

CHAPTER III

INTRODUCTION

And so far as the actual, fundamental, biological structure of our society is concerned and notwithstanding its stupendous growth in size and all the tinkering to which it has been subjected, we are still in much the same infantile stage. But if the ants are not despondent because they have failed to produce a new social invention or convention in 65 million years, why should we be discouraged because some of our institutions and castes have not been able to evolve a new idea in the past fifty centuries ? (553)

WILLIAM MORTON WHEELER

The ancient who desired to illustrate illustrious virtue throughout the empire, first ordered well their own state. Wishing to order well their own state, they first regulated their families. Wishing to regulate their families they first cultivated their own persons. Wishing to cultivate their persons they first rectified their heart. Wishing to rectify their hearts, they first sought to be sincere in their thoughts. Wishing to be sincere in their thoughts, they extended their knowledge to the utmost, and this extension of knowledge lay in the investigation of things. Things being investigated, knowledge became complete. Their knowledge being complete, their thoughts were sincere. Their thoughts being sincere, their hearts were then rectified. Their heart being rectified, their persons were cultivated. Their persons being cultivated, their families were regulated. Their family being regulated, their states were rightly governed. Their states being rightly governed, their whole empire was made tranquil and happy. From the emperor down to the mass of the people, all must consider the cultivation of the person, the root of every thing besides. CONFUCIUS

My service at the front during the World War and an intimate knowledge of life-conditions in Europe and the United States of America have convinced me that a scientific revision of *all* our notions about ourselves is needed. Investigation disclosed that all disciplines dealing with the affairs of man either do not have a definition of man, or, if they do, that it is formulated in metaphysical, *el*, subject-predicate languages, which are unscientific and ultimately semantically harmful.

As we have, at present, no general science of man embracing *all* his functions, language, mathematics, science and 'mental' ills included, I believed that to originate such a science would be useful. This task I began in my *Manhood of Humanity*, and have continued in the present volume. The selection of a name for such a science is difficult. The only really appropriate name, 'Anthropology', is already pre-empted to cover a most fundamental and sound discipline, without which even modern psychiatry would be impossible. This name, at present, is used in a *restricted* sense to signify the animalistic natural history of man, disregarding the fact that the *natural history of man* must include factors non-existent in the animal world, but which are his *natural* functions,

such as language and its structure, the building of his institutions, laws, doctrines, science, mathematics. , which condition his environment, his *s.r.*, which, in their turn, influence and determine his development.

We see that the ‘natural history’ of animals differs greatly in structure from a future scientific ‘*natural history*’ of man, a structural difference very seldom fully realized. I propose, then, to call the very valuable existing Anthropology the *Restricted Anthropology*, and to call the generalized science of man *General Anthropology*, so as to include *all* his natural functions, of which those covered by the Restricted Anthropology would be a part.

Such a definite General Anthropology would be very different from the existing restricted one. It would include all disciplines of human interest from a special anthropological and semantic point of view. Very often an anthropological discipline—for instance, anthropological psycho-logics, anthropological sociology, law, history, or ‘philosophy’— would turn out to be a *comparative* discipline. Such, by necessity, would have to use a language of four-dimensional structure, which would necessitate, as a preliminary, a fundamental revision of the structure of the language they use—a semantic factor which, up to now, has been largely neglected.

It is to be frankly admitted that the present enquiry has led to some quite unexpected and startling results. In my *Manhood of Humanity*, I defined man *functionally* as a time-binder, a definition based on a *non-el* functional observation that the human class of life differs from animals in the fact that, in the rough, each generation of humans, at least potentially, can start where the former generation left off—a definition which, in the language of this particular structure, *is sharp*, and corresponds to empirical facts. We should notice, also, that in the case of primitive tribes which apparently have not progressed at all for many thousands of years, we always find, among other reasons, some special doctrines or creeds, which proclaim very efficiently, often by killing off individuals (who always are responsible for progress in general), that any progress: or departure from ‘time honored’ habits or prejudices ‘is a mortal sin’ or what not. Even in our own case we are not free from such semantic tendencies. Only the other day, historically speaking, the ‘holy inquisition’ burned or silenced scientists. The discovery of the microscope and telescope, for instance, was delayed for a long time because the inventor, in fear of priestly persecution, was afraid to write his scientific discoveries in plain language. He had to write them in cipher—a fact discovered only a few years ago. Those afflicted with diseases can easily realize where our science in general, and medical

science in particular, *might* be today if not for the holy zeal of powerful enemies of science who vehemently and ruthlessly sponsored ignorance, old *s.r.*, and so disease.

In some countries, even at present, science is persecuted, and the attempt is made to starve scientists, a device often quite as effective as burning at the stake, of which the Tennessee trial and others are examples. But, in spite of all these primitive semantic tendencies, which, unfortunately, are often very efficient, the general time-binding characteristic of man remains unaltered, although its rate can be slowed down by the ignorance of those who control our symbolism—words, money, .

The failure to understand these problems is due to the fundamental fact that, until now, we have had no scientific functional *non-el* definition of man; neither have we originated any scientific enquiry into the inherent ‘nature of man’, which is impossible if we disregard *s.r.* We should remember that in this commercialized era we offer large incomes to those who preach with great zeal how ‘evil’ ‘human nature is’, and who tell us how, without their services, all kinds of dreadful things will happen to a given individual.

In the light of modern enquiry, the above issues come to a very sharp focus. Either these apostles *do* know that what they promise has only delusional value, yet they want to retain their incomes, or else they live in *delusional* worlds, and a sane mankind should take care of them. In either case, they are *unfit* to be any longer entrusted with the care of the further development of culture and the future of mankind. Sooner or later, we must meet this semantic situation squarely, as too many factors of human sanity are at stake.

In my *Manhood of Humanity*, it is shown that the canons of what we call ‘civilization’ or ‘civilizations’ are based on animalistic generalizations taken from the obvious facts of the lives of cows, horses, dogs, pigs, . and applied to man. Of course, such generalizations started with *insufficient data*. The generalizations had to be primitive, superficial; and when applied in practice, periodical collapses were certain to follow. No bridge would stand or could even be built, if we tried to apply rules of surfaces to volumes. The rules or generalizations in the two cases are different, and so the results of such primitive semantic confusion must be disastrous to all of us.

The present enquiry began with the investigation of the characteristic difference between animal and man; namely, the mechanism of time-binding. This analysis, because of the different structure of the language used, had to be carried on independently and anew. The results are, in many instances, new, unexpected even by myself, and

they show unmistakably that, to a large extent, even now we nearly all copy animals in our nervous processes. Investigation further shows that such nervous reactions in man lead to non-survival, pathological states of general *infantilism*, infantile private and public behaviour, infantile institutions, infantile ‘civilizations’ founded on strife, fights, brute competitions. , these being supposedly the ‘natural’ expression of ‘human nature’, as different commercialists and their assistants, the militarists and priests, would have us believe.

As always in human affairs, in contrast to those of animals, the issues are circular. Our rulers, who rule our symbols, and so rule a symbolic class of life, impose their own infantilism on our institutions, educational methods, and doctrines. This leads to nervous maladjustment of the incoming generations which, being born into, are forced to develop under the un-natural (for man) semantic conditions imposed on them. In turn, they produce leaders afflicted with the old animalistic limitations. The vicious circle is completed; it results in a general state of human un-sanity, reflected again in our institutions. And so it goes, on and on.

At first, such a discovery is shocking. On second consideration, however, it seems natural that the human race, being relatively so recent, and having passed through different low levels of development, should misunderstand structurally their human status, should misuse their nervous system, . The present work, which began as the ‘Manhood of Humanity’ turned out to be the ‘Adulthood of Humanity’, for it discloses a *psychophysiological* mechanism of infantilism, and so points toward its prevention and to adulthood.

The term ‘infantilism’ is often used in psychiatry. No one who has had any experience with the ‘mentally’ ill, and studied them, can miss the fact that they always exhibit some infantile symptoms. It is also known that an adult, otherwise considered ‘normal’, but who exhibits marked infantile semantic characteristics, cannot be a fully adjusted individual, and usually wrecks his own and other persons’ lives.

In the present investigation, we have discovered and formulated a definite psychophysiological mechanism which is to be found in all cases of ‘mental’ ills, infantilism, and the so-called ‘normal’ man. The differences between such neural disturbances in different individuals turn out to vary only in degree, and as they resemble closely the nervous responses of animals, which are necessarily regressive for man, we must conclude that, generally, we do not use our nervous system properly, and that we have not, as yet, entirely emerged from a very primitive semantic stage of development, in spite of our technical achievements.

Indeed, experience shows that the more technically developed a nation or race is, the more cruel, ruthless, predatory, and commercialized its systems tend to become. These tendencies, in turn, colour and vitiate international, national, capital-labour, and even family, relations.

Is, then, the application of science at fault ? No, the real difficulty lies in the fact that different primitive, animalistic, un-revised doctrines and creeds with corresponding *s.r* have *not* advanced in an equal ratio with the technical achievements. When we analyse these creeds semantically, we find them to be based on structural assumptions which are false to facts, but which are strictly connected with the unrevised structure of the primitive language, all of which is the more dangerous because it works unconsciously.

When we study comparatively the nervous responses of animals and man, the above issues become quite clear, and we discover a definite psychophysiological mechanism which marks this difference. That the above has not been already formulated in a workable way is obviously due to the fact that the *structure* of the old language successfully prevented the discovery of these differences, and, indeed, has been largely responsible for these human semantic disturbances. Similarly, in the present \bar{A} -system, the language of a new and modern structure, as exemplified by terms such as 'time-binding', 'orders of abstractions', 'multiordinal terms', 'semantic reactions', led automatically to the disclosure of the mechanism, pointing the way toward the means of control of a special therapeutic and preventive character.

The net results are, in the meantime, very promising. Investigation shows that, in general, the issues raised are mostly *linguistic*, and that, in particular, they are based on the analysis of the *structure* of languages in connection with *s.r*. All statements, therefore, which are made in this work are about empirical facts, language and its structure. We deal with an obvious and well-known inherent psychophysiological function of the human organism, and, therefore, all statements can be readily verified or eventually corrected and refined, allowing easy application, and automatically eliminating primitive mythologies and *s.r*.

After all is done and said, one can only wonder why such a simple fact that language represents a very important, unique, and inherent psychophysiological function of the human organism has been neglected so long.

The answer seems to be that: (1) the daily language is structurally extremely complex; (2) it is humanly impossible to analyse its structure by using the language of *A* structure, so that before anything can be done at all in this field a \bar{A} -system must first be formulated; (3) there is

a general innocence on the part of nearly all specialists, a very few mathematicians excepted, of the structural and semantic role of the simplest—although still inadequate— \bar{A} language called mathematics; (4) all these issues involve most powerful unconscious factors which work automatically against any revision, and (5) the building of a \bar{A} -system in 1933 is an extremely laborious enterprise, to say the least, and, in all probability; really beyond the power of any single man to complete.

The last point is quite important; and, although I have no intention to apologize or present any alibis, because any thoughtful reader will understand it, I must explain, nevertheless, briefly why the present work has probably fallen far short of what it eventually could be.

In the days of Aristotle, we knew extremely little of science in the 1933 sense. Aristotle, in his writings, formulated for us a whole scientific program, which we followed until very lately. Whoever, in 1933, attempts to build a \bar{A} -system, must, by *internal necessity*, connected with the problems of the *structure of language*, do something similar. Obviously, in 1933, with the overwhelming number of most diversified facts known to science, the question is no more to sketch a scientific program for the future, but to build a system which, at least in structure, is similar to the structure of the known facts from all branches of knowledge.

Let me repeat: the necessity is internal, and connected with the *structure of language* as such, involving new *s.r.*, and so no one can avoid it, as this whole work shows in detail.

Now such structural adjustment requires an immense amount of study of diverse empirical facts, and then it must depend on new generalizations, concerned in the main with structure. Many statements of scientists, when even accepted as reliable, still have to be translated into a special language in which structural issues are made quite obvious, divulging factors in *s.r.* This is a very serious difficulty, particularly when many branches of knowledge are drawn upon, as each uses its own special language; so that such a unitary translation in terms of structure imposes a serious burden on the memory of the translator, and often little details escape attention in the implications of the translation, although they may be well known to the translator. As this is probably the chief difficulty, it is in this field that the main corrections will have to be made.

I admit that I started this enquiry without fully realizing its inherent difficulties or whither it would eventually lead. The more I advanced, the more special knowledge was required. I had to go to sources, and,

in a way, partially specialize in many branches of science which were never connected before. The progress was extremely slow; in fact, it has taken ten years to write this book, but I had to go through the necessary preliminaries or abandon the whole enterprise.

Now I present the results of this work to the public. It is the best I can do, although I fully realize its limitations and imperfections. The unexpected drama of such an enterprise is found, in that a \bar{A} -system, like its predecessor, involves full-fledged structural metaphysics of some sort, to be explained later.

The A -system involved primitive structural metaphysics; a \bar{A} -system, to be of any semantic value at all, must start with the structural metaphysics or structural assumptions as given by science 1933. The first step in building such a system is to study science 1933 and mathematics, and so to know these structural data (and assumptions where we lack data). Such a study is very laborious, slow, and even ungrateful, because the issues with which we are concerned are *structural*. Thus, years of patient and sometimes painful labour often result merely in a very few and brief, but important, sentences.

The active, and only very lately relaxed, persecution of those scholars who dared to attempt the revision of Aristotle has been very effective in keeping the primitive *s.r.* There are in this field practically no important works of a critical character, and this fact, naturally, made my own work more difficult.

It appears that, during the last few years, most of the physiological functions of the human organism have been investigated, with the exception of psychophysiological *semantic reactions* and their disturbances from the present point of view.

The study of aphasia is rather recent, and that of *semantic aphasia* still more so. Only since the World War has much new knowledge been accumulated in this field. With the 1933 scientific outlook, macroscopic structure becomes a function of the sub-microscopic dynamic structure, and the considerations of colloidal structure and disturbances become extremely important. We must, therefore, enlarge the study of semantic aphasia as connected with macroscopic lesions, to include semantic phasic (not only a-phasic) sub-microscopic functional disturbances connected with *order*, natural survival order and its pathological reversal, the disturbances of the *multiordinal semantic reactions*.

It is known that 'mental' ills or difficulties often disturb physiological functions of the human organism, and vice versa. Something similar appears to be true about the last and little-investigated *s.r.* In this case, more and special difficulties arise, because of the fact that

these particular reactions are strictly connected with different 'emotional' or affective responses, which are due to the knowledge (or lack of knowledge) of their mechanism. They are circular, as all functions connected with knowledge are. This difficulty is very serious and closely connected with the *structure of language*, disclosing also a most important fact, that languages *may* have structure. This subject could not have been even suggested by the *A*-system; nor could it have been analysed by *A* means.

The most encouraging feature of this work is the fact that it is *experimental*, and that in cases where it has been applied, it worked remarkably well. It appears that all desirable human characteristics, high 'mentality' included, have a definite psychophysiological mechanism, easily understood and easily trained. One should not expect this training to be more quickly acquired than the mastering of spelling, or driving a car, or typewriting. Practice shows that it requires approximately as much diligence and persistence as learning to spell or to typewrite. The results accomplished in the field of 'mental' health, widened horizons, and unlimited possibilities for personal and public adjustment, justify so small a price. This applies to adults, but in a different way is true for children. From an educational point of view, it is as simple or as complex to train children in the improper use of an important physiological function, such as language, as to train them in the proper use of the nervous system and appropriate *s.r.* In fact, the new is simpler and easier, if we start with it, because it is in accordance with 'human nature'. In theory, it plays a most important role in the prevention of many future eventual break-downs, which the old misuse of the function was certain to involve.

The problems of a \bar{A} -system are, to the best of my knowledge, novel. They are of two kinds: (1) scientific, leading to a theoretical, general structural revision of all systems, and (2) purely practical, such as can be grasped and applied by any individual who will spend the time and effort necessary to master this system and acquire the corresponding *s.r.*

The results are far-reaching. They help any individual to solve his problems by himself, to his own and others' satisfaction. They also build up an *affective* semantic foundation for personal as well as for national and international agreement and adjustment.

Some of the results are quite unexpected. For instance, it is shown that the older systems, with their linguistic methods of handling our nervous system, led inevitably to 'universal disagreement'. In individual life this led to pathological conflicts with ourselves; in private life, to

family strifes and unhappiness, and so to nervous disturbances; in national life, to political strifes, revolutions. ; in international affairs, to mutual misunderstanding, suspicion, impossibility to agree, wars, World Wars, 'trade wars'. , ultimately ending in slaughter, general unemployment, and an unnecessarily great amount of general unrest, worry, confusion, and suffering in different degrees for all, helping again to disturb the proper working of the human nervous system.

The subject of this work is ultimately 'speaking about speaking'. As all human institutions depend upon speaking—even the World War could not have been staged without speaking—and as all science is ultimately verbal, such an analysis must cover a large field. In such an attempt, therefore, we must first understand the speaking of scientists, of different specialists. , and so must get acquainted with their languages, and what they are talking *about*. This is the semantic reason why I have had to explain to the reader many simple, yet necessary, scientific structural issues.

The present book is written on the level of the average intelligent reader, and any such reader will get the full benefit for his labour provided he is willing to put into it the necessary work and persistence. Perhaps a word of warning is necessary. My own personal experience is that, when once we have acquired a bad habit, let us say in making errors in typewriting, this bad habit is very difficult to eliminate. A similar remark applies to the old habits of speech, and of the semantic responses connected with them. A re-education is simple in principle, but it requires a great deal of persistent effort to overcome undesirable *s.r.* My experience convinces me that the self-satisfied, the 'happy' person, who has no problems at all, if there is such a person, should not attempt to read this book. He will waste just so much effort. But I can confidently promise that any one who has any problems to solve,—be they personal difficulties with himself, his family, or his associates—the scientist, the teacher, or the professional person who wants to become more efficient in his own work, will be amply repaid for spending the necessary 'time' in mastering the linguistic, and so neurological problems involved in such a structural semantic re-education.

This investigation has turned out to be a general introduction to a theory of sanity, the first ever made, as far as I know. When applied, it genuinely works; but, of course, we have to apply it fully. Mere lip-service will not do; because while superficial agreement is quite easy, yet physiologically, on a deeper level, we continue to follow the older harmful *s.r.* In such a case nothing is actually changed; the old neurologically harmful animalistic responses persist. For this the author and

the present work must not be held responsible; the fault will lie in the disregard of fundamental conditions by the reader or the students.

From an educational point of view, these problems are particularly important. If teachers disregard the structural linguistic semantic issues, they disregard a most powerful and effective educational method. If they train in structurally and physiologically harmful *A* habits, after this mechanism has been disclosed, such teachers, to my understanding, do not honestly perform their very serious social obligations. Ignorance is no excuse when once we know that ignorance is the only possible excuse.

The present \bar{A} -system is far from perfect. Such a work as this has, of necessity, to be altered with the years, as the structure of the language used has to be continually adjusted to newly discovered empirical structural data. But the present enquiry at least shows that in the researches in the linguistic and structural semantic fields there are undreamed-of possibilities of tremendous power, and the circularity of human knowledge is made to work with an increasing acceleration in a constructive way toward the adulthood of man.

In Chapter I, I have given a tentative list of some results following from the present work. Among them we found a new and *semantic definition of number* and mathematics, to be explained in Chapter XVIII. This has very far-reaching consequences, because the existing definition of number is *A*, in terms of classes, and makes the importance of mathematics still more mysterious. With the discovery that the only content of knowledge is structural, understood as a complex of relations and multiordinal and multi-dimensional order, and that the structure of the nervous system is such that only in mathematics do we find a *language of similar structure*, the importance of mathematics, considered as a language, becomes of fundamental semantic significance for a theory of sanity. But to show that, and to be able to apply this fact in practice, we must clarify or rather eliminate the mystery which surrounds number and measurement. The semantic definition of number is given in terms of relations, and so number and measurement become the most potent factors for supplying us with information about structure, which we know already gives the only content of knowledge.

At this point, I feel it essential to refer to the unique and astonishing work of Oswald Spengler, *The Decline of the West*. This work is a product of such unusual scholarship and breadth of vision that, in many instances, the details do not matter. Its method, its scope, and the complete novelty of its general point of view, combined with such tremendous erudition, are of main importance. The work is labeled by the author as a 'philosophy of history', or a morphology of history, or

morphology of cultures. The word 'morphology' is used as implying the study of forms, and the term 'form' appears very frequently throughout the book.

The main contention of this work—and it is an entirely justified observation—is that the behaviour of the organisms called humans is such that, at different periods, they have produced definite aggregates of achievements, which we dissect and label 'science', 'mathematics', 'architecture', 'sculpture', 'music'. , and that at any given period all these achievements are interconnected by a psycho-logical necessity. To this statement I would add: the *structure of languages* of a given period which affect the *s.r* should not be disregarded.

Spengler is a mathematician, an extremely well and generally informed mathematician at that, with a great vision. He surveys these aggregates as definite units and shows the necessary psycho-logical connections between all the achievements and the evolution of the notion of number. It does not matter whether all his connections are always beyond criticism. That some such connections do exist, seems beyond doubt. All human achievements have been accomplished in some definite period, and they have been accomplished at a definite period only because of the necessary psycho-logical attitude and *s.r* of that period.

With regard to the method followed in this work of Spengler, we must notice, first of all, that the attitude of the work is frankly anthropological, in the sense of *General Anthropology*; namely, as the *natural history of man*, not disregarding man's *natural* behaviour, such as building up sciences, mathematics, arts and institutions, and creating new environments, which again influence his development. Morphology means 'study of forms', which carries *static* implications. Taken from the dynamic point of view 1933, when we know that the dynamic unit, out of which the world and ourselves appear to be built, is found in the dynamic atom of 'action'; his 'form' becomes four-dimensional *dynamic structure*, the equivalent of 'function'; and then the whole outlook of Spengler becomes a *structural* enquiry into the world of man, including all his activities.

This 'form', or rudimentary structural point of view, or feeling, or inclination, or tendency, or *s.r*—call it what you choose—Spengler, the mathematician and historian, acquires from the deep study of mathematics considered as a *form of human behaviour*; which, in turn, is a part of his behaviour when he was planning and accomplishing his work, a natural expression of the strivings of *his* epoch, which is also our own. In my own work, I have attempted to formulate these vague strivings of our epoch in the form of a general *semantic* psychophysiological theory.

From this point of view, his achievement is momentous, a great description of the childhood of humanity. In spite of the title, there is nothing pessimistic about it, although most of his readers understood it in that way. The Decline of the West, implies the birth of a new era, perhaps the adulthood of humanity. There is no doubt in 1933 that the collapses of the older systems which we witness are probably irrevocable. Sir Auckland Geddes, the British Ambassador to the United States of America, foresaw them when he said in 1920: 'In Europe, we know that an age is dying. Here it would be easy to miss the signs of coming changes, but I have little doubt that it will come. A realization of the *aimlessness* of life lived to labour and to die, having achieved nothing but avoidance of starvation, and the birth of children also doomed to the weary treadmill, has seized the minds of millions.'

In 1932 Ambassador Mellon, of the United States of America to Great Britain, said:

'Part of our difficulty arises because we look on the present industrial economic crisis as merely a sporadic illness of the body politic due to conditions in some particular country or section of the world which can be cured by applications of some magic formula. Greater difficulty arises because we who are left over from the last century continue to look on the last decade as merely a prolongation of all that is gone before. We insist upon trying to make life flow in the same channels as before the war, whereas in the years since the war ended are, in reality, the beginning of a new era, not the end of the old.'

To this statement of Ambassador Mellon, the newspapers comment as follows:

'This is an important utterance, since, as far as we know, it is the first admission from the ruling forces in this country that the present panic is not "just another panic".'

No doubt, a period of human development has ended. The only sensible way is to look forward to a full understanding of the next phase, get hold of this understanding, keep it under conscious and scientific control, and *avoid this time*, perhaps for the first time in human history, the unnecessary decay, bewilderment, apathy, individual and mass suffering in a *human* life-period, animalistically believed, up to now, to be unavoidable in the passing of an era. Instead of being swept down by animalistic resistance to the *humanly* unavoidable change, we must analyse, understand, and so keep conscious control of one change to another, and, as yet, always higher state of human culture.

This is no place to analyse these issues in detail. Volumes have already been written about the work of Spengler. More volumes will

be necessary to analyse the issues raised, and not always solved, in this present volume.

I want to make clear only that words are *not* the things spoken about, and that there is *no* such thing as an object in absolute isolation. These assertions are negative and experimental and cannot be successfully denied by any one, except by producing positive evidence, which is impossible.

We must realize that *structure, and structure alone*, is *the* only link between languages and the empirical world. Starting with undeniable negative premises, we can always translate them into positive terms, but such translation has a new and hitherto unprecedented security. In the era which is passing, positive premises were supposed to be important, and we did not know that a whole \bar{A} -system can be built on negative premises. The new era will have to reevaluate these data, and build its systems on *negative premises*, which are of much greater security. *A priori*, we cannot know if such systems can be built at all, for in this field the only possible 'proof' is actual performance and the exhibition of a sample.

This has been attempted in my work, and so the possibility of such systems becomes a fact on record.

In the new era, the role of mathematics considered as a form of human behaviour and as a language will come to the fore. Means can be found, as exemplified in the present volume, to impart mathematical structure to language without any technicalities. It is enough to understand the above-mentioned negative premises and the role of structure, and to produce systems from this angle.

The role of mathematics has been and, in general, is still misunderstood, perhaps because of the very unsatisfactory definition of number. Even Spengler asserts that 'If mathematics were a mere science, like astronomy or mineralogy, it would be possible to define their object. This, man is not, and never has been, able to do.' The facts are that mathematicians have been prone to impress us with some religious awe of mathematics; meanwhile, by definition, whatever has symbols and propositions must be considered a *language*. All mystery vanishes in this field, and the only question is as to what kind of language mathematics represents. From the structural point of view, the answer is simple and obvious. Mathematics, although in daily life it appears as a most insufficient language, seems to be *the only language* ever produced by man, which, *in structure, is similar*, or the most similar known, to the structure of the world *and of our nervous system*. To be more explicit,

let me say at once that in this similarity of structure, we find *the only* positive 'knowledge' of 1933, and, perhaps, of any date.

So far, I am in full agreement with the great work of Spengler. More than that, *The Decline of the West* may be considered as a preliminary and preparatory survey of the great cultural spasms which have rocked mankind. It may be instructive, in the meantime, to point out some differences, and the eventual difference of conclusions, between the present work and the work of Spengler.

The difference, to start with, is in language. Spengler announces his work as 'intuitive and depictive through and through, which seeks to present objects and relations illustratively instead of offering an army of ranked concepts'.

My own aim is not merely descriptive, but structural and analytical, and so I must use a different language, helping to discover semantic psychophysiological *mechanisms* of the events of which Spengler is giving us a very exceptional *picture*.

Spengler missed two points: that mathematics must be considered a language; and that the connection which he asserts between the mathematics of each period and other achievements is more general than he suspects and applies to the inherent *structure* of languages, in general, and the *s.r.* of each period, in particular.

Although his analysis is in effect \bar{A} , yet the \bar{A} issues are not formulated clearly or consciously; nor does he mention that the present-day accepted definition of number in terms of classes is still A . It is true that he considers 'forms' and the use of number as relations, but he does not emphasize that number has not been formally defined as a relation, which is essential in a \bar{A} -system. His 'form' is still static and not dynamic structure; nor did he discover that the only possible content of knowledge is structural, a fact which is *the* semantic factor responsible for 'cultures', and 'periods', and everything else in human development.

This present work is in great sympathy with the momentous work of Spengler; but, as it culminates in a \bar{A} -system, it goes further than his, and is more workable and more practical, confirming the general contention of Spengler, that cultures have their periods of growth and development and that, so far, without conscious human intention, they are superseded by others.

We should notice once more in this respect that the issues we deal with, whenever *human* psycho-logical reactions are involved, are circular, as distinguished from animal reactions. Human structures, in language or in stone, reflect the psycho-logical status, feelings, intuitions, structural metaphysics, and other *s.r.* of their makers and periods; and,

vice versa, once these structural strivings and tendencies are formulated as such, they help to quicken and transform one period into the next one.

To the best of my knowledge, the general analysis of this most fundamental structural semantic problem of human knowledge is here formulated for the first time. It will allow, as a result, the making of human progress conscious; it will enable us to control it and so to make it uninterrupted by the painful and wasteful semantic periods of hopelessness and helplessness so characteristic of the older periods of transition.

If it is an historical fact and also a psycho-logical fact that a time-binding class of life has to have periods of development, let us have them ! Let us investigate the mechanism of time-binding, of *s.r.*, which are the dynamic factors of those changes and developments ! Let us direct that development consciously, and this will lead to the elimination of unnecessary and painful panics, unrest, and the often bloody bursting of those animalistic barriers self-imposed on the dynamic class of life called 'man'.

When all is said and done, one cannot but see, at least as far as the white race is concerned, that a change from an *A* to a \bar{A} -system must be momentous. Such a change will mark the difference between a period when the mystery of 'human knowledge' was not solved and a period when it has been solved. This inherent human circular characteristic has, so far, been neurologically abused. We have not known how to handle our nervous structure. We have imposed upon and hampered human development by animalistic methods. The solving of the problems of the content of 'human knowledge' will open a new era of man as a man, leading toward proper handling of his capacities, and an era scientific in all respects, not merely in a few exact sciences. Psycho-logically, it will be an era of sanity, and, therefore, of human general adjustment, agreement, and co-operation. The dreams of Leibnitz will become sober reality.

The only determined attempt made, so far, to deal with the symbolic problems whose importance is emphasized in the present work is that of the Orthological Institute (10 King's Parade, Cambridge, England). This research organization, founded by C. K. Ogden, editor of 'The International Library of Psychology', is concerned with the influence of language on 'thought' in all its bearings; and it is to be hoped that further endowment may be forthcoming to enable the scope of its enquiries to be extended to include *structure, non-elementalistic semantic reactions,* and *non-aristotelian systems.* Reference to International Languages or a Universal Language will be found in the notes.¹