

PREFACE TO THE FIRST EDITION 1933

It is difficult for a philosopher to realise that anyone really is confining his discussion within the limits that I have set before you. The boundary is set up just where he is beginning to get excited. (573) A. N. WHITEHEAD

That all debunkers must add new boshes of their own to supply the vacua created by the annihilation of the old, is probably a law of nature. (22) E. T. BELL

Teaching without a system makes learning difficult. *The Talmud*

The layman, the 'practical' man, the man in the street, says, What is that to me ? The answer is positive and weighty. Our life is entirely dependent on the established doctrines of ethics, sociology, political economy, government, law, medical science, etc. This affects everyone consciously or unconsciously, the man in the street in the first place, because he is the most defenseless. (280) A. K.

When new turns in behaviour cease to appear in the life of the individual its behaviour ceases to be intelligent. (106) G. E. COGHILL

*'Tis a lesson you should heed,
Try again;
If at first you don't succeed,
Try again;
Then your courage should appear,
For if you will persevere
You will conquer, never fear,
Try again.*

WILLIAM EDWARD HICKSON.

The main portions of the present work have already been presented in the form of lectures before different universities, technological institutes, teachers' and physicians' associations, and other scientific bodies. The general outline was presented for the first time before the International Mathematical Congress in Toronto in 1924, and published in the form of a booklet. A further elaboration of the system was read before the Washington (D. C.) Society for Nervous and Mental Diseases in 1925, and the Washington (D. C.) Psychopathological Society in 1926, and later published. A fuller draft was presented before the Congrès des mathématiciens des pays Slaves, in Warsaw, Poland, in 1929. A special and novel aspect of the subject, in connection with the conditional reflexes of Pavlov, was outlined before the First International Congress of Mental Hygiene, Washington,

D.C., in 1930. Other aspects were discussed before the American Mathematical Society, October 25, 1930, and the Mathematical Section of The American Association for the Advancement of Science, December 28, 1931. The latter paper is printed as Supplement III in this volume.

The general character of the present work is perhaps best indicated by the two following analogies. It is well known that for the working of any machine some lubricant is needed. Without expressing any judgement about the present 'machine age', we have to admit that technically it is very advanced, and that without this advancement many scientific investigations necessitating very refined instruments would be impossible. Let us assume that mankind never had at its disposal a clean lubricant, but that existing lubricants always contained emery sand, the presence of which escaped our notice. Under such conditions, existing technical developments, with all their consequences, would be impossible. Any machine would last only a few weeks or months instead of many years, making the prices of machines and the cost of their utilization entirely prohibitive. Technical development would thus be retarded for many centuries. Let us now assume that somebody were to discover a simple means for the elimination of emery from the lubricants; at once the present technical developments would become possible, and be gradually accomplished.

Something similar has occurred in our human affairs. Technically we are very advanced, but the elementalistic premises underlying our human relations, practically since Aristotle, have not changed at all. The present investigation reveals that in the functioning of our nervous systems a special harmful factor is involved, a 'lubricant with emery' so to speak, which retards the development of sane human relations and prevents general sanity. It turns out that in the structure of our languages, methods, 'habits of thought', orientations, etc., we preserve delusional, psychopathological factors. These are in no way inevitable, as will be shown, but can be easily eliminated by special training, therapeutic in effect, and consequently of educational preventive value. This 'emery' in the nervous system I call identification. It involves deeply rooted 'principles' which are invariably false to facts and so our orientations based on them cannot lead to adjustment and sanity.

A medical analogy here suggests itself. We find a peculiar parallel between identification and infectious diseases. History proves that under primitive conditions infectious diseases cannot be controlled. They spread rapidly, sometimes killing off more than half of the affected population. The infectious agent may be transmitted either

directly, or through rats, insects, etc. With the advance of science, we are able to control the disease, and various important preventive methods, such as sanitation, vaccination, etc., are at our disposal.

Identification appears also as something 'infectious', for it is transmitted directly or indirectly from parents and teachers to the child by the mechanism and structure of language, by established and inherited 'habits of thought', by rules for life-orientation, etc. There are also large numbers of men and women who make a profession of spreading the disease. Identification makes general sanity and complete adjustment impossible. Training in non-identity plays a therapeutic role with adults. The degree of recovery depends on many factors, such as the age of the individual, the severity of the 'infection', the diligence in training in non-identity, etc. With children the training in non-identity is extremely simple. It plays the role both of sanitation and of the equally simple and effective preventive vaccination.

As in infectious diseases, certain individuals, although living in infected territory, are somehow immune to this disease. Others are hopelessly susceptible.

The present work is written on the level of the average intelligent layman, because before we can train children in non-identity by preventive education, parents and teachers must have a handbook for their own guidance. It is not claimed that a millenium is at hand, far from it; yet it seems imperative that the *neuro*-psycho-logical factors which make general sanity impossible should be eliminated.

I have prefaced the parts of the work and the chapters with a large number of important quotations. I have done so to make the reader aware that, on the one hand, there is already afloat in the 'universe of discourse' a great deal of genuine knowledge and wisdom, and that, on the other hand, this wisdom is not generally applied and, to a large extent, cannot be applied as long as we fail to build a simple system based on the complete elimination of the pathological factors.

A system, in the present sense, represents a complex whole of coordinated doctrines resulting in methodological rules and principles of procedure which affect the orientation by which we act and live. Any system involves an enormous number of assumptions, presuppositions, etc., which, in the main, are not obvious but operate unconsciously. As such, they are extremely dangerous, because should it happen that some of these unconscious presuppositions are false to facts, our whole life orientation would be vitiated by these unconscious delusional factors, with the necessary result of harmful behaviour and

maladjustment. No system has ever been fully investigated as to its underlying unconscious presuppositions. Every system is expressed in some language of some structure, which is based in turn on silent presuppositions, and ultimately reflects and reinforces those presuppositions on and in the system. This connection is very close and allows us to investigate a system to a large extent by a linguistic structural analysis.

The system by which the white race lives, suffers, 'prosperes', starves, and dies today is not in a strict sense an aristotelian system. Aristotle had far too much of the sense of actualities for that. It represents, however, a system formulated by those who, for nearly two thousand years since Aristotle, have controlled our knowledge and methods of orientations, and who, for purposes of their own, selected what today appears as the worst from Aristotle and the worst from Plato and, with their own additions, imposed this composite system upon us. In this they were greatly aided by the structure of language and psycho-logical habits, which from the primitive down to this very day have affected all of us consciously or unconsciously, and have introduced serious difficulties even in science and in mathematics.

Our rulers: politicians, 'diplomats', bankers, priests of every description, economists, lawyers, etc., and the majority of teachers remain at present largely or entirely ignorant of modern science, scientific methods, structural linguistic and semantic issues of 1933, and they also lack an essential historical and anthropological background, without which a sane orientation is impossible.* This ignorance is often wilful as they mostly refuse, with various excuses, to read modern works dealing with such problems. As a result a conflict is created and maintained between the advance of science affecting conditions of actual life and the orientations of our rulers, which often remain antiquated by centuries, or one or two thousand years. The present world conditions are in chaos; psycho-logically there exists a state of helplessness—hopelessness, often resulting in the feelings of insecurity, bitterness, etc., and we have lately witnessed psychopathological mass outbursts, similar to those of the dark ages. Few of us at present realize that, as long as such ignorance of our rulers prevails, *no solution of our human problems is possible.*

* The literature of these subjects is very large and impossible to give here or in my bibliography; but as primers I may as well suggest numbers 299, 334, 492, 558, 589 in my bibliography. These books in turn give further references.

The distinctly novel issue in a non-aristotelian system seems to be that in a human class of life elementary methodological and structural ignorance about the world and ourselves, as revealed by science, is bound to introduce delusional factors, for no one can be free from some conscious or unconscious structural assumptions. The real and only problem therefore seems to be whether our structural assumptions in 1933 are primitive or of the 1933 issue. The older 'popularization of science' is not the solution, it often does harm. The progress of science is due in the main to scientific methods and linguistic revisions, and so the new facts discovered by such methods cannot be properly utilized by antiquated psycho-logical orientations and languages. Such utilization often results only in bewilderment and lack of balance. Before we can adjust ourselves to the new conditions of life, created in the main by science, we must first of all revise our grossly antiquated methods of orientation. Then only shall we be able to adjust ourselves properly to the new facts.

Investigations show that the essential scientific structural data of 1933 about the world and ourselves are extremely simple, simpler even than any of the structural fancies of the primitives. We usually have sense enough to fit our shoes to our feet, but not sense enough to revise our older methods of orientation to fit the facts. The elimination of primitive identifications, which is easily accomplished once we take it seriously, produces the necessary psycho-logical change toward sanity.

'Human nature' is not an elementalistic product of heredity alone, or of environment alone, but represents a very complex organism-as-a-whole end-result of the enviro-genetic manifold. It seems obvious, once stated, that in a human class of life, the linguistic, structural, and semantic issues represent powerful and ever present environmental factors, which constitute most important components of all our problems. 'Human nature' *can be changed*, once we know how. Experience and experiments show that this 'change of human nature', which under verbal elementalism was supposed to be impossible, can be accomplished in most cases in a few months, if we attack this problem by the non-elementalistic, *neuro-psycho-logical*, special non-identity technique.

If the ignorance and identifications of our rulers could be eliminated a variety of delusional factors through home and school educational and other powerful agencies would cease to be imposed and enforced upon us, and the revision of our systems would be encouraged, rather than hampered. Effective solutions of our problems would then appear spontaneously and in simple forms; our 'shoes' would fit our 'feet' and

we could 'walk through life' in comfort, instead of enduring the present sufferings.

Since our existing systems appear to be in many respects unworkable and involve psychopathological factors owing in the main to certain presuppositions of the aristotelian system, and also for brevity's sake, I call the whole operating systemic complex 'aristotelian'. The outline of a new and modern system built after the rejection of the delusional factors I call 'non-aristotelian'. To avoid misunderstandings I wish to acknowledge explicitly my profound admiration for the extraordinary genius of Aristotle, particularly in consideration of the period in which he lived. Nevertheless, the twisting of his system and the imposed immobility of this twisted system, as enforced for nearly two thousand years by the controlling groups, often under threats of torture and death, have led and can only lead to more disasters. From what we know about Aristotle, there is little doubt that, if alive, he would not tolerate such twistings and artificial immobility of the system usually ascribed to him.

The connection between the study of psychiatry and the study of mathematics and the foundations of mathematics is very instructive. In the development of civilization and science we find that some disciplines, for instance, the very young science of psychiatry, have progressed rapidly. Other disciplines such as mathematics, physics, etc., until recently progressed slowly, mainly on account of certain dogmas and prejudices. Of late some of these prejudices have been eliminated, and since then the progress of these sciences has become extremely rapid. Still other disciplines such as 'psychology', the traditional 'philosophy', sociology, political economy, ethics, etc., have developed their principles very little in nearly two thousand years notwithstanding a wealth of accumulated new data.

Many reasons are responsible for this curious state of affairs, but I will suggest only three, in the order of their importance. (1) First of all, the last mentioned slowly developing disciplines are the closest to us humans, and a primitive man, or an entirely ignorant person 'knows all about' these most complex problems in existence. This 'know it all' general tendency produces an environmental, psycho-logical, linguistic, etc., manifold, filled with identifications which produce dogmas, prejudices, misunderstandings, fears, and what not, making an impersonal, impartial scientific approach next to impossible. (2) Few of us realize the unbelievable traps, some of them of a psychopathological character, which the structure of our ordinary language sets before us. These also make any scientific approach or

agreement on vital points impossible. We grope by animalistic trial and error, and by equally animalistic strife, wars, revolutions, etc. These first two points apply practically to all of us, and introduce great difficulties even into mathematics. (3) One of the main reasons why psychiatry has advanced so rapidly in such a short period in contradistinction to 'psychology', is that it studies relatively simple and relatively singled-out symptoms. But as these symptoms are not isolated, and represent the reactions of the organism-as-a-whole, their partial study yields glimpses of the general and fundamental mechanisms. If we study mathematics and mathematical sciences as forms of human behaviour, we study also simplified and singled-out human reactions of the type: 'one and one make two', 'two and one make three', etc., and we also get glimpses of general mechanisms. In psychiatry we study simplified psycho-logical reactions at their worst; in mathematics and mathematical sciences we study simplified psycho-logical reactions at their best. When both types of reactions are studied conjointly, most unexpected and very far-reaching results follow which deeply affect every known phase of human life and activity, science included. The results of such widely separated studies do not conflict, but supplement each other, elucidating very clearly a general mechanism which operates in all of us. Psychiatric studies help us most unexpectedly in the solution of mathematical paradoxes; and mathematical studies help us to solve very important problems in psychotherapy and in prevention of psycho-logical disorders.

History shows that the advancement of science and civilization involves, first, an accumulation of observations; second, a preliminary formulation of some kind of 'principles' (which always involve some unconscious assumptions); and, finally, as the numbers of observations increase, it leads to the revision and usually the rejection of unjustified, or false to facts 'principles', which ultimately are found to represent only postulates. Because of the cumulative and non-elementalistic character of human knowledge, a mere challenge to a 'principle' does not carry us far. For expediency, assumptions underlying a system have (1) to be discovered, (2) tested, (3) eventually challenged, (4) eventually rejected, and (5) a *system*, free from the eventually objectionable postulates, has to be built.

Examples of this abound in every field, but the histories of the non-euclidean and non-newtonian systems supply the simplest and most obvious illustrations. For instance, the fifth postulate of Euclid did not satisfy even his contemporaries, but these challenges were ineffective for more than two thousand years. Only in the nineteenth

century was the fifth postulate eliminated and non-euclidean systems built without it. The appearance of such systems marked a profound revolution in human orientations. In the twentieth century the much more important 'principles' underlying our notions about the physical world, such as 'absolute simultaneity', 'continuity' of atomic processes, 'certainty' of our experiments and conclusions, etc., were challenged, and systems were then built without them. As a result, we now have the magnificent non-newtonian physics and world outlooks, based on the work of Einstein and the quantum pioneers.

Finally, for the first time in our history, some of the most important 'principles' of all principles, this time in the 'mental world', were challenged by mathematicians. For instance the universal validity of the so-called 'logical law of the excluded third' was questioned. Unfortunately, as yet, no full-fledged systems based on this challenge have been formulated, and so it remains largely inoperative, although the possibilities of some non-aristotelian, though elementalistic and unsatisfactory 'logics', are made obvious.

Further researches revealed that the *generality* of the 'law of the excluded third' is not an independent postulate, but that it is only an elementalistic consequence of a deeper, invariably false to facts principle of 'identity', often unconscious and consequently particularly pernicious. Identity is defined as 'absolute sameness in all respects', and it is this 'all' which makes identity impossible. If we eliminate this 'all' from the definition, then the word 'absolute' loses its meaning, we have 'sameness in some respects', but we have no 'identity', and only 'similarity', 'equivalence', 'equality', etc. If we consider that all we deal with represents constantly changing sub-microscopic, interrelated processes which are not, and cannot be 'identical with themselves', the old dictum that 'everything is identical with itself' becomes in 1933 a principle invariably false to facts.

Someone may say, 'Granted, but why fuss so much about it?' My answer would be, 'Identification is found in all known primitive peoples; in all known forms of "mental" ills; and in the great majority of personal, national, and international maladjustments. It is important, therefore, to eliminate such a harmful factor from our prevailing systems.' Certainly no one would care to contaminate his child with a dangerous germ, once it is known that the given factor is dangerous. Furthermore, the results of a complete elimination of identity are so far-reaching and beneficial for the daily life of everyone, and for science,*

* While correcting the proofs of this Preface, I read a telegraphic press report from London by Science Service, that Professor Max Born, by the applica-

that such 'fussing' is not only justified, but becomes one of the primary tasks before us. Anyone who will study the present work will be easily convinced by observations of human difficulties in life, and science, that the majority of these difficulties arise from necessary false evaluations, in consequence of the unconscious false to facts identifications.

The present work therefore formulates a system, called non-aristotelian, which is based on the complete rejection of identity and its derivatives, and shows what very simple yet powerful structural factors of sanity can be found in science. The experimental development of science and civilization invariably involves more and more refined discriminations. Each refinement means the elimination of some identifications somewhere, but many still remain in a partial and mostly unconscious form. The non-aristotelian system formulates the general problem of non-identity, and gives childishly simple non-elementalistic means for a complete and conscious elimination of identification, and other delusional or psychopathological factors in all known fields of human endeavours, in science, education, and all known phases of private, national, and international life. This work, in its application to education and psychotherapy, has been experimental for more than six years.

The volume is divided into three main divisions, Book I gives a general survey of non-aristotelian structural factors discovered by science, which are essential in a textbook. Only such data are selected, interpreted and evaluated as are necessary for a full mastery of the system. Book II presents a general introduction to non-aristotelian systems and general semantics free from identity, and gives a technique for the elimination of delusional factors from our psycho-logical reactions. Book III gives additional structural data about languages, and also an outline of the essential structural characteristics of the empirical world, but only such as are pertinent for training in the non-aristotelian discipline.

Following each quotation prefacing each part and chapter, the number in parenthesis indicates the number of the book in the bibliography from which the quotation is taken.

tion of the *non-elementalistic* methods of Einstein, has succeeded in making a major contribution to the formulation of a unified field theory which now includes the quantum mechanics. Should this announcement be verified in its scientific aspects, our understanding of the structure of 'matter', 'electron', etc., would be greatly advanced, and would involve of course most important practical applications. For the semantic aspects of these problems, see pp. 378, 386 F., 541, 667, 698-701, and Chapter XXXIX.

I have tried to avoid footnotes as much as possible. The small numbers after some words in the text refer to the Notes on p. 763 ff., where the references to the bibliography are given.

Book II is largely self-contained and therefore can be read independently of the others, after the reader has become acquainted with the short tables of abbreviations given on pp. 15 and 16, and with Chapters II and IV. I believe, however, that for the best results the book should be read consecutively without stopping at passages which at first are not entirely clear, and read at least twice. On the second reading, passages which at first were not clear will become obvious because, in such a wide system, the beginning presupposes the end, and vice versa.

The discovery of such important and entirely general delusional factors in the older systems leads to a far-reaching revision of all existing disciplines. Because of modern complexities of knowledge this revision can only be accomplished by the activities of specialists working together as a group, and unified by one principle of non-identity, which necessitates a structural treatment.

To facilitate this most urgent need, and to present the results of this work to the public at reasonable prices, an International Non-aristotelian Library has been organized, to be printed and distributed by The Science Press Printing Company, Lancaster, Pennsylvania, U. S. A., and Grand Central Terminal, New York City.

It is also intended to organize an International Non-aristotelian Society with branches in connection with all institutions of learning throughout the world, where co-operative scientific work for the elimination of identity can be carried out, as this work is beyond the capacities of any one man.

Since the scope of the Library and Societies is international, I have accepted, in the main, the Oxford spelling and rules, which are a happy medium between the English used in the United States of America and that of the rest of the world. In certain instances I had to utilize some forms of expressions which are not entirely customary, but these slight deviations were forced upon me by the character of the subject, the need for clarity, and the necessity for cautiousness in generalizations. The revision of the manuscript and reading of the proofs in connection with other editorial and publishing duties has been a very laborious task for one man, and I only hope that not too many mistakes have been overlooked. Corrections and suggestions from the readers are invited.

The International Non-aristotelian Library is a non-commercial,

scientific venture, and the interest and help of scientists, teachers, and those who are not indifferent to the advancement of science, civilization, sanity, peace, and to the improvement of social, economic, international, etc., conditions, will be greatly appreciated.

From one point of view, this enquiry has been independent; from another, much material has been adapted. In some instances it is impossible to give specific credit to an author, particularly in a textbook, and it is simpler and fairer to state that the works of Professors H. F. Biggs, G. Birtwistle, E. Bleuler, R. Bonola, M. Born, P. W. Bridgman, E. Cassirer, C. M. Child, A. S. Eddington, A. Einstein, A. Haas, H. Head, L. V. Heilbrunn, C. J. Herrick, S. E. Jelliffe, C. J. Keyser, C. I. Lewis, J. Loeb, H. Minkowski, W. F. Osgood, H. Piéron, G. Y. Rainich, B. Russell, C. S. Sherrington, L. Silberstein, A. Sommerfeld, E. H. Starling, A. V. Vasiliev, H. Weyl, W. A. White, A. N. Whitehead, E. B. Wilson, L. Wittgenstein and J. W. Young have been constantly consulted.

Although I have had no opportunity to use directly the fundamental researches of Doctor Henry Head on aphasia, and particularly on semantic aphasia, my whole work has been seriously influenced by his great contributions. Doctor Head's work, in connection with a non-elementalistic analysis, makes obvious the close connection between: (1) identifications; (2) structural ignorance; (3) lack of proper evaluations in general, and of the full significance of words and phrases in particular; and (4) the corresponding necessary, at least colloidal lesions of the nervous system.

I am under heavy obligations to Professors: E. T. Bell, P. W. Bridgman, C. M. Child, B. F. Dostal, M. H. Fischer, R. R. Gates (London), C. Judson Herrick, H. S. Jennings, R. J. Kennedy, R. S. Lillie, B. Malinowski (London), R. Pearl, G. Y. Rainich, Bertrand Russell (London), M. Tramer (Bern), W. M. Wheeler, H. B. Williams, W. H. Wilmer; and Doctors: C. B. Bridges, D. G. Fairchild, W. H. Gantt, P. S. Graven, E. L. Hardy, J. A. P. Millet, P. Weiss, W. A. White, Mr. C. K. Ogden (London), and Miss C. L. Williams, for reading the manuscript and/or the proofs as a whole, or in part, and for their invaluable criticism, and suggestions.

I also owe much to Doctor C. B. Bridges and Professor W. M. Wheeler, not only for their important criticisms and constructive suggestions, but also for their painstaking editorial corrections and interest.

Needless to say, I assume full responsibility for the following pages, the more, that I did not always follow the suggestions made.

I wish to express my deep appreciation to Doctor W. A. White and the staff of St. Elizabeth's Hospital, Washington, D. C., who, during my two years of study in the hospital, gave me every assistance to facilitate my research work there. I am indebted to Doctor P. S. Graven for supplying me with his as yet unpublished experimental clinical material, which was very useful to me.

Three important terms have been suggested to me; namely, 'enviro-genetic' by Doctor C. B. Bridges, 'actional' by Professor P. W. Bridgman, and 'un-sane' by Doctor P. S. Graven, which debt I gladly acknowledge.

I am also deeply grateful to Professor R. D. Carmichael for writing Supplement I for this book on the Theory of Einstein, and to Doctor P. Weiss for his kind permission to reprint as Supplement II his article on the Theory of Types.

I warmly appreciate the kindness of those authors who gave me their permission to utilize their works.

During my twelve years of research work in the present subject and preparation of this volume I have been assisted by a number of persons, to whom I wish to express my appreciation. My particular appreciation is extended to my secretary, Miss Lily E. MaDan who, besides her regular work, made the drawings for the book; to Miss Eunice E. Winters for her genuine assistance in reading the proofs and compiling the bibliography; and to Mr. Harvey W. Culp for the difficult reading of the physico-mathematical proofs and the equally difficult preparation of the index.

The technical efficiency in all departments of the Science Press Printing Company, and the zealous and courteous co-operation of its compositors and officials, have considerably facilitated the publication of this book, and it is my pleasant duty to extend my thanks to them.

My heaviest obligations are to my wife, formerly Mira Edgerly. This work was difficult, very laborious, and often ungrateful, which involved the renouncing of the life of 'normal' human beings, and we abandoned much which is supposed to make 'life worth living'. Without her whole-hearted and steady support, and her relentless encouragement, I neither would have formulated the present system nor written the book which embodies it. If this book proves of any value, Mira Edgerly is in fact more to be thanked than the author. Without her interest, no non-aristotelian system, nor theory of sanity would have been produced in 1933.

A. K.

NEW YORK, AUGUST, 1933.

ACKNOWLEDGEMENT

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