 1936)

320. Modern ideals in education emphasise freedom and individuality. What exactly do you understand by this and how have these ideals influenced class-room procedure? (Nagpur, 1935)

321. State as clearly as you can what you understand by will, and describe and illustrate its functions. (Andhra, 1935)

322. Consider what methods you would adopt to train a child who is stubborn, disobedient and cruel to other children? (Madras, 1936)

323. What are the laws which appear to govern the formation of habits in an individual? State briefly what, in your view, is the true function of habit in life. (Manchester—T. D. 1921)

324. In a class-room you come across pupils who may be described as (1) impulsive, (2) obstinate, or (3) the over-hesitating. What will you do to help these three different types into self-controlled and efficient members of society?

325. A strong-willed man need not always be a good specimen of humanity. Discuss, giving examples. How will you deal with a strong-willed boy who shows unhealthy social habits?

326. Discuss the place of coersion, persuasion and suggestion in the formation of character. (Benares, 1938)

327. What do you understand by concentration of attention? What suggestion would you offer to a pupil who complains of his inability to concentrate? (Calcutta, 1937)

328. What is meant by a conflict of motives? How is such a conflict resolved? What practical suggestions would you offer [for the resolution of conflict]? (Andhra, 1937)

329. Give an account of the chief factors which contribute to the control of instincts in the human being. (Manchester—T. D. 1921)

330. Illustrate with definite examples the changes which may be expected to take place in a boy's or girl's moral code and ethical ideas during his or her school life. (T. D. London, External. 1933)

331. Explain the relation of 'will' to the formation and development of character. (Bombay, 1939)

XXII

Moral Conduct: Character And Personality

332. Define 'character', and distinguish it from 'temperament'. Show why and how a school should take up the responsibility for moral instruction and character training of its pupils. (Calcutta, 1936)

333. "Elements or factors partly inherited, partly acquired, combine to make up the background of personality." Discuss this statement and show how these elements are unified in a well-balanced personality. (T. D. London, Internal, 1936)

334. Discuss the psychological principles underlying the development of character. (Benares, 1937)

335. "Character is an organised set of habits of reaction" Discuss this statement and point out the ways in which a school can help in the character training of its pupils. (Nagpur, 1936)

336. What parts do instincts play in the development of character? (Bombay, 1925)

337. "The eventual nature that is desired from an individual is to be built up from his original nature." Comment on this statement; and describe briefly with one or two illustrations the process by which a child's character could be built up. What, if any, are the limitations of the above view? (Aligarh, 1937)

338. "Most childish misbehaviour is in the last resort the result not of weak or wilful sinning but of misdirected energy." Discuss this, with special reference to practical treatment. (T. D. London, Internal. 1932)

339. Indicate the rôle of the appeal and the parental impulses in the building up of character. (Mysore, 1931)

340. Discuss the part played by the parental and herd impulses in the development of character. (Mysore, 1932)

341. "Moral education is complicated by the fact that people vary as much in temperaments as they do in intelligence." How would you classify children according to temperament? Indicate briefly how you would treat each type so as to produce the best moral results. (Bombay, 1927)

342. On what principles are attempts made to reach satisfactory means of assessing character traits? How can their reliability be checked? (T. D. London, External. 1934)

343. Discuss some of the attempts that have been made to classify "temperament" according to types. (T. D. London, Internal. 1935)

344. Discuss the relation between "temperament" and "character". How would you help children who differ in temperament to work together harmoniously? (T. D. London, External. 1936)

345. To what extent and on what grounds is it justifiable to draw a distinction between instruction and the training of character? Indicate consequences which may follow from misconceptions in this regard. (T. D. London, Internal. 1936)

346. Is there any relation between mental ability and moral character? Are there some mental and moral traits which are closely interrelated.? (Calcutta, 1938)

347. 'Freedom is obedience to law' Estimate the educational importance of this aphorism. In this connection, discuss the advantages and disadvantages of rewards and punishments as means to character training. (Calcutta, 1938)

348. What do you understand by "a wholesome personality"? How would you seek to develop such personality in children? (T. D. London, Internal. 1935)

349. Define the functions of the teacher in regard to moral training. (T. D. London, Internal. 1933)

XXIII

Mental Hygiene

350. Explain the meaning of mental hygiene and show its usefulness for teachers. How would you deal with a nervous child who is afraid of answering questions in the class? (Calcutta, 1937)

351. What light has been thrown upon educational problems by the study of "nervous disorders"? (Manchester, T. D. 1921)

352. What do you understand by the "mental health" of the child? In what ways can the teacher help to preserve it? (T. D. London, Internal. 1936)

353. What must the teacher do to safeguard the mental health of his pupils? Mention some of the most frequent violations of the principles of mental health in the class-room. (Nagpur, 1937)

354. Discuss possible causes and methods of treatment of two of the following abnormalities in children:—(1) anxiety over mistakes in school work; (2) excessive self-consciousness; (3) habitual bullying;

(4) association with much younger children; (5) unwillingness to participate in social activities, sports or recreations. (T. D. London, Internal. 1935)

355. What is an inferiority complex? How does it arise and what kind of behaviour does it lead to? (Lahore, 1939).

356. Discuss the need for, and work of, child guidance clinics. (Manchester, T. D. 1931)

357. Describe the work of a Child Guidance Clinic, and discuss the underlying principles. (T. D. London, External. 1934)

358. What do you understand by the "Introvert type"? How will you deal with such boys in your class? (Nagpur, 1938)

359. "Continuously facing reality so as to find a solution of emotionally toned life problems in the realm of fact and not in the realm of phantasy is a cardinal principle of moral hygiene." (Starch.) Amplify this statement.

360. Suggest possible treatment in school for (1) the cheating boy; (2) the giggling girl; (3) the untidy worker; (4) the child with awkward social manners.

361. "Training towards self-guidance is the essence of the whole process of education". How will you realize this objective of education in the class-room? Illustrate your answer. (Mysore, 1932)

362. What is the place of sex-education in the school? How would you impart sex-information? Mention the dangers of a thoughtless or impure attitude on the part of those who give sex-information.

363. Describe any experience you have had in dealing with a child of difficult temperament or upbringing. What did you learn from the experience? (Manchester, T. D. 1935)

364. What are the moral and mental benefits derivable from organized games? How would you organize a system of games in your school, so that boys may derive full benefits from them? (Benares, 1935)

365. The unconsciousness motives are so frequent in children that punishment is never a safe means of dealing with them. Do you agree? Give reasons for your answer, citing examples from your own observation.

XXIV

Freedom, Discipline And Life Attitudes

366. How will you reconcile the ideas of discipline with the modern demand for freedom in the class room? Show how you will secure discipline in your class room. What are some of the factors that militate against discipline in the class room? (Mysore, 1932)

367. Discuss the respective places of authority and freedom in the education of children. How far are their claims mutually exclusive? (Manchester, T. D. 1934)

368. Explain clearly the basis of modern discipline. Show how this conception affects the administrations of punishment as a means of maintaining discipline in schools. Give illustrations in support of your answer. (Benares, 1935)

369. Comment on the following :—

"Nothing good enters the human world except in and through the free activities of individual men and women, and all educational practice must be shaped to accord with this truth." (Lahore, 1939).

370. In what sense may it be held that freedom and discipline imply each other? (London, T. D. Internal. 1936)

371. Explain what you mean by punishment. For what types of behaviour may punishment be needed in the school? (Manchester, T. D. 1926)

372. Consider from a psychological standpoint the place of punishment in intellectual and moral education. (Mysore, 1933)

373. Explain clearly the fallacy in the following remark :—"There is too much talk about self-expression nowadays; what children need is discipline." (London, T. D. 1931)

374. Distinguish between external discipline and self-discipline. To what extent may external discipline promote or retard self-discipline? (Mysore, 1934)

375. How are interest and discipline connected in the educative process? (Mysore, 1937)

376. The age of children in a class (Std. I of an A. V. School) varies from 9 to 15, as shown in the following table:—

Age 9	10	6 boys
10	11	4
11	12	5
12	13	7
13	14	6
14	15	2

Indicate, as a student of psychology, what problems of teaching and discipline would arise in handling such a class. (Bombay, 1937).

337. The general idea underlying effective management is to induce a situation wherein neither the teacher nor the taught think about management at all. Discuss. (Bombay, 1937)

378. Discuss the view that punishments in school are always reprehensible, but that rewards are useful. (London, T. D. 1929)

379. Describe some experiments in self-government in schools or classes. To what advantages and limitations of such self-government do these experiments point? (Manchester, T. D. 1932)

380. In what ways does a sound system of moral and religious education influence school discipline? (Benares, 1938)

381. Discuss the needs and limitations of moral and religious instruction in schools. What difficulties stand in the way of religious instruction in Indian schools, and how can you overcome them? (Benares, 1937)

382. How is the personality of the teacher important in the moral and spiritual development of the child?

383. "Every teacher gives something of his life to his children. Yet, hard and exacting as this may be, the teacher does receive something —much, in fact, from those he teaches; virtue not only goes out, but comes in; he is enriched." Discuss. (Lahore, 1939).

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