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**THE FEELING OF SUPERIORITY
AND
ANXIETY—SUPERIOR**

**THE OTTAWA EXPERIMENTS
ON THE LAW IN NATURE**

By

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FOREWORD

This study constitutes and is a continuation of a thesis on *The Feeling of Superiority and Anxiety-Superior* and, under the same title, the following experiments:—

The Ottawa Pilot Study;

The Ottawa Test-Tube Survey on Status; and

The Ottawa Trial Survey on Personality.

As in previous studies, this investigation was conducted among the people, and the author is grateful to the many individuals who so readily participated.

The writer owes to his wife's kindness and sacrifice the possibility of carrying out these researches.

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INTRODUCTION

AN UNPARALLELED state of anxiety-superior exists throughout the world. It may be at a vital or at a survival level, but it persists screened or displayed.

In a free society where it is possible for living human organisms to manifest their *own* patterns of organization of specific superiority of behaviour to survive in the perpetual change of conditions and situations, they can resolve their anxiety-superior. In a society where living human organisms are conditioned by artificial and deceptive means to blind obedience, they inhibit their anxiety-superior and appear to become machines.

The benefits which science has given to mankind are immense. Yet satellites, radio-guided missiles, radioactive (or toxic) atom bombs, energy, electricity, power, force, and psychological warfare are to be used for the conformity and mechanization of living human organisms.

In ancient Greece men were concerned with understanding the law in nature underlying the world of change. Somehow they sensed that the survival of a civilization or a society did not depend on technological and economical achievements alone. The record of progressive change confirms this. Aristotle's contentions that there is no gap between living organisms and nature and that man is part of nature are primary data of observations.

In the Roman Republic science was encouraged mostly for its practical results. This proved to be fatal to the progress of science and to the Republic.

History shows that, in the final analysis, living human organisms refuse to be a battle-ground for uncanny powers. They may acknowledge some Olympian gods who constitute a meaningful world. Nevertheless, they will never submit to being playthings of fictitious forces.

Materialists elevate nature's by-products to the role of gods and dream of the conquest of the universe. They believe that, in formulating various laws and equations, they can control and overthrow nature.

What the mechanist demands is the acceptance of the fictitious superiority of notions of stuff, such as force and energy, over man and

nature. This summons, however, is not readily accepted even by the average thinking man, as he finds it difficult to believe that life is force, energy, and electricity.

Now that man has been made to shift for himself between ancient and modern metaphysics, the law in nature still provides him with a foothold. The deities of modern materialistic science and of the medieval orthodox scheme of things speak from a greater and greater distance. Man begins to ponder the mystery of the divine, and the more natural he is the more isolated he becomes. Nevertheless, for survival, to organize patterns of organization of specific superiority of behaviour, the living human organism must also overcome the interplay of secondary products including the inertia of formidable institutions. Man begins to realize that the living human organism itself is just as divine as 'energy,' 'electricity,' 'money,' or 'institutions.' Thus anxiety-superior is experienced to an unprecedented extent.

There are no more far-reaching phenomena in nature than specific superiority and anxiety-superior. However, running round the cycle of the 'forms of energy' or assigning things to causes, which always have to be under individual control, will not bring satisfactory understanding to the behaviour of entities in nature.

If science is not to be enmeshed in various prejudices, then it must acquire some knowledge of the basic law in nature. In the literature, countless references are made to nature. A few random examples may illustrate this without commenting on them.

'The only thing that moves nature is causal necessity, and that goes for human nature too.' (Jung)

'For we cannot command nature except by obeying her.' (Bacon)

'Nature is a unity, self-sufficient and self-subsistent, and science is but a reflection or imaging of nature.' (R. McRae)

'He has advanced in technology, but there has been no corresponding advance in his mastery of himself. He has learned to work in harmony with the laws of Nature more quickly than he has learnt to live in harmony with his fellow men.' (C. F. Garbett)

'Another cause of "man's inhumanity to man" is ignorance because it can only exist in the absence of broad knowledge of man and nature.' (Graubar)

'A little reflection will convince most people that what we think

and do are greatly influenced by our conception or misconception of the nature of life.' (J. A. V. Butler)

'All the phenomena which make their appearance in a living being obey the same laws as those outside it.' (Claud Bernard)

'That Nature is a harmony and we belong to Nature signifies therefore that we and Nature are all one.' (Sherrington)

It is true, but to have harmony all phenomena in nature must obey the *same* law. Thus, to have a clearer comprehension of specific superiority and anxiety-superior, it is necessary to try to bring nature within the grasp of understanding. Nature certainly does not wish to remain a mystery, nor does it need superstition. It is inevitable, therefore, to eliminate some of the metaphysical conceptions which have a blinding influence on the interpretation of nature and on the phenomena under investigation. However, a few preliminary remarks may be in order.

In these studies it is considered unnecessary to give a definition of words or terms. A definition outside of a dictionary is but playing with words. Any dictionary will give the meaning of words or terms when they are used correctly.

It is important to note that the following arguments are in no sense directed against the intelligent and legitimate use of various explanations of science, nor are they intended to belittle or deter attempts to extend these explanations for the exploration of nature and the practical knowledge they may give for various needs. Nevertheless, in the final analysis, the survival of a civilization of a society depends on understanding the nature of the universe.

The Ottawa experiments on the 'Feeling of Superiority and Anxiety-Superior' disclosed the principle that all phenomena in nature obey the same law and that nature is composed of open entities of specific superiority. An examination of these different entities will further clarify the notion of specific superiority and prepare the way to gain additional knowledge of anxiety-superior and of the law in nature.

The basic assumption of these studies is that *nature is constituted of open entities with patterns of organization of specific superiority of behaviour which obey but one law. There is a perpetual interplay and competition between entities. Thus, by virtue of this interplay and competition, irrelevant of patterns of organization, entities have specific*

superiority of behaviour. It follows that the terms 'environment' and 'surround' used in this study refer to the universe.

In the light of these facts, some theories and notions of science will be considered. A few samples were taken from various fields to throw more light on the phenomena under investigation. Because of space available, it is necessary to be brief and abrupt. In spite of this limitation, it is hoped that the work may contribute, not only to the understanding of the phenomena under investigation, but to the formulation of scientific views.

The first thing to be observed on approaching the subject of twentieth century science is that the basic scientific principle of the appeal to truth is tyrannically set aside more and more by various ideological considerations. In some societies authoritarian personalities destroy the effects of science, and semi-authoritarian personalities obliterate them by their ignorance and inadmissibility. Now totalitarian personalities try to enmesh the whole world in the ideology of the Dialectics of Nature enunciated by Marx and Engels.

Freedman⁷ in 'The Principles of Scientific Research' presents the four fundamental principles embodied in Dialectic Materialism, as follows:—

"1. . . . everything in Nature has a history, nothing is eternal and immutable, and everything is in a continued state of change."

"Milne has developed a theory that the colour-shift in the light of distant stars is not due to their accession, but to a change of laws of the Universe with time. In a universe in which change is everywhere observed, the laws of nature themselves need not be immutable."

"2. The other principles embodied in Dialectic Materialism, which, according to Marx and Engels, must be accepted by any scientist, consciously or unconsciously in framing of a correct hypothesis or final induction are Unity of Opposites, Change of Quantity into Quality, and Negation, and Negation of Negation. Marx and Engels did not suggest that the mere acceptance of these principles would make an hypothesis or the final induction right, but they maintained that a contravention of these principles would certainly make an hypothesis or induction wrong."

"The present theory of light, which confirms the correctness of both the corpuscular and the wave concepts, and which explains why

⁷ Paul Freedman, Op. cit., pp. 63-7.

light has energy and is also influenced by gravity, is therefore a striking confirmation of the correctness of the 'unity of opposites' principle."

"The principle of transition of quantity into quality is perhaps most strikingly illustrated in the case of radioactivity, when the mere quantitative increase of U235, or of plutonium, above a certain critical point, produces suddenly a nuclear fission of the entire aggregate with liberation of enormous quantity of atomic energy."

"The principle of negation and negation of negation is perhaps most impressively illustrated in astrophysics, by the supernova phenomena. (. . .) Increase of mass may occupy, and beyond a certain point uncontrollable contraction to a geometric point sets in according to the principle of negation, however, such a state of affairs cannot exist without creating an opposite tendency, a factor which tends to, and at a certain point actually must, negate the negation. A new force must come into play to stop the contraction of the stellar body to a mathematical point. This is what has actually been observed, when Zwicky discovered a number of supernovae-stars which explode with a brilliancy several billion times greater than that of the sun."

"The primary value of the principles" writes Freedman "from the point of view of scientific research, must reside in their value as guides to formulation of correct hypothesis. But is by no means easy to apply them for that purpose (. . .). It may be said that, on the whole, the possible value of dialectic materialism as a guide to scientific research is almost unexplored."

"Dialectic Materialism as a guide to scientific research would not make an hypothesis or the final induction right," said Marx and Engels. Yet they demand the acceptance of its principles just because they say it is so. What are these philosophical principles of Dialectics of Nature?

" nothing is eternal and immutable,"—for Marx and Engels. On the other hand, *in nature everything is eternal whether it is mutable or not.*

" . . . everything is in a continued state of change." Long before Dialectics, Heraclitus said—"everything flows."

Milne's theory that changes of laws of the universe with time bring about changes is untenable. What does it mean—'with time'? Time, as such, cannot do anything in nature. In fact the notion of time depends on change. Then why should the laws of the universe

change with time? What would cause both the law in nature and of the stars or for that matter any other entity to change?

The colour shift in the light of distant stars is not due to a change of the laws of the universe with time. It is due to the interplay and competition of entities of specific superiority in the universe, which is the law in nature. This interplay and competition goes on irrelevant of wondering of 'time.'

In his lectures on the Edward Cadbury Foundation at the University of Birmingham, Milne¹¹ stated ". . . the whole course of the evolution of a galaxy is one of interchange of its members with other galaxies. There is an outward drift in the neighbourhood of each nucleus, and the particles are continuously accelerated until they momentarily reach the velocity of light; deceleration then sets in, and each particle eventually comes to rest near a distant nucleus, becoming part of its galactic cloud of gas and dust particles. The galaxies are thus continually losing particles to distant galaxies but at the same time gaining particles from other distant galaxies."

These particles, when moving with speeds close to that of light, are known as cosmic rays.

Milne's observations are significant.

The contention of these studies is that without 'organizing' or 'forming' patterns of organization of specific superiority of behaviour of entities themselves in accordance with the law in nature in perpetual competition and interplay, no interchange, acceleration, or any other change or event could occur in the universe. *It should be clear then that manifestations of specific superiority and anxiety-superior are the outcome of this continuous 'organizing' and 'reorganizing' or 'forming' and 're-forming' patterns of organization of entities themselves.* Specific superiority, therefore, never denotes some independent mysterious inherent power such as energy, force, time-space, laws of nature, or other psychic apparatuses.

The other principles embodied in Dialectic Materialism which, according to Marx and Engels, 'must' be accepted by any scientist, consciously or unconsciously, are Unity of Opposites, Change of Quantity into Quality, and Negation, and Negation of Negation.

The theory of Relativity is based on Unity of Opposites. Albert Einstein complied with the demand of Marx and Engels. It is necessary, therefore, to demolish these fictitious assumptions at the same time.

Freedman's reference to the present theory of light, which is supposed to confirm 'unity of opposites,' will be commented on first. Light is but the result of the interplay of competing patterns of organization of entities, and precisely because there is 'no unity' between 'opposed entities' there is 'light.' Let anyone produce light without considering this basic fact. The present theory of light, therefore, does not confirm the 'unity of opposites' principle of Dialectics of Nature.

Haldane⁸ in "New Physiology and Other Addresses" says: "We are apt to accept such assumptions as that there can be no question of the absolute relativity of space and time or matter and energy; and we are accustomed to gigantic amateur philosophical speculations based on such assumptions. We are prone to think of the doubters as rather ignorant and unpractical persons, who have probably never used a chronometer, the theodolite, or chemical balance or calorimeter and have consequently no real idea of the rigid accuracy with which the conception of time, space, matter and energy work out in practice, and of how helpless we should be without it."

To these remarks may be added that, in their papers, some authors use several titles after their names, yet there is often a painful disproportion existing between the scientific value of their work and the expectation these 'titles' evoke. They seem to forget that, in the long run, it is not the 'frame' which counts but the 'picture.'

Einstein's relativity is supposed to reveal the world of harmony by assuming the essential unity of apparently opposed entities, such as mass and energy, space and time. The other way is that apparently qualitative differences are due to differences in quantity, as in the case of matter and field.

It was pointed out in The Ottawa Trial Survey on Personality (1957) that relativity does not exist in nature. "There is a perpetual motion and competition in nature between entities of specific superiority which nullify relativity and forces favouring acquiescence. (. . .) The apparent unity of opposed entities is only relevant to superior entities. As the superior entities dissolve, so does the apparent unity of opposed entities. Thus nature's law ensures unity for the higher development and manifestation of potentials for progressive change and not for relativity."

Further examination will show that the theory of relativity, taken as it stands, is clearly meaningless.

In nature, the myths of unity of opposites, relativity of mass and energy, and the famous $E=MC^2$ evaporate when evidence for them is subjected to scientific methods of analysis.

'Light' and 'energy' then, according to this theory, can be perceived as either imposed upon matter, the same as matter, or emanating from matter. The idea of 'light' and 'energy' as imposed implies their existence independently of matter, but does not shut out their casual abode in matter. The notion that 'energy' and 'light' are the same as matter could mean that all or just some matter is 'energy' and 'light.' By 'energy' and 'light' emanating is meant activities manifested by matter so constituted as to cause such behaviour to be manifested. Then what is relative to what?

Now the question arises as to what is measured. Is energy alone measured, that is without matter and light? Does this measurement depend on the scale used for measuring? Do different scales give different measurements of the same energy? If so why? What is the difference between light and energy? Furthermore, can light, energy, and matter be measured in totality? If so, in what space and by what method? Then where are the unity of opposites and the relativity?

These questions may show that the arguments between classical scientists and those of the quantum theorists about measurement of convergence and the principle of complementarity are irrelevant as they stand in understanding the law in nature. The quantum theorists have rejected causality, as they claim that it cannot be verified in principle. However, as shown here, neither can their principle of complementarity be verified. Anything may then be postulated with impunity by both. Nevertheless the earlier physicists were right in claiming the possibility of verifying causality by experiment.

Unity of mass and energy is supposed to furnish a solution to the many mysteries of physics which had never been accounted for by classical science. To give one example: d'Abro⁵ discussing the nucleus of the hydrogen in "The Evolution of Scientific Thought from Newton to Einstein," explains that a decrease in mass would imply that the combination was accompanied by a corresponding liberation of energy, equal in magnitude to C^2 times the mass that had vanished. The mystery is solved—vanished—and so does the unity of opposites,

relativity, and the two conservation principles into one. An amount of mass disappears. It is because it has been transformed into an equivalent amount of energy. Mass becomes energy without ponderable mass. Mass vanishes. Matter in the ordinary sense is thus annihilated. Is energy alone conserved?

Clearly no one entity can have 'generalized superiority' in nature. So neither relativity nor unity of opposites can exist. If such phenomena were to exist, no progressive evolution could have occurred.

A philosophical discussion on the various principles known as the Einsteinian theories of relativity is here beside the point. His arguments of space-time relativity are not scientific and are even less convincing than those of classical science which he attempts to replace. For example, consider a telegraph pole rising vertically from the ground. The absolute magnitude is not the length of the pole, according to Einstein's theory. It depends on the observer's motion. The absolute magnitude relates to the absolute world of space-time. Well the observer can play hide and seek with his relativity to the pole or other objects. However, he should be careful of his sense perception, as he may find that the stimulus also has its own characteristics and specific superiority.

Von Uexküll¹⁷ in 'Theoretical Biology' discussing space as law writes "The official physical theory stands or falls with the dogma of the absolute reality of space. According to this theory, one object cannot affect another except by means of actual changes in space. The complementary effect of coloured surfaces, however, is nothing of the kind; nothing at all happens in the objective world that could be accounted for in such way. For example, two coloured surfaces so placed that there can be no mutual irradiation, nevertheless influence one another. On the other hand, there are in the subject actions and reactions according to law, which account for the complementary phenomena."

"It is the same with colours: although one coloured surface can irradiate another through space, just as a sound can awaken an echo, and physical changes thereby appear in space, yet these spatial processes tell us nothing about the laws according to which the qualities will intermingle."

17J. Von Uexküll, *Op. cit.*, pp. 32, 52.

Further on Von Uexküll notes: "Just as certainly as that there is no such thing as absolute space time, so also is it certain that there is no such thing as absolute time; for both space and time are merely forms of our intuition."

These are primary data of observations.

The contentions of these studies are that *the awareness of 'change' and 'distance' constitutes one of the most fundamental facts of consciousness, not time and space. Neither 'time' nor 'space' as such exists. The notions of 'time' and 'space' are but aspects and depend on change or distance between entities or matter. 'Time' and 'space' have nothing to do with change and distance. It is always entities or matter which cause change or distance. Thus it is neither 'time' nor 'space' but temporary change or distance between entities or matter which can be approximated in measurement.*

The quantitative character which marks objects in the scientific analysis of nature is extremely important. However neither the statistics of quantum mechanics nor the laws of classical mechanics throw light on the basic law in nature. They are content to measure, to describe, and to assign things to causes, such as 'energy,' 'entelechy,' and 'force,' despite the fact that they could not devote independent cause or power concealed in entities from which activity proceeds. Obviously interpretations of this sort are metaphysical, not scientific. It is unbelievable how far these notions of stuff, especially 'energy,' as a basis of explanation, have been allowed to impede thinking about the behaviour of entities in nature. More of these fallacies will be shown further.

In the third study in this research series on the subject of the same title (1957), it was observed that the continuous interplay and/or lateral competition between entities is the law in nature. These phenomena are invariably the same irrespective of entities, their fields, or patterns of organization in the universe. An entity maintains its specific superiority in combination with other entities. *Therefore, in nature, an entity never exists alone. Consequently patterns of organizational necessity accompanied by change and anxiety-superior are exhibited by matter or entities in their behaviour. Thus, events which occur with changes in matter do not lie in 'energies,' which do not exist in nature.* Changes occur only through the interplay and competition of entities within and/or outside of patterns of

organization. During the process of change anxiety-superior is manifested. This is basically important with respect to all phenomena occurring in the universe. Hence, scientific explanations of measurements or predictions without the consideration of this basic law in nature are not complete and oftentimes are unscientific.

Now turn to the principle of 'transition from quantity into quality' embodied in Dialectic Materialism. The example here given is that at a certain critical point transition from quantity into quality of atomic energy takes place in U235 or plutonium.

Perhaps it is a greater change into 'quality' if it gives 'cheaper' energy than does steam or electricity. However, the most important thing to note is that the transition was only from 'quantity,' which implies that the property of 'quality' must actually have been in the quantity already. If, on the other hand, the quality must be supplied from the outside, then the transition will not be just from the quantity.

Schrödinger¹⁵ in 'What is Life' under the heading 'quantum theory' writes: "... a number of atomic nuclei, including their bodyguards of electrons, when they find themselves close to each other, forming 'a system' are unable by their very nature to adopt any arbitrary configuration we might think of. Their very nature leaves them only a very numerous but discrete series of 'states' to choose from. We usually call them levels or energy levels, because the energy is a very relevant part of the characteristic. But it must be understood that the complete description includes much more than just the energy. It is virtually correct to think of a state as meaning a definite configuration of all the corpuscles."

"The transition from one of these configurations to another is a quantum jump. If the second one has the greater energy (is a higher level), the system must be supplied from outside with at least the difference of the two energies to make the transition possible. To a lower level it can change spontaneously, spending the surplus of energy in radiation."

"But it must be understood," said Schrödinger, "that the complete description includes much more than just energy." A complete description should include the very nature of patterns of organization of the nuclei and of their anxiety-superior in their behaviour. However, the point of interest here is that a transition of a configuration

¹⁵Erwin Schrödinger, *Op. cit.* 49.

to a greater energy must be supplied from outside to make the transition possible. Obviously this confirms the above statement, i.e. quantity alone will not change into quality. Furthermore, to equate 'quality' with 'energy' is meaningless. The truth is that the manifestations of the quality of any given occurrence depend on all the constituents involved, and not merely on those termed matter, energy, or quantity. Also it should be noticed that, *in manifestations of change, in each case there is something contingent too—connected mainly with the patterns of organization of specific superiority of behaviour of entities upon one another.* Accordingly it is concluded that the principle embodied in Dialectic Materialism 'change of quantity into quality' contains a completely untenable assumption.

The principle of negation and negation of negation is not proved by Zwicky's discovery of supernovae-stars which explode with a brilliancy several times greater than that of the sun. A 'new force' has to step in to negate the negation and to guide the events of evolution by pushing and pulling, and stopping the contraction of the stellar body at a mathematical point. Unusual stellar events do not lie in empty schemes based on so-called 'forces' but in the complicated connections and competition of entities' patterns of organization of specific superiority and their interactions. The dialectic principle of negation is thus undoubtedly a blank statement about a complex occurrence in nature.

There is no need to go into the political implications of this doctrine. It is not implied here that scientists in the U.S.S.R. do not contribute to science, but any such contribution certainly cannot be based on the principles embodied in the philosophy of Marx and Engels' Dialectics of Nature.

Woodger¹⁹ in 'Biological Principles' under the subheading 'The categories of substance and causation and their use in modern natural science' writes: ". . . Thus the notion of energy appears to be introduced when we ask what is responsible for the movement or the chemical arrangements of the particles. Temperature changes accompany chemical transformations and we say that heat—a 'form of energy'—is absorbed or evolved. The particles in gases are said to 'possess' kinetic energy which is 'giving up' to the wall of the vessel on impact and manifests itself as heat or mechanical work. Thus over and above the particles and their motions something else seems to be

necessary. This entity is also said to be measurable and so finds a place in the calculating process. But energy cannot be represented in the imagination because it is not a perceptible entity. We see the billiard ball rolling and feel it strike the hand but these are supposed to be the effects of the energy, not the energy itself. Thus we are able to think about energy without being able to imagine it. In other words we possess a concept of energy which can play its part in the exploratory process quite unrepresented by an image in the sense in which we have been using that term. Now the question arises: What exactly has been happening with those entities which could be represented by images? We saw that such images are liable to be misleading, and now it seems probable that they were only representative of concepts, and that perhaps it was these concepts which have been doing the real work of explanation and that the images merely lent an aid to intelligibility in virtue of their resemblances to preceptual things. This is actually the case; material particles and atoms are concepts, and the images we form of them are only misleading representations of them in the imagination. They may even lead to an incorrect use of the concepts."

Further on Woodger notes: "If we drop our images what becomes of 'intelligibility'? Clearly there is more in this question of explanation than 'meets the eye.' Can we expect no more of science than formulae with which we can calculate the course of events, or some of them? We evidently require to learn more about the nature of concepts and their role in thinking."

These are primary data of observations.

The quantum-mechanical law may be used for certain practical purposes. However neither the laws of physics nor those of chemistry throw much light on patterns of organization of entities, their interplay and/or competition with their surroundings. Nevertheless the behaviour of entities clearly shows that they continually form new patterns of organization, not by the whim of chance or of mechanical monotony, but according to the law in nature. Each entity, therefore, represents not merely a machine or fictitious energy for a quantum jump, but has patterns of organization of specific superiority of behaviour. Even if an entity appears to be active mechanically, it can only be dealt with satisfactorily by treating it as an open pattern of organization. As change is the outcome of interplay and/or com-

petition in nature, there can be no capriciousness, such as a machine with energies, quantum jumps, force, or certain chemical principles classified in 'Tables.' Progressive evolution proves this.

The behaviour of atoms or molecules cannot be inferred from elementary quantum-mechanical principles. Therefore the ordinary working hypotheses of physics and chemistry are irreconcilable with that of the law in nature. Like the classical kinetic theory of gases, the modern quantum theory proves little, as the law which is supposed to control the so-called 'quantum jumps' is unknown. These hypotheses may be useful, but they reveal little about the behaviour of entities in nature and only imperfectly.

By reference to some hypotheses about atoms, this can be illustrated. In modern physics an atom is viewed as a mechanical system. The center of the atom, corresponding in position to the sun in the solar system, is the nucleus with positively charged protons and neutrons, around which negative electrons circulate.

The description of the atom as a mechanical system comparable to that of the solar system makes it impossible to determine precisely what exactly this statement means. To bring the aspects of the atom into relation with the solar system, to say the least, is far-fetched. Furthermore, to say that the constituents of an atom have positive and negative electrical charges and that some are not electrically charged is meaningless, as no evidence is given to support this contention.

Isotopes are atoms which are chemically indistinguishable, yet differ in their atomic weight. Ever increasing numbers of them are being isolated. It is said that there are about one to several hundred different kinds of atoms. In a very general and dubious way it is explained that the inner electron arrangements are different, but that does not mean very much as far as chemical characteristics are concerned.

The arrangement of the outer electrons alone decides in which pigeon-hole an element should be in the Periodic Table, as the atoms refuse to show their interiors. The interiors of the atoms are therefore not considered.

Both positively and negatively charged atoms are called ions. It is postulated that, because particles that have opposite electrical charges attract each other, positive and negative ions tend to unite.

What is the difference between opposite electrical charges? Why should one be negative and the other positive? Why should they attract and unite if they oppose each other? The fact is that there are as many different kinds of electrical charges as there are interplay and/or competition between entities of specific superiority. In other words, negative and positive electrical charges are only ideal fictions. It is impossible to predict on electrical principles alone the transformation of entities.

Schrödinger's statements about the quantum theory are again referred to. A number of atomic nuclei, when they find themselves close to each other forming 'a system,' are unable by their very nature to adopt any arbitrary configuration we might think of. Their very nature leaves them only a numerous but discrete series of 'states' to choose from, a state meaning a definite configuration of all the corpuscles.

"The transition from one of these configurations to another is a quantum jump. If the second one has the greater energy (is a higher level), the system must be supplied from outside with at least the difference of the two energies to make the transition possible."

Such terms as 'system,' 'discrete,' 'configuration,' 'higher level,' 'lower level,' 'sub-sublevels,' and 'quantum jumps' are mostly meaningless as they usually refer to single processes and disregard the truth that in nature so-called 'closed systems' do not exist.

An exhaustive total representation of the complex mutual relations prevailing in all the corpuscles by means of a single statement such as 'configuration' is virtually impossible. Energy gain or loss makes the transition from one 'configuration' to another and either pushes or pulls the 'quantum jumps' up or down. What happens to the energy differences necessary to 'lift'? Are they also included in the 'quantum jumps?' The basis of the quantum theory is linked with 'discreteness' of the level scheme. From a scientific point of view, an entity can never occur as a completely 'discrete' definable 'thing,' as there is no closed system in nature and because of the continuous internal and/or external interplay and/or lateral competition between entities.

Atoms in excited states are governed by a law usually called 'the law of chance.' This law is supposed to explain drops to lower states and that of radioactivity. Excited states, however, differ from one

another in the same atom, and also vary with the atom considered. A mysterious agent with some sort of influence on the drops, postpones the life of the excited atoms for a while, so radioactivity and the probability of a drop are related magnitudes.

The vagueness of quantum mechanics is already evidenced. This vagueness becomes more obvious with its 'uncertainty relations,' and its lack of knowledge of 'excited states,' which play such an important role in atomic theories. Where does physics, chemistry or any other branch of science contribute anything to the understanding of the norm from which 'excited states' take their point of departure? What have quantum mechanics to offer on the whole subject of 'excited states'? Are they jumps with the necessary energies? But the energies provided are also in 'excited states.' The whole theory is something like that of the 'Stimmung' and 'Unstimmung-phänomen,' except that the linguistic expressions are changed for their explanatory value.

A brief comment on the so-called 'Cherenkov Effect' may be made. This hypothesis postulates that light is emitted from an electron and from any other electrically-charged particle that moves in a medium with a velocity greater than that of light in the medium. The effect is claimed to be important for all problems concerning the motion of high-energy particles through matter.

That light is emitted from an electron and from any other electrically-charged particle moving in a medium with a greater velocity than that of the light in the medium is untenable. If the medium has light, its particles also must be electrically charged; otherwise it would not have light at all. Apparently the Cherenkov detector does not record the velocity of the light of the electrically charged particle, as it takes no cognizance of the interplay of the constituents in the medium.

Atoms are entities with a tremendous variety of patterns of organization with rapid changes, with innumerable nuances, and with immense degrees of patterns of organization of specific superiority of behaviour. Now, bold statements such as positive and negative electrical charges recognizable in and around the nuclei and energy jumps are correlative to all these seems to the student of nature and of behaviour to be almost ridiculous.

Entities' patterns of organization and their 'excited states' are not examinable only by 'energies' or 'electrical charges.' This, in brief, is the gap which parts nature and physics or chemistry. No energy jumps nor running round the cycle of positive and negative 'electrical charges' will bridge the rift, however useful these imperfect representatives may be within certain limits.

After many elaborate steps have been taken to break up uranium, a somewhat stable poisonous lead atom appears. This further shows that entities have patterns of organization, and consequently their behaviour can only be expressed in terms of these patterns and their interplay upon one another. Close observation of the atoms clearly reveals a continuous competition and interplay in maintaining their patterns of organization. *The actual properties and behaviour of atoms, therefore, can only be understood in terms of their patterns of organization of specific superiority and their anxiety-superior with various other entities.* The reality behind the behaviour of atoms is the law in nature and is obviously far more than energy, schematized atoms, physics or chemistry.

Hartley⁹ under the heading, 'The Two Partnerships—Man With Man and Man With Nature' at 'H.R.H. The Duke of Edinburgh's Study Conference on the Human Problems of Industrial Communities Within the Commonwealth and Empire" observed: "Nature is not an easy partner. When you try to change her ways you must watch her reactions very closely with all the help that Science can give, and she does not reveal her secrets easily."

"There must be no arrogant assumption that man can control Nature. He can in some measure change his environment if he keeps in step with Nature, but sudden interference with her ways with her rather savage rule of the survival of the fittest, may bring retribution."

Further on Hartley notes: "Atomic energy is now in the stage of large-scale technical development which will show which are the most efficient designs of atomic piles and what their economy will be. This involves many difficult technical problems. It requires new standards of reliability and accuracy in engineering that have never been needed before. (. . .) When we disturb the nucleus with a neutron to convert matter into energy, atomic power as we call it, Nature hits back in the form of those radiations which constitute the great danger and many

⁹Sir Harold Hartley, Op. cit. 159-163, 416.

of the difficulties of the atomic power station. Again the result of interference with Nature."

These are important observations in reference to nature.

Yes, there must be no arrogant assumptions that man can control, master, dominate, or possess power over nature through elevating so-called 'energies' to 'generalized superiority.' Concepts such as force and energy may be useful for the advance of technology. Yet they throw little light on the behaviour of entities in nature. Their values, therefore, fluctuate as they lack the desirable degree of clarity of science. To compensate, a great number of private laws and principles are enacted. Among them the principle of 'entropy' is considered of great importance. Any supply of heat increases entropy as it destroys the neat and permanent arrangements of the atoms or molecules. The energy is thus constantly degraded and entropy increases. The two principles, that of degradation and that of conservation, do not conflict according to physics. In quantity the energy is conserved; it is only in quality, in potentiality, or in ability to perform work that it is degraded. In explaining entropy, Schrödinger¹⁵ in "What is Life" said that it is a fundamental law of physics as the natural tendency of things is to approach a chaotic state.

The questions may be asked. What is the difference between change and entropy? Is every change entropy? What is the difference between heat and energy when heat increases entropy? Does energy degrade energy? Is heat the only reason for entropy? What does energy mean without quality, potentiality, or ability to perform work?

The movements of the molecules in all three states of matter are not caused by the inherent heat energy of the molecules. Heat is produced according to the law in nature, that is through the interplay and/or competition of the entities or molecules themselves, and there is no other way to exchange matter from one state to another. Apparently the principles of entropy do not hold even if an entity is falsely regarded as a closed system, let alone if the entity is considered with its surroundings and thus a larger section of nature.

Sherrington¹⁶ in 'Man on His Nature' under the subheading 'Earth's Reshuffling,' writes "A progressive change which could be shown to have produced the novel and then scrapped it, and produced the more novel, and then scrapped that, and was still going

on in like fashion generating and trying-out the novel, without halting, must be doing something which 'leads somewhere.' That was a conception antiquity had not reached. Their factual knowledge was not adequate to it."

These are meaningful observations.

It is shown that, in atoms and molecules, entities are united in a neatly arranged pattern of organization in fairly complex and permanent relations with one another and with the surroundings in the form of a not too simple open system of distinct structure. The laborious scientific explorations and difficulties encountered in splitting atoms is a clear proof of this. To claim that energy alone is the underlying cause of all changes in matter or that energy is the ability to do work or to cause changes is false. This long-sanctioned doctrine is not demonstrable by observation. If energy as such would exist in nature and would have generalized superiority to cause all change, the inevitable result would long ago have been a universe containing only 'static energy.'

Chemistry endeavours to observe more closely what happens when a substance is in intimate contact with other substances and therefore throws somewhat more light on the nature of reality than does mechanical physics. The importance of catalysis is recognized. However the nature of this phenomenon is not explained nor is there any generally accepted theory about it.

A brief remark on this topic may be made to further elucidate on the phenomena under investigation. Since each entity has its own specific superiority in nature, it is undoubtedly characteristic for all entities or substances to act as catalysts. The ability of an entity to cause catalysis depends on the patterns of organization of each entity. When the patterns of organization of an entity *threaten* those of another entity or entities, they develop anxiety-superior and their patterns of organization change or temporarily restrain from activity. Thus patterns of organization of specific superiority of behaviour of *each* entity concerned are maintained, and further interplay or competition for patterns are ensured irrelevant of the form. Terms such as 'diffusion,' 'movement,' 'viscosity,' and 'velocity' are only aspects of the interplay and/or competition between entities' patterns of organization.

Evidently the peculiarity of events in entities or matter does not lie in simple 'mechanics' or hypothetical 'energies' but in the complicated patterns of organization of entities, their perpetual interplay and/or lateral competition within and/or from outside. Thus, 'generalized superiority' is destroyed as changes of patterns of organization of each entity occur accompanied by anxiety-superior. It becomes clear that, in nature, terms such as 'energy,' 'force field,' 'aura,' 'quality,' 'capacity,' and 'potentiality' are meaningless without patterns of organization of specific superiority of behaviour. Furthermore, events never occur, require or depend on various physical, chemical, or other private laws and principles, but according to the law in nature only. It follows that the specific superiority of living organisms too is no free-floating 'absolute superiority' but is strictly bound to the same law in nature. Before making further use of this fact, a stop may be made at this point to review the discussion briefly.

To recapitulate, the philosophy of Marx and Engels interpreted nature metaphysically. Some of their magical ideas, which frequently occur in their expositions, such as 'unity of opposites,' 'transition from quantity into quality' and 'negation and negation of negation,' proved intrinsically unstable. It is shown that these slogans, if divested of their extrascientific connotations, reveal themselves as empty schemes. The artificial mechanism of dialectics does not fit the processes that occur in nature. Obviously it is absurd to use it as a principle for the 'explanation' of everything.

Albert Einstein's concepts of 'energy,' 'light,' 'unity of opposites' and 'space-time relativity' are but images. After these images are pushed aside, the above concepts prove to be incorrect and misleading. Science certainly does not need ghosts.

The contribution of physics and chemistry to various practical needs is not doubted. Their great merits have been the introduction of calculation and the investigation of chemical changes. However, it is clear to the student of behaviour that understanding the nature of the universe is just as vital as technological or economic factors for the survival of a society.

It was shown that modern physics and chemistry are more concerned with single processes and their calculations than with the nature of entities. Consequently explanations are clothed in mathematical and word symbols. Mutual relations of the processes to all other

processes are deliberately ignored or simplified by symbols such as 'quantum jumps,' 'configuration,' 'discrete,' 'system,' 'entropy' and 'mechanism.' These conceptions of nature are not only antropomorphic, but natural processes are deciphered through these symbols as disorderly and leading to a chaotic state. These concepts certainly do not throw any light on the cause of events or the understanding of nature.

When dealing with atoms where patterns of organization of specific superiority of behaviour clearly reveal themselves, 'energies,' 'forces,' and 'mechanisms' are naïvely talked about, even when they do not relate to the immediate facts observed in nature. Obviously explanations of this sort are animistic and metaphysical. According to the doctrine of physics, all vital phenomena are produced by 'material souls' distinct from matter, such as 'energy,' 'force,' 'light,' 'heat' and 'electricity.' These 'material souls' are attributed to living and non-living entities alike and devote independent powers concealed within entities from which all natural phenomena are supposed to proceed mechanically. These hypotheses do not conflict with the demands of craftsmen and technologists nor with traditional materialists. Nevertheless, as has been pointed out, they do conflict with scientific truth and with the understanding of behaviour of entities in nature. Furthermore technology itself could not have developed if that which materialists claim would be true.

No attempt will be made to discuss old fashioned quarrels which rage about the differences between living and nonliving entities or mechanisms and anti-mechanisms. All of the quarrels seem to spring from the lack of knowledge of what is involved in the important concept of open entities in nature for both living and nonliving. Consequently it was emphasized that nature is constituted of entities with patterns of organization of specific superiority of behaviour, and that there is a perpetual interplay and/or lateral competition within and/or outside patterns of organization in nature; otherwise nothing could evolve or change, nor could progressive evolution have occurred. Obviously mechanisms or other formulae are eliminated. It would be ridiculous to maintain that any living or nonliving entity within nature could have 'generalized superiority' to impose any law. Whatever the nature of an entity might be, scientifically it must be treated as having 'patterns of organization' and not as if it were a 'machine.'

Sherrington,¹⁶ under the subheading 'Earth's Reshuffling,' writes: "The animate and the inanimate as we have seen are in their ultimate parts alike, and fundamentally so in the principle of their construction. When we systematize, the animate falls unconstrainedly into series with the inanimate. The animate then becomes merely a special case within the more general. Analogously, the whole series of the carbon compounds taken within the chemical system is merely a special case within the more general."

Further on Sherrington notes: "Mere increase of the number of the constituent units need not itself however carry far. (. . .) Organization with differentiation of component units for this and for that, and at the same time co-operation between them one with another so as to serve the unified composite life; that is the kind of complexity which evolution shows to be the more significant."

These are meaningful observations.

Then the question may be asked: What distinction can be made between living and non-living entities if both have patterns of organization of specific superiority of behaviour and obey the same law? The crux of the problem is that *living* entities continuously *organize* their patterns of organization to survive while nonliving entities continuously *form* patterns of organization to exist. Thus, despite the fact that nonliving entities resemble living entities in having patterns of organization and obey the same law, they do not offer an analogy with living entities.

In accordance with the law in nature, there is among living and nonliving entities a perpetual general mutual exchange, interplay and lateral competition of patterns of organization of specific superiority to survive. Therefore anxiety-superior is manifested by all entities in their behaviour. These facts are basically important with respect to everything in nature; whether it be motes in a sunbeam, the tides of the ocean, or the silent omnipresence of the stars. Thus, the law in nature ensures freedom for each entity to maintain patterns of organization of specific superiority of behaviour and to contribute to the underlying unity for creation and progressive evolution. Consequently evolution along the progressive lines represents collateral but independent processes of living and nonliving entities irrespective of what the entities' structures or behaviour might have been. In the evolution of living and nonliving entities it will thus be seen that progressive

evolution does not come from chaos but from orderly progressive change, not at random or mechanically, but according to the law in nature through interplay and competition 're-forming' and 'reorganizing' of entities themselves.

To reiterate, life is *to organize* not just organization. The fundamental difference between *to form* patterns of organization and *to organize* patterns of organization can be discovered in any phenomenon. Therefore the question is not only organization but *to organize* continually patterns of organization to survive. This furnishes a bond between all living organisms. When this ceases life ceases and the organism becomes a nonliving entity. So-called 'living matter' does not exist in nature. Nevertheless it must be remembered that both living and nonliving entities obey the same law and that, in nature, they are treated in the same manner.

It is noted that there is not a principle, theory, or law in physics or chemistry peculiar to entities of the vital level of organization for behaviour and their anxiety-superior in nature. Can psychology, biology or physiology aid in dealing with this?

No subject is to such a degree choked up with unlimited theorizing, clouded by eccentric speculations, or made the battleground of differences of opinion as is psychology. Added to this, psychological research is more often exposed to selfish interests, economic and political pressures, and wishful thinking, than is any other research. Oftentimes modern psychological theories are expected to become practical politics or some sort of totalitarian or authoritarian philosophy. No wonder that agreement rarely could be reached. In fact the various cliques do not recognize each other, and some hide publications that disagree with some of their metaphysical interpretations of the behaviour of living organisms or their magical ideas.

More often psychologists approach nature, not as pupils eager to learn, but as self-appointed judges. There is, for instance, the state of 'anxiety.' Excessive anxiety is perhaps one of the most potent disorganizers of living organisms. But what has psychology to offer on the subject? It has given various formulae and some observations, mostly based on abnormal psychology. A classical example of this is the 'tension' hypothesis on which the theoretical orientation of most psychological notions of 'anxiety' is based at present. This so-called 'tension' theory is the revival of libidinal instinct or energy based on

Freud's analyses of hysterical 'Anna O' which, in various guises, still plagues psychology.

Freud accepted Marx and Engels' Dialectics of Nature. Negation, and negation of negation is represented by ego, id, and super ego. Like Marx, he was not interested in understanding nature but in changing it. In his analysis and diagnosis of 'Anna O' he dismissed the greater part of the living human organism, including the cerebral cortex, and brought in fictitious elements. He claimed that, with the combination of these elements, the anal-urogenital orifices with their libidonal energy are the sole masters of living organisms.

Is hysteria or neurosis the affection of the uterus alone? Have the brain and the rest of the organism nothing to do with it? Do all phenomena or thought spring from the anal-urogenital orifices? Is thought libidonal energy? Is every new thought an intra-uterine phantasy? Furthermore there are thousands of hysterics and neurotics who do not inhibit their sexual feelings and yet are hysteric and neurotic.

Freud made it clear in his "An Autobiographical Study" that the practice of psychoanalysis is for 'laymen.' The school now advertises that it has Doctors' degrees for every square inch in the field suitably purified. The hypothesis of 'libidonal energy' based on the analysis of hysterical 'Anna O' acquired the authority of an article of faith, which was spread abroad by the lesser deities under the title 'tensions project.' When material is gathered on the basis of the 'energy of the instinct of the libido,' the living human organism becomes a biological absurdity. The tremendous amount of 'literature' for popular and scientific consumption which has been written with this fallacy as a basis is unbelievable.

It is interesting to note here that, despite the fact that the Freud and Einstein theories are mainly based on the philosophy of Marx and Engels, the Marxists dismiss both hypotheses. Why? Is it because of their destructive effects?

But a student of anxiety is extremely interested in the behaviour of normal living organisms. What an individual observes in the mental hospitals is a perversion of the normal that another living organism tries to restore. For the science of behaviour it is necessary to understand life in nature. This and previous studies on this subject show how important these phenomena are. But new theories are

covered with abuse and irrelevant misrepresentation. Psychology keeps on returning to a variety of ancient formulae of abnormal psychology or philosophical speculations.

The most recent example of this is that not only anxiety, hysteria, and neuroticism, but everything can be explained in dimensions of introversion-extroversion based on the concepts of inhibition and excitation as originated by Pavlov.

It is impossible to set up any true dichotomy in nature. What about in between? Where is the borderline? How are excitations changed into inhibitions and vice versa? How about the same reflex for different causes? For example, a dog secretes saliva when eating, but he also secretes saliva when he sees a friend whom he expects may give him something to eat.

Sherrington,¹⁶ referring to conditioning, notes "‘Reflexology,’ as it is called in Russia, becomes a science of men on which the state leans. In ‘reflexology’ Descartes would find Ivan Pavlov of Petrograd his greatest successor."

"Robert Whyte, here in Edinburgh, showed how the frog's spinal cord per se without the brain sufficient for many reflexes."

Furthermore, what are the causes of introversion-extroversion? Are the characteristics of life, such as to organize, to change, to learn, and to differentiate, simple two-termed relations? Over and above, the truth is that individuals vary, and therefore identical situations mostly mean different things to different persons irrelevant of dimensions. Then what has introversion-extroversion to do with states of anxiety, their duration, learning, differentiation, and so on? This is another instance of difficulties of the 'secondary qualities.'

The attempt to analyse living organisms into dichotomic mechanisms is probably one of the most colossal failures in the history of psychology.

Anxiety is described as a basis of various emotional states such as trouble, solicitude, and mental distress, but cannot simply be identified with any one element. In addition there is the old quarrel between the physiological psychologists, the so-called psychodynamicists, and the psychological psychologists in describing anxiety. Concepts such as frustration in achieving a goal, needs, and drives are sought to explain anxiety. Definitions and terms as aggression and tensions frequently accompany these ideas, so that they may become more 'picturable' without giving any special value to these statements.

There can be little doubt that, to achieve certain goals or to satisfy needs of living organisms is of great importance. But when the investigation of the cause of anxiety is impeded by such abridgements and delimitations as motor discharge tension, task tension, frustration, cost, drive to dominate, prestige, self-realization, self-esteem, and self-regard, the study of the nature of behaviour and anxiety becomes metaphysical and leads to absolutely nothing.

Some psychologists, who lecture on television and radio and write articles for popular and some scientific consumption, express themselves as though they really believed that, if goal or need responses would not suffer interference by society, there would be neither anxiety nor aggression. They also make it appear that achieving a goal is a mere motor discharge of tension, and that consideration and affective contact would eliminate anxiety for self-realization or self-esteem. Then again, it is postulated that confidence, knowledge, and drive are all that is needed to achieve goals and release tensions. These mixed conceptions are then unpalatably sprinkled over with notions that non interference in sex relations and masturbation, would do away with all aggressive responses and anxiety. This sort of thing results from not understanding the law in nature and the biological origin of the anxiety-superior of living organisms.

How is it possible to make the above terms precise in determining what exactly they mean? While they are supposed to give expression to aspects of living organisms, not one so much as approaches anxiety in the nature of organisms. In achieving goals or needs, how long will confidence, drives, self-esteem or self-regard last, or how will knowledge control behaviour without patterns of organization of specific superiority of behaviour? How can distinctions be made in achieving passive, active, or neutral goals or needs? Which feature should be called the cause and which the effect of anxiety, interference, self-actualization, and sex, or needs and goals?

The goals and needs themselves cannot be the cause of anxiety. Adler¹ had a glimpse of it when he contended that "every neurosis can be understood as an attempt to free oneself from a feeling of inferiority in order to gain a feeling of superiority."

The goal itself cannot be the cause of the neurotics quest, for his problem, to reach the end of his quest, can never be satisfied, his problems are never completely solved and his skill is never perfect.

"These unsupportable feelings of inferiority arise that I have found among all neurotics and psychotics."

"Whatever toxins are found in the neurosis and psychosis become effective only through the intensification of the feeling of inferiority."

These are primary data of observations.

The reality behind anxiety is evidently far more than just to succeed in reaching goals, whether the success is achieved by various deceptions or through injustices.

"The brutal materialism in our civilization" writes Carrel "not only opposes the soaring of intelligence, but also crushes the affective, the gentle, the weak, the lonely, those who love beauty, who look for other things than money, whose sensibility does not stand the struggle of modern life."

Nevertheless, in the final analysis, the law in nature prevails.

Despite the fact that Adler's observations were a great advance in the subject, his aloofness from the biological origin of organization left the approach to anxiety still in a plane with the 'humours' of medieval medicine.

Physiological psychology has little to offer about the nature of anxiety. It has occupied itself with the lower levels of nervous actions. Some results of general value may have emerged.

This, in brief, is the gap which parts psychology from the understanding of the behaviour of living organisms, and their anxieties in nature. No running round the cycle of 'goals,' 'self-realization,' 'sex,' and 'their frustrations' will take it across the cleft.

Probably never were psychological studies more industrious than they are today. It is not intended to belittle the labours of psychology. These efforts may in their proper place yield some results without cheapening and misusing them. There is important work to be done.

Questions on behaviour and on anxiety of living organisms can only be decided on biological evidence. Progress is delayed when the student of behaviour in nature awaits the uncertain guidance of the various disciplines of science.

Biology goes somewhat deeper into the nature of reality than do other sciences. Nevertheless, to make use of some of the generalizations presented by biology, they will have to be reinterpreted in the light of new facts revealed in these studies.

Most mechanists and finalists seek to explain all organic events, even regenerative processes, by 'adaptation' or 'adjustment.' Sometimes new formulae are introduced such as G.A.S. (General Adaptation Syndrome) and L.A.S. (Local Adaptation Syndrome) in which they see a special 'principle' at work in living organisms. If these concepts are stripped of their trappings and embroidery, they remain a sort of authoritarian philosophy mixed with mechanistic speculations.

Woodger,¹⁹ in 'Biological Principles,' writes: "There is no such thing as adaptation if by that you mean a state, because a living organism never is in a state since temporal differentiation belongs to its very essence. But there are relatively stable or pervasive features in the environment and what we call adaptations of structure are the visible appearance of fixity or organization in correlation to such pervasive environmental features. Such 'stagnations' in the organization and mode of characterization of the complex of events which is known as the living organism, and habit formation in the psychological sphere, are examples of adaptedness with loss of plasticity. If we could believe that such stagnations arose in the first place as biological responses which became incorporated in the rhythm of the race and persisted in virtue of their success we might find a reconciliation between Darwinism and Lamarkism. But such speculation must, it seems, ever remain beyond the reach of empirical verification and will therefore perhaps always belong to the realm of faith."

These are primary data of observations.

The most general statement about adaptation, for example, is that living organisms 'survive' because they 'adapt' to their environment. If asked how, the answer generally will be that organisms are adapted to their environment in such a way that, in spite of the persistent 'threat' to their existence, a maintenance of the organic forms is guaranteed. How are the persistent threats met and overcome? How are the disturbances to the maintenance of organic forms guaranteed? Is it by continuous struggle or defence? If so, is adaptation or adjustment the same as struggle or defence? Are regenerative processes 'adaptation' syndromes? Furthermore, if struggle or defence is adaptation or adjustment, is struggle or defence as such sufficient to adjust, to adapt or to survive? Then why do living organisms perish at a certain age?

According to these studies, Woodger's contentions find their support in the law in nature. From a strictly scientific point of view, neither living nor nonliving entities can exist in nature as closed systems. Consequently the terms 'adaptation' and 'adjustment' become meaningless in nature.

Nature is constituted of open entities with patterns of organization. Accordingly there is a persistent and continuous general mutual exchange, interplay, and competition both inside and outside of living and nonliving entities' patterns of organization. Thus living organisms organize continually to maintain their patterns of organization for continuous change and differentiation. Naturally these perpetual disturbances are accompanied by anxiety-superior.

Obviously, in these struggles, the primacy to organize to maintain patterns of organization of behaviour to satisfy needs of living organisms is a biological necessity for survival. The natural anxiety-superior which goes with these continuously changing struggles is basic. Accordingly the variation of anxiety-superior is of compound origin, and so are the excesses of variation which are called abnormal. However they differ neither in principle nor in character. Both are in the same class of biological phenomena. There is no need here to discuss or to survey the usual classification of abnormal phenomena based largely on descriptive and superficial aspects.

The basic need of living organisms underlying all other needs, motives, goals, and drives is continually to organize entities or matter for patterns of organization of behaviour, such as differentiation, defence, and change, not adapting or adjusting. In the evolution of living organisms will be seen a progressive evolution of order. For development to occur, life has to organize. Thus life is to organize continually patterns of organization of specific superiority of behaviour and change, and not to adapt nor to adjust.

Clearly these phenomena are an immense natural situation much older and far wider than mechanistic 'adaptation' and 'adjustment' can embrace. It was a law in nature before speculative terms such as adaptation and adjustment came to be. It is extraordinary how these terms have been mixed up with questions with which they really have nothing to do. But a philosophy which attempts to treat living organisms as closed systems is destructive and would lead to their elimination from the earth. However, interplay and competition put

an end to 'generalized superiority.' Thus, any effort in this direction is futile.

Butler² in 'Man is a Microcosm,' notes: ". . . the coalescence of physics and chemistry with biology is now an established fact and the science of life becomes neither physics nor chemistry nor biology, but an inextricable mixture of all three. It does not require much foresight to see in all this the beginnings of a new era in science."

Yes it is true, if it is not based on concepts or notions, whatever their utility might be, such as energy, force, and mechanisms. It was shown that these terms are metaphysical as they do not throw any light on behaviour of entities, on their anxieties, or on life. A student of life cannot go far in his subject without understanding these phenomena. Physics and chemistry do not explain life, not because it is outside of their domain, but because the law in nature is not taken into consideration or is dismissed. Yet biology makes generalizations borrowed from these sciences, and treats the living organism as mass, matter, and energy, or force and mechanism. The most general statements about the state of living organisms are specially concerned with the mutual energy relations within and between organisms and the environment. The literature has many such examples. A few excerpts will be given here.

. . . energy is required by the developing organism to sustain processes.

. . . development requires, first, the unspecific activation of energy.

. . . the inherent growth energy.

. . . energy instead of being free, and able to do the work, becomes useless energy.

. . . free energy needed for syntheses . . . converting, transporting and storing energy.

. . . photosyntheses, accumulating free energy, . . . sun's energy.

. . . inherent heat energy of the nucleus.

. . . using energy derived from metabolic processes.

. . . large amounts of energy are continuously being transformed from one form to another.

. . . heat is the background against which the other displays of energy.

. . . the chemical and molecular forces . . . kinetic energy . . .
potentive energy . . . reactions take place within a specific structure,
a cylinder and a piston or a coil and a rotor.

. . . transforms molecular energy into other forms of energy.

. . . degraded energy in the form of heat.

. . . muscle is like a machine . . . one's the energy-yielding re-
action, like steam in the steam engine, the burning fuel in an internal
combustion engine, or an electric motor.

. . . it is the lowest common form of energy.

. . . energy is used by living organisms in much the same way as
in the boiler.

. . . like the whirlpool or the candle flame a steady stream of
energy.

But, as Woodger asks: "If we drop our images what becomes of
intelligibility?"

This will serve as an elementary example of the kind of 'blinding'
influence which the notions of energy may have on understanding the
law in nature, the behaviour of living organisms, and their anxieties.
These notions cannot do more for biology than they do in the sciences
from which they originated.

To investigate the physico-chemical structure or processes in
living organisms is extremely important. However it is useless to
appoint fictitious elements with generalized superiority such as energy,
force, or some sort of substance, as the solution or key to the under-
standing of life. These elements are supposed to guide the events in
the universe by pushing and pulling all of its constituents in a
mechanistic way, but in a random fashion. Then, after eons of time,
according to the law of probability or chance, these machine-like
activities produced another machine. Thus, after millions of years
of flipping heads and tails, a head turned up at least once and so the
spontaneous origin of life. Just like that. After this a peculiar
competition had arisen among coazervates—according to Oparin. No
other energies could stop living matter afterwards, despite the fact
that they also are supposed to depend on and be identified with
energy. So living matter came about from nonliving matter with the
same mechanism. According to A. I. Oparin and G. Wald 'time' was
with the 'head' or with the 'coazervates.' But what would have been

the outcome, 'time' or 'no time,' if the flipping would not have been carried out? Furthermore who did the flipping? Also, what happened to Marx and Engels' *Dialectics of Nature* in the intervening period? Besides Oparin dismisses the truth—nonliving matter also has a high degree of organization. Thus high degree of organization alone, even with chance as an arbiter, would not be sufficient for primordial life to emerge as a new dimension in nature. Obviously matter perpetuating its own organization is not sufficient and does not mean life; neither could it produce progressive evolution, whether living or nonliving.

There is no necessity here to ask questions. It cannot be denied that in most cases the various energies, forces, and electrical actions, which are used for explaining life or problems of behaviour of living organisms, are fictitious, and disappear altogether when actual facts have to be represented. They may be used for temporary calculations, but they remain fictitious.

Woodger,¹⁹ in 'Biological Principles' notes: "Even energy and its various 'forms' are apt to be conceived as stuff—as when people speak of it as passing from one thing to another, or as being 'stored up' in the carbohydrate molecule, ready to be 'released' in the metabolic processes of organism."

It would be easy to find abundant instances of the consequences of the errors which follow from 'energy' notions. If all the manifestations of living organisms are of some form of energy, how is it that there is nothing that man can do unaided by his brain, yet the manifestations of the brain cannot be expressed in terms of energies?

Carrel,³ under the subheading 'Body and Physiological Activities' writes: "Intellectual work, strange to say, does not increase metabolism. It seems to require no energy, or to consume a quantity of it too small to be detected by our present techniques. It is, indeed, an outstanding fact that human thought, which has transformed the surface of the earth, destroyed and built nations, discovered new universes in the immensity of the sidereal spaces, is elaborated without demanding a measurable amount of energy. The mightiest effort of our intelligence has incomparably less effect on metabolism than the contraction of the biceps when this muscle lifts a weight of a few grams."

Obviously manifestations of living organisms could never be directed by energy, as in a machine, nor can they be just some form of energy-transformations. It follows that the inner physico-chemical structures do not determine the cause of vital processes and the physiological behaviour of living organisms. Physico-chemical structures or organizations in themselves do not reveal 'life.'

Sherrington,¹⁶ in 'Man on His Nature,' under the subheading 'Life in Little' notes: "... nothing which the chemical system of the cell does not itself carry through, as chemistry. It can be conducted in absence of 'life' in a test-tube in the laboratory."

"But the cell seems to choose some particles by preference. As a specialized chemical system the cell will react differently to particles chemically different. (. . .) Their behaviour is not confined to indifference or attraction; it includes avoidance. (. . .) That is verified by fact."

Sherrington's statements are verified by facts. Precisely because of these facts, life cannot simply be identified with any one fictitious element or substance. In living organisms the physical and chemical processes and their manifestations are caused by life. After life ceases both these processes and their manifestations change. This can also be verified. Thus life cannot be conceived as placed upon, the same, or emerging from various forms of energies. Therefore it is impossible to predict the manifestations of living organisms on mechanistic principles.

Butler,² in 'Man is a Microcosm' discussing "Mediators between the living and nonliving" writes: "Our picture of the smallest, though perhaps not the simplest, of all living cells is thus already one of a complexity which the mind finds difficult to grasp—a veritable microcosm. How all these separate and complex molecules are packed away in a tiny fragment of protoplasm, how they work in harmony with each other, producing that result which we recognize as the life of the organism; we hardly know. . ."

The importance of the cell to the problem of understanding the behaviour of living organisms was emphasized in the "Trial Survey on Personality" under this same title (1957). Life can be conceived only as 'to organize' perpetually patterns of organization of specific superiority of behaviour to survive. This phenomenon is basic to life, whether life or to organize can or cannot be identified with any

one material element of living organisms. Nevertheless the contentions of these studies are that no entity exists as a closed system, nor can it have generalized superiority in nature. Life simply represents an open entity to organize and cannot operate *ab extra* upon other living or nonliving entities; nor can other entities or materials be imposed on it by a vital principle *ad hoc*. Thus life is constantly to organize patterns of organization of specific superiority of behaviour, such as for freedom, competition, defence, interplay, learning, and changing to survive.

The excellent investigation of Rubner shows that a starving organism will fling its own structural substance into the balance, and in this last desperate effort to maintain the metabolism, the introgenous oxidation again rises to an amount which temporarily compensates for food. When death from starvation finally comes, life still keeps on trying to organize.

Evidently life is an independent open entity and retains its individuality to organize. Thus, no matter how important other entities, materials, or surroundings are, without life to organize, living organisms could not exist. Life itself has always been an individual entity. If it would be various matter and energies, it would not be life, as life can be only individual. It follows that life is an individual entity to organize and as such has nothing to exchange with the environment, and there are no live chemically or physically definable things which enter or leave living organisms. Notwithstanding, life is an open entity and it cannot have generalized superiority concealed within organizations from which special activity proceeds. It has to organize patterns of organization of other entities or matter to manifest itself.

Butler,² in 'Man is a Microcosm,' writes: "It is an extraordinary fact—and an unexpected one—that the simplest organisms seem to be provided with enzymes which are very similar to those of the higher organisms. Life, in the simplest forms which have survived to this day, has practically all the types of enzymes which we find in the higher animals."

"In fact, as we have seen, the simpler organisms, in order to live, have to carry out a greater range of chemical actions, so they are very rich in enzymes."

This extraordinary fact further proves the above contentions. Enzymes, catalysts, or promoters, as they are variably called, represent combinations of chemical compounds or physico-chemical organizations. Enzymes are organized only by living cells and not by fictitious aura or energies. It follows that no matter how definite the physico-chemical structure, organizations, or so-called 'configurations in space,' these enzymes might be by themselves, that is without life continuing to organize them, they cannot manifest the same behaviour or chemical transformations but can only *form* patterns of organization. Thus life is strictly an individual entity to *organize* patterns of organization of specific superiority to manifest itself. Other entities may *serve life*, but obviously *cannot become part of life nor manifest it*. Life and various patterns of organization of living and nonliving entities, their behaviours, and anxiety-superior cannot be comprehended on the basis of blind forces.

Individual living cells constitute the most important patterns of organization that are organized by life. Through these patterns life manifests itself and maintains its specific superiority for behaviour. These patterns are open, meaning also that their constituents are organized from elements of their surroundings. When these patterns through interplay and/or competition are destroyed, life stops manifesting itself. Thus 'generalized superiority' is eliminated. Nevertheless, being an open entity, life is rendered independent to organize. So both 'life' and 'death' are eternal in nature.

The significance of cells is recognized in the literature of biology. There are many observations relevant to the phenomena under investigation. Some examples were given in previous work and a few more here will suffice.

Hoffman,¹⁰ in "The Life and Death of Cells," writes: "The radiation reactions shown by the entire animal organism and the modifications of individual cells by radiation all point to the cell as being the special unit. It is that all-important individual living thing that determines the behaviour and fate of the larger organism within which it is enmeshed among millions like it."

"How the cells harness the forces of molecules and muster their energies is not well known. But the results of their working are apparent."

¹⁰ Joseph G. Hoffman, *Op. cit.*, pp. 9, 99.

Further on Hoffman, under the subheading 'Atomic Turnover,' notes: "As long as the influx of matter is maintained the organization can function. The physical animal lives to eat."

Hoffman's important observations overlook the fact that life is the phenomenon which gives rise to 'ability to organize.' Therefore it is not the 'ability to organize,' which constitutes life, but it itself is caused by life. Influx of matter does not ensure the maintenance of any organization. Furthermore, neither can molecular forces nor energies explain the working of the living cell.

Waddington¹⁸ in 'Principles of Embryology' notes: "It seems unlikely that we can hope to obtain anything like a satisfactory understanding of development in biochemical terms until we can comprehend the whole working of the cell, as regards maintenance as well as change. This consideration leads me personally to the opinion, which is by no means the most fashionable one, that it is premature to look to biochemistry to provide the main framework of ideas for embryology."

These are meaningful observations.

Haldane,⁸ under the subheading 'New Physiology,' contends: "It is thus within the living cells that we must look for the structure which is supposed to react so as to maintain the normal. These cells are made up of what has been called "protoplasm." Now the more we study protoplasm the more evident does it become that the 'substance' is extraordinarily sensitive to the minute changes in environment. (. . .) Even deprivation of oxygen for perhaps a minute may kill a nerve-cell. There is no permanent physical structure in the cell; the apparent structure is nothing but a molecular flux, dependent from moment to moment on the environment."

These are primary data of observations.

Life manifests itself through open patterns of organization. It follows that these patterns are dependent from moment to moment on being organized as well as on interplays and competitions.

There are numerous examples in the literature of how a cell defends itself from interference and of how interference with one cell may affect other cells if their protoplasmic processes are connected.

Dawes,⁶ discussing the cell membrane in 'A Hundred Years of Biology,' writes: "The cell membrane is indispensable to the life of

⁶Ben. Dawes, *Op. cit.* 88.

the cell. Prick it with a microscopic needle and the protoplasm may protrude and form a new membrane at its surface, but tear it instead and the protoplasm pours out and mingles with the watery liquid outside. First and foremost the membrane is a protective film with a measurable surface tension, and it exerts an inwardly directed pressure. But it is also a selective barrier allowing some substance to enter or leave the cell, but restraining others. At the same time, the cell membrane protects protoplasm against mechanical and chemical agents of destruction and it is the seat of an electromotive force."

Further on Dawes notes: "The cell membrane is probably capable of periodic alterations of this kind, and as it is protoplasmic it is also able to use energy to do work, so that it is more complex and variable than any artificial membrane to which we can compare it."

What are those electromotive 'forces?' Is it because the membrane is protoplasmic that it is able to use energy? What about the structural features and chemical processes involved? Why does it not repair or form a new membrane after tearing?

Obviously the problem of a living organism does not present itself as just chemistry and physics. Chemistry and physics together will not help if patterns of organization organized by life are destroyed to such an extent that life cannot continue to organize them. Thus, living organisms do not depend only on their specific physico-chemical structure or organization, but also on life to organize them continuously. It follows that life can originate only from life, and no other fictitious entities or elements can be appointed to replace it.

Some of the general ideas relevant to these studies of how certain cells elaborate and produce a multicelled organism or individual will be considered briefly.

It is of the utmost importance to examine development without being impended by such abridgements and delimitations as various chemical organizers or modulators, avocators, and inductors, which have been formed for special purposes and are used to throw some light on the occurrence of certain events. Furthermore, it was shown that movements of material particles, diffusion, osmosis, colloid-chemical processes, physical and chemical laws, and structures or organizations by themselves cannot govern the course of development and behaviour of living organisms.

Differentiation is still a vague and abstract notion in biology. Yet it is claimed to be a basic law of nature. Various chemical organizers are supposed to control both differentiation and development. Despite the fact that there are a great number of these chemical organizers, they remain mysterious and the entire problem is far from solved.

The fundamental concept in these studies is not the process of differentiation but the underlying activity of life itself to organize continually to reproduce patterns of organization. This means that a living cell, whether it is part of an organism or a complete organism, irrelevant of its patterns of organization, is organized by life not only to enable it to manifest and reproduce, but to defend itself in the interplay and competition in its surroundings. Each one of the millions of cells and their patterns of organization of specific superiority of behaviour are continuously organized by life for the perpetual interplay and competition in nature to survive. Since each one of these patterns of organization are organized by life, naturally each one understands its specific part and its relation with other cells. The unity of the individual's life, therefore, can be clearly understood from this basic fact, and not through references to his nervous or to any other systems. So, differentiation and development are not just matter that creates an exact duplicate of itself nor just a sequence of chemical changes with secondary physical effects.

Waddington,¹⁸ in 'Principles of Biology,' notes: ". . . the initial differentiation which guides the development of various parts of the egg into different channels depend in many cases on substances which can pass from cell to cell and which must therefore be extra-nuclear."

This is a significant observation.

Each cell's patterns of organization are organized and arise from life in the right sequence. So each cell not only manifests itself freely, but serves life in the community as a free unit-life with its own patterns of organization. Thus arises a multi-celled individual, and its manifestations will depend entirely on the millions of patterns of organization which are continuously organized by life. It implies that, should any of these patterns of organization be destroyed, whatever the destroying entity or entities might be, to such an extent that life cannot continue to organize them, the cell ceases to manifest life or to serve the community. Of course certain entities or events either

immediately or gradually destroy all the patterns of organization in the interplay or competition in nature.

The feature of competition was discussed in previous publications (1957), and will be further illustrated briefly in Part III.

It is important to understand the physico-chemical constituents and processes which go on in organisms. The chemical processes in these patterns of organization are continuously organized by life. Yet A. I. Oparin tried to prove his thesis 'The Origin of Life' by pointing to the ability of the chemist to synthesize *in vitro*, in his flask and test tubes under artificial conditions. Yes, but Oparin dismissed the most fundamental truth, that is the chemist to whom he refers as synthesizing *in vitro*, in flask and test tubes, is 'life itself' that organizes for synthesis. Furthermore a living cell is a unit-life with patterns of organization, highly organized by life and without it there is no life. It cannot be "thrown out of the window together with the atom" as Oparin puts it. It is therefore useless to look for some other fictitious entities, energies, or mechanisms in the cell to explain evolution, development, and differentiation in living organisms.

From this point of view, most of the vital phenomena in a living organism are caused by life, irrelevant of whether the ultimate particles of life will be found and identified. All the chemical transformations of organic substances in a living organism are the result of being continually organized by life. Only life organizes, and it manifests itself without mystery.

It is here that hereditary genes could be discussed at a great length. However, no attempt can be made in this book even to give a sketch of all aspects of development. Now turn to certain aspects of genetics which are relevant to these studies.

Anyone who seriously studies nature and the behaviour of its constituents soon learns to distrust philosophical speculations incorporated in science, no matter how often or how confidently repeated. Darwin never claimed that his doctrine was proved. Yet in the literature of biology, especially that of genetics, the hypothesis of 'natural selection' is an important feature in connection with reproduction of chance variations or mutations. What causes mutation and when does it occur?

If nature had nothing to do with the processes of mutation, there is no need for nature to interfere afterwards as the bad and good

mutations already had occurred or had been selected. If the mutation is good when it occurs it will survive, and there is no further need for 'natural selection.' The same situation would exist if nature had something to do with the process of mutations. Bad and good mutations had already taken place. The same could of course be said of all constituents of nature but, without providing an explanation of the processes by which the results could be brought about, 'natural selection' becomes meaningless. Nature is elevated as having 'generalized superiority' while it is claimed that the most obvious characteristic of science in modern civilization is the control it has over nature. This apparent paradox may further serve to illustrate the confusion of knowledge about the law in nature.

The truth is that neither nature nor science can have 'generalized superiority'. Nature is constituted of open entities with patterns of organization. Thus living entities have to organize, nonliving entities to form patterns of organization. The perpetual change and reorganization of these patterns of organization caused by the continuous interplay and/or competition inside and/or from outside are the only causes which produce phenomena in nature. This law in nature eliminates 'generalized superiority' and ensures freedom, underlying unity, and order in maintaining and manifesting specific superiority and anxiety-superior for patterns of organization of each entity, not only to survive or to exist but to contribute for progressive evolution. Obviously both patterns of organization and their constituents are in constant reorganization, and their extensions are but manifestations of these reorganizations. It follows that distinction between matter and energy, structure and activity, or terms such as force, capacity, and potentiality are meaningless without patterns of organization of specific superiority being continually organized.

Nature can mean only the sum of its constituents with their patterns of organization, and it derives its specific superiority from these continuously reorganized and re-formed patterns of organization. Law or laws may temporarily ensure or abolish justice or freedom for the manifestation of behaviour. However laws in themselves can neither create nor destroy. Only entities are responsible for events or a sequence of events. Accordingly, *the law in nature originates from the continuous interplay and/or competition of open entities, themselves. Thus the law in nature prevents it itself being personified*

or having 'generalized superiority,' and controlling or selecting mutations, whether they are harmful or beneficial. It follows that there is no such thing as 'the law of nature,' but only 'the law in nature.' This fact is obvious as many agitated mutations survive in nature and manifest themselves in patterns of organizations for various changes.

The question of 'generalized superiority' is, of course, outside of the jurisdiction of present-day science.

The concept of the gene, however, is far from being dogmatically frozen in modern genetics. J. Von Uexküll's appropriate reference to Mendel in 'Theoretical Biology' on page 199 also points to a reevaluation of some concepts. Since this reference is relevant to this study, the following is quoted.

"Mendel" writes Von Uexküll "finally decided the question in favour of the characters being unchangeable magnitudes, which mutually exclude one another" (. . .) "he gave proof of the constancy of the properties of all living organisms whatsoever. Biology was shown the uniform building-stone, which Nature uses unchanged for the production of so much diversity, a diversity actually based not on variation but on combination."

"In his seven famous series of experiments, Mendel proved that in peas, form, colour, size, and position of the organs are to be regarded as independent characters, which, even as rudiments in the germ, have become involved in a competition regulated by fixed laws. According to his doctrine the properties can be divided into "dominant" and "recessive," irrespective of whether they come from the father or the mother. The dominant rudiments suppress the recessive, without exterminating them, i.e., if in the germ of an animal the dominant and recessive rudiments have been in competition, the full-grown animal displays in its development only dominant properties, but it remains capable of transmitting recessiveness as well as dominants to its successors." (. . .)

"By establishing this, Mendel discovered the presence of a law of supplantation of the rudiments of properties, which affects these quite independently of whence they come."

"Only in exceptional cases are the recessive rudiments incompletely suppressed, and so produce a modification of the dominants."

"In the majority of cases, the dominance is absolute, and crowds out the recessive property altogether. This exclusion, however, refers

only to the organism immediately proceeding from the germ. Part of the germ remains unaltered and gives the sexual cells from which the next generation springs."

Yes, as Von Uexküll remarks, "Mendel has done science an immortal service."

Mendel went to nature herself and recognized the significance of competition, and the independence of characters. He took great pains to show that 'dominance' neither implies extermination nor losing the properties of the 'recessive' even when the dominant appear to be absolute. It follows that, irrespective of the origin of the 'dominants' or 'recessive,' in the final analysis both retain their patterns of organization of specific superiority in the interplay and/or competition but neither can have 'generalized superiority' in the organism.

That the chromosome or, for that matter, the whole cell theory of 'heredity' is of great importance in regard to patterns of organization of specific superiority of behaviour, there can be little reasonable doubt. However there is no space here for further discussion. In this work, all mutations (or characters) in nature, living or non-living, good, bad, or neural, are the result of the continuous *reorganizing* or *re-forming* of patterns of organization of entities in the perpetual interplay and competition inside and/or from outside. Thus specific superiority also means susceptibility and receptivity and is always perceptible. It follows that diversity is based on both combination and variation.

The processes of development were observed by many biologists through motion pictures. The solemn descriptions made by them are the more worthy of special notice as some of them use mechanistic methods in their fields, yet they were not afraid of seeing and describing something which contradicts their traditional theories or beliefs. Just a few examples are:—

F. H. C. Crick⁴ discussing 'The structure of the hereditary material' in 'The physics and chemistry of life' notes: "Viewed under a microscope, the process of mitosis, by which one cell divides and becomes two, is one of the most fascinating spectacles in the whole of biology. No one who watches the event unfold in speed-up motion pictures can fail to be excited and awed. As a demonstration of the powers of dynamic organization possessed by living matter, the act of

⁴F. H. C. Crick, *Op. cit.* 118.

division is impressive enough, but even more stirring is the appearance of two identical sets of chromosomes where only one existed before."

Sherrington¹⁶ under the subheading the 'Wisdom of the Body' writes: "A motion-picture photographed from cells in growth almost startles us by the intensity of the activity they show. Protein-synthesis is in flood—a riot of activity, but always an ordered riot. The specificity of enzymes is an element of mechanism which causes order, (. . .)."

After that Sherrington continues: "Can then physics and chemistry out of themselves explain that a pin's-head ball of cells in the course of so many weeks becomes a child? They more than hint that they can. A highly competent observer, after watching a motion film photo-record taken with the microscope of a cell-mass in the process of making bone, writes: "Team work by the cell-masses. Chalky spicules of bone-in-the-making shot across the screen, as if labourers were raising scaffold-poles. The scene suggested purposive behaviour by individual cells, and still more by colonies of cells arranged as tissues and organs. That impression of concerted endeavour comes, it is no exaggeration to say, with the force of self-evident truth. The story of the making of the eye carries a like inference."

'Dynamic organization' or continuous influx and outflow of matter and energy are certainly not signs of life. Influx of matter and so-called energy is continuous in nature for both living and non-living entities. For the understanding of 'organizations' there must be some knowledge of the organizers which continually 'organize' or 'form' patterns of organization to control and to direct dynamic organizations for behaviour. 'Life' is 'to organize' and is the very sign of 'dynamic living organizations,' and its cessation is the best evidence of their death and of the organizations as such.

These short glimpses of motion picture photo-records give some idea of how cells develop a pseudo-aquatic embryo "voiceless as a fish," writes Sherrington¹⁶ "yet constructing within itself an instrument of voice against the time when it will talk. Organs of skin, ear, eye, nose, tongue, superfluous all of them in the watery dark where formed, yet each unhaltingly preparing to enter a daylit, airy, object-full manifold world which they will be wanted to report on. A great excrescence at one end of a nerve-tube, an outrageously outsized brain, of no avail at the moment but where the learning of a world which is to be experienced will go forward."

Life or to organize is the phenomenon which gives rise to dynamic living organizations, the appearance of two identical sets of chromosomes, raising scaffold-poles, making bone and eye, purposive behaviour by individual or colonies of cells.

"No one who watches the event unfold in speed up motion pictures can fail to be excited and awed," notes Crick.

"That impression of concerted endeavor comes, it is no exaggeration to say, with the force of self-evident truth" writes Sherrington.

Now to refer to these living cells and their work as body, flesh, machine, matter, and ego is, to say the least, unscientific. And searching for brain outside of living cells is tantamount to searching for brain in lifeless organizations.

It shows how the old metaphysical assumptions of materialism and lack of knowledge of nature, life, and anxiety-superior give a distorted picture of living organisms.

'Life' is 'to organize' and is an open entity. Viewed under the microscope and watching the result unfold in motion film photo-records clearly show living cells continually organizing patterns of organization of specific superiority of behaviour to survive in the struggle in nature. Turning from the motion film to look at nature with its individual lives, the same impressions of perpetually organizing comes with the force of self-evident truth. Whether by looking at a living cell or by talking to a living human organism, this fact correlates and is evident.

This introduction may now be brought to an end with a brief review of some of the principal points maintained throughout this study.

It became increasingly clear that various notions or ideas are not 'scientific knowledge.' It was shown how unsatisfactory some of these metaphysical, pandemonic, and dialectic materialistic interpretations of nature are, either because they do not account for undeniable truth or because they contain completely untenable assumptions. The familiar or some so-called scientific terms such as 'force,' 'energy,' 'entelechy,' 'power,' and 'psychic apparatus' are retracable to these unscientific interpretations of nature. These terms represent something imaginary, inherent, and hidden in some fictitious substrate in matter, and are supposed to be the causes of all phenomena in nature.

Clearly the elimination of these mysterious terms and notions from science is urgent and would lead not only to the emancipation of science as a whole from the bondage of metaphysical and materialistic views, but new vistas for unlimited 'scientific knowledge' of nature would open up.

Obvious difficulties have been treated briefly, but it should be remembered that this was stated at the outset. Also it was clearly indicated that the arguments put forward were in no sense directed against the various practical technological advances. The theory presented is perhaps not so simple as it may seem to appear, nor is it beyond further critical investigation. Nevertheless it can be verified by experiment. Once these studies are clearly understood, the outcome will further technology tremendously. However, past and present history show that 'scientific growth' is more vital for the survival of a society or a civilization than technological, political, economical, or philosophical factors.

Naturally these studies were begun with doubts and the experiments previously carried out were to obtain purely qualitative information which resulted in quantitative data as well. These attitudes and techniques enabled arriving at certainties and drawing valid conclusions of great importance. There is neither space nor need here to pause to review these researches in detail. However, some of the data will be freely used here. Naturally changes had to be made continually, but the significance of the phenomena under investigation became more visible, not only in a general way, but from time to time at every instance. The works appearing under the same title, "The Feeling of Superiority and Anxiety-Superior, The Ottawa Pilot Study" (1953), "The Ottawa Test-Tube Survey on Status" (1955), "The Ottawa Trial Survey on Personality" (1957), and this investigation are adequate as to the validity of conclusions. The objective of this study was essentially to further show the significance of the phenomena in nature.

The fundamental axiom of these studies is that there is no disorder in nature. It may be useful to give once more briefly some of the main points of this work before presenting in the next four chapters under the headings, Part I, To Organize for Specific Superiority, Part II, Freedom and Anxiety-Superior, Part III, The Law in Nature,

Interplay and Competition, and Part IV, Anxiety-Superior in Nature, results of experiments making the phenomena further visible.

Nature is constituted of open entities. Thus nonliving entities form and living entities organize patterns of organization of specific superiority to manifest themselves.

The law in nature originates from the perpetual interplay and/or competition within and/or from outside of these open patterns of organization of entities themselves. Thus each entity's specific superiority is the outcome of the continuous forming and organizing in perpetual interplay and competition, not only for transitive action or transient activity, but also for susceptibility and receptivity, and is always directly perceptible. Continuous competition, change, and reorganization are naturally accompanied by anxiety-superior, as any change, event, or movement of an entity must imply the specific superiority of each entity or entities involved. So any other law or laws, mechanism, randomness, relativity, unity of opposites, and generalized superiority is eliminated or destroyed. Thus each entity's specific superiority is ensured for orderly progressive change. It follows that progressive evolution is caused and is the manifestation of these 're-forming' and 'reorganizing' patterns of organization and their extension by entities themselves. No other phenomenon could have produced evolution. Consequently evolution along progressive lines could represent only collateral but independent processes of living and nonliving entities according to the law in nature irrespective of what the entities' patterns of organization of specific superiority of behaviour might have been. Clearly changes and distances are caused by and are the outcome of these phenomena. 'Time' and 'space' as such do not constitute entities in nature and so cannot cause phenomena.

All phenomena observed in nature are caused by entities themselves. Concepts such as energy, force, aura, entelechy, and psychic apparatus (inherent or not) as causal activities are meaningless. They do not exist in nature.

In accordance with the law in nature, there is a perpetual general mutual exchange, interplay, and competition both inside and from outside of living and nonliving entities' patterns of organization. Obviously, in these struggles, the primacy to organize patterns of organization of behaviour to manifest, to develop, to defend, and to

satisfy further needs of life is a biological necessity for survival. Anxiety-superior, which is of compound origin accompanies these competitions, is basic, and is important with respect to everything in nature.

Individual cells constitute the most important patterns of organization through which life manifests and maintains itself. Since all patterns of organization are open systems, they must include elements of their surroundings. As only life organizes, each living cell's patterns of organization are organized and arise from life, and the cell continues to manifest and to develop as a free individual unit-life. Thus the unity of the individual's life can be based on these facts only.

The continuous interplay and/or competition within and/or from outside of patterns of organization of entities precludes any entity having generalized superiority in nature. This law in nature also prevents nature being personified as having generalized superiority, because only entities are responsible for events or a sequence of events. It follows that all mutations (or characters) in nature, living or non-living, are the result of the perpetual reorganizing or re-forming of patterns of organization of specific superiority of behaviour of entities themselves. In the evolution of living and nonliving entities it will thus be seen that progressive evolution comes from orderly progressive change, and not from chaos, in a random fashion, nor mechanically.

Life is the phenomenon which gives rise to dynamic living organizations and, when life ceases to organize them, it is the evidence of death, and the organizations as such remain only to form patterns of organization. Movements of material particles, diffusions, chemical laws, structures, or organizations, by themselves cannot govern development nor manifest life. Evidently most of the vital phenomena in living organisms are organized by life, irrelevant of whether the ultimate particles of life will be found and identified. Thus life is an open entity and has to organize constantly in the perpetual interplay and competition to survive. This phenomenon is an enormous natural situation which puts an end to mechanistic adaptation and adjustment, and renders desolate various fictitious energies, forces, or psychic apparatuses, to be driven by them like a machine.

PART I

To Organize for Specific Superiority

The concept that the constituents of nature are agents of some mysterious laws of nature, energies, psychic apparatuses, or other usually called forces is, of course, a fallacy and is unscientific. Simple relations, such as when lifting a stone or the billiard ball rolling and striking the hand, are supposed to be the 'effects' of force or energy, not force or energy. Now the questions arise as to why the concepts of invisible force or energy are needed to lift the stone or to roll the billiard ball, and what happens to these concepts if the effects of force cannot lift the stone or if the effects of energy cannot roll the billiard ball far enough to strike the hand. What stops the 'effects' of force or energy? Is it the effects of force in the stone or the effects of energy in the hand? Concepts such as force, power, energy, entelechy, and ego are often falsely associated with consciousness. These images or hidden somethings have become the principle of order, and it is believed that every volition implies a conviction of some of these notions.

Clearly an open entity, such as life, the existence of which is so strongly and continuously threatened, has to organize continuously. The highly complicated patterns of organization of an egg are organized by life, and it is life which further organizes them into countless units of patterns of organizations of specific superiority of behaviour to manifest, to defend, and to preserve itself. Nowhere in the transformation of microscopic ovum till death is there a break at which life ceases to organize. Yet it is astonishing that the literature about living organisms, their development or behaviour, valuable as it is in its own right, does not approach the central problem of life, namely to organize. Is it not the first truth that living organisms and organizations have to be organized or to be formed? Is not 'to organize' or 'to form' the very basis of the concepts of organisms and organizations? The confusion is evident, as the law in nature is not understood.

But the feature, which is so characteristic of life, is the fact that its mode of persistence is by means of organizing. Life has to organize continuously patterns of organization of specific superiority not only to manifest itself but for change and differentiation in the continuous interplay and competition in nature to survive. This fact is respon-

sible for the differences and peculiarities of the relations of living organisms to their environments and to nonliving organizations.

Many complicated events intervene between the lifting of a stone or the billiard ball rolling to strike the hand. Remote effects are meaningless for science. In other words it is extremely important to understand the immediate cause or effect, and therefore to know what happens in the arm before it is able to lift the stone or what started the billiard ball rolling to strike the hand. Patterns of organization of a stone are 'formed' by entities themselves, and the arm of a living organism has to be 'organized' by life itself. Both patterns of organization have specific superiority; otherwise the arm would not need to lift. Obviously, without continually 'forming' or 'organizing' patterns of organization of entities themselves, no movement, change, or events could take place.

The billiard ball rolls and striking the hand injures it. However an injury can be caused by other changes. What is actually observed is an interplay and/or competition between entities themselves. Thus the cause is always interplay and/or competition, and, whatever the effect is, it is always on the entities' patterns of organization. Specific superiority and anxiety-superior are actually manifested and are directly perceptible. It follows that entities are not endowed with a specific superiority *sui generis*, unacquired and untransmissible. Obviously they have to 'form' or 'organize' and 're-form' or 'reorganize' continuously patterns of organization of specific superiority to manifest themselves through interplay and competition. Organizations, systems, or so-called Gestalt, without being reorganized or re-formed perpetually for change and differentiation, disappear in nature as such. Thus, for life to organize ceaselessly is vital.

Examples based on empirical data show that life has to organize continually millions of independent somewhat co-operating unit-lives with their own patterns of organization of specific superiority manifesting and reproducing themselves. Motion film-photo-records taken with the microscope of the activities of cells reveal this as a self-evident truth. The activity of making bones and eyes and of constructing other organs is an element of organizing.

That life is to organize can be further shown by talking to men or watching them in their activities. Here again, as in the microscopic scene, to work, to build, to construct, and to solve challenging

problems are elements of organizing continually patterns of organization of specific superiority to survive. These activities have for their goal the satisfaction of needs. Whether individual living organisms have the same needs or different individual organisms have different needs and goals, they all share the same basic need, namely to organize, to work, to construct, to defend, to be free, and to solve challenging problems. Obviously these activities of living organisms can only be brought about by the operation of entities' patterns of organization of specific superiority of behaviour continually organized by life itself.

Table 1 shows the percentage of answers to Question No. 3 about specific superiority and goals. Ninety-six per cent of the subjects replied 'Yes' or 'Definitely' and the four per cent under the heading 'Other Answers' were also in the affirmative.

TABLE 1
PERCENTAGE OF RESPONSES ON SPECIFIC SUPERIORITY AND GOALS

Question No.	Yes or Definitely %	Other Answers %
3 To reach a certain goal, do you feel that you need to have some degree of specific superiority?	96	4 1. For certain goals definitely. 2. Sure you must. 3. Certain goals yes. 4. Without it you can't do it.

100 Subjects, male and female, over 17 years of age.

Question No. 3 was so designed that it was within the subject's discretion to associate the need for specific superiority with any need or goal. It is irrelevant how needs or goals may be divided or classified, because to satisfy any need or goal involves the life of each cell constituting the individual. Experiments show how the death or interference, even with one of these unit-lives, may affect the manifestation of the whole organism. Clearly any activity of living organisms is determined or depends on these unit-lives organizing. Thus any single act of a living organism involves patterns of organization of specific superiority of behaviour, continually organized and co-operated by life.

It follows that psychological and philosophical notions and terms such as dignity, pride, will to power, confidence, drive, self-realization, self-esteem, self-respect, prestige, identification, and even knowledge and intelligence, which are used for treating behavioural problems, are fictitious and, when actual facts have to be represented, are meaningless. Intelligence and knowledge by themselves are not specific superiority. These illusions reveal themselves as empty schemes and, without continually organizing patterns of organization of specific superiority for activities and behaviour, disappear.

These studies show that a living human organism has and maintains his specific superiority for survival through his own patterns of organization for activities and behaviour, and that he cannot base it on generalized superiority or on fictitious notions such as identification, dignity, self-esteem, self-regard, pride, or on any borrowed prestige.

TABLE 2
PERCENTAGE AND RANKING OF THE COMBINED ANSWERS OF THE
GENERAL AND STUDENT POPULATIONS ABOUT FEELINGS OF SUPERIORITY

Percent	Rank	(2) What gives you the feeling of superiority?	(4) What do you do at present in order to satisfy this feeling?
34.64	1	Work	Work harder
11.07	2	Solving challenging problems	Look for problems
8.22	3	Popularity	Make friends
7.50	4	{ Accomplishment	Setting goals
7.50		{ Recognition	Try to do better
5.35	5	Assisting others	Help others
5.00	6	Hobby	Actively engage in hobby
4.29	7	Sports	Active in sports
3.21	8	Success	Apply themselves
2.50	9	Unexpected attainment	It comes by itself
2.14	10	Surpass	Works diligently
1.78	11	Home	Actively engaged
1.44	12	Property	Improve property
1.43	13	{ Prestige	Make friends
		{ Money	Work
.36	14	Religion	Participates
2.14		Blank	

280 Subjects, male and female, average age 20, taken from the Ottawa Pilot Study 1953.

As these studies progressed, the significance of the data presented in Table 2 became more obvious and threw further light on the phenomena under investigation. It will be observed that 'success' ranks 8th, with 3.21 per cent, and that 'prestige' and 'money' rank

13th with 1.43 per cent each. Now it can be said with certainty that the criterion for all activities of living organisms is 'to organize' for specific superiority, although what constitutes specific superiority may vary and be different in each case. It follows that even notions such as needs, goals, success, money, or prestige become limited or meaningless without activities to organize. The consistency of the replies to Questions No. 4 and 2 also show this. Clearly, without patterns of organization of specific superiority of behaviour continually organized by life, living organisms could neither have goals nor satisfy needs.

Evidently then physical science offers no model for life and its manifestations. Life is to organize and is an individual open entity. Thus, to survive, each individual maintains his own specific superiority for satisfying needs and reaching goals.

TABLE 3

PERCENTAGE OF RESPONSES ON MAINTAINING SPECIFIC SUPERIORITY IN REACHING GOALS

Question No.	Yes %	Other Answers %
4 Are you anxious to maintain your own specific superiority in reaching a goal?	91	9 1. Naturally yes. 2. Yes. As long as it is getting me the goal. 3. Yes. I am contented now. I am independent. 4. You must if you want to do a good job. 5. My own, yes, definitely. 6. I am anxious to maintain it, but I am discouraged easily. 7. Yes, if something is worth while. 8. Sensitive person may withdraw. 9. To maintain the specific superiority of my own rationality.

100 Subjects, male and female, over 17 years of age.

Table 3 also indicates that living human organisms feel anxiety-superior and are conscious of maintaining their own patterns of organization as, without organizing for specific superiority, no needs could be satisfied and no goals could be achieved and life would cease.

At this point the data and discussion of this chapter briefly summarized are:

(1) Nature is constituted of open entities. Thus living entities have 'to organize,' nonliving entities 'to form' patterns of organization. These processes bring about the specific superiority of each entity, and progressive evolution is caused and is the manifestation of these reorganizing and re-forming patterns of organization and their extension by entities themselves. Time and space do not constitute entities in nature. In the evolution of living and nonliving entities it will thus be seen that evolution is an aspect and is caused by collateral but independent orderly continuous progressive change of patterns of organization of specific superiority of entities manifesting themselves in perpetual interplay and competition in nature.

(2) Life is an open entity which has to organize to give rise to individual patterns of organization of specific superiority to manifest and to reproduce itself. Only life can organize to govern the course of development and behaviour. Therefore the fate of a dynamic living organism depends on life to organize it continually.

(3) Individual living cells constitute important patterns of organization organized by life. Life is an independent open entity and retains its individuality to organize in nature. A living human organism has to have and to maintain its own specific superiority for survival through its patterns of organization for activities and behaviour.

(4) Life is the entity which organizes for activities. So, to satisfy needs, to achieve goals, or to solve challenging problems depends on patterns of organization of specific superiority for activities continually organized by life. Obviously, living organisms must acquire and transmit their specific superiority through organizing constantly to manifest themselves. The unity of life can be clearly seen from this basic fact.

(5) Life is to organize continually and is the phenomenon which gives rise to dynamic living organizations, needs, goals, purposive behaviour, and of millions of somewhat co-operating independent individual lives with their own patterns of organization of specific superiority to manifest, to reproduce, and to defend themselves in the universe. Thus the organization of living organisms depends on life.

(6) Life is strictly an individual open entity in nature. So it cannot have generalized superiority but has to organize other entities or matter into patterns of organization of specific superiority, not only for transitive action or transient activity, but also passive susceptibility and receptivity to survive. This continuous organizing and reorganizing is naturally accompanied by anxiety-superior, which is of course of compound origin.

Clearly life, whose existence is so strongly threatened in nature, has to organize continually patterns of organization of specific superiority for freedom in order to preserve itself. The importance of this will be considered in the next chapter.

PART II

Freedom and Anxiety-Superior

It is of course beyond the scope of this study to review the history of the various philosophical, political, psychological, and mythological conceptions about 'freedom.' A glance clearly shows that the way in which a society conceives its world and its freedom in relation to generalized superiority may promote, retard, or put an end to the whole society and to its civilization. It is therefore of the utmost importance to examine freedom from the standpoint of its consequences for life and its manifestations. Obviously the way to a deeper insight into freedom is through understanding life in nature.

Sherrington has done science a great service for emphasizing and demonstrating the autonomy and freedom of each cell in the many-celled individual. The original cell which started the whole living organism was free—Sherrington points out. And others too are free. The cells in the blood are free, and some are so free that they have not even fixed coherence with the rest. Each cell is born free and is destined to live free.

The law in nature for freedom emanates from the continuous interplay and/or competition inside and/or from outside patterns of organization of entities themselves. Thus, generalized superiority is perpetually destroyed, and underlying unity for freedom and order for progressive evolution is ensured in nature. The feature which is so characteristic of living organisms is the fact that life continually organizes individual patterns of organization of specific superiority for freedom in the environment to survive. This truth is responsible for the peculiarities of the relation of life to its surrounds and of the unit-lives and freedom of cells in the many-celled individual. It follows that the degree of freedom of living organisms in their surrounds always correlates with the continually reorganized patterns of organization of specific superiority of these unit-lives or cells. On the mutual freedom and integrity of these unit-lives and their surrounds is based the well-being of individuals. Each of these unit-lives contributes to the freedom of the many-celled individual. This implies that freedom is not just accidental. Life has to organize continually patterns of organization of specific superiority. Thus the freedom which living organisms experience is the outcome of life itself. To appoint any

other fictitious element in living organisms as dictators is, to say the least, unscientific.

No attempt will be made to discuss doctrines or notions about the results of various freedoms. Most of these doctrines assume some sort of generalized superiority, and often not only society as a whole but its individuals also must direct the struggle for freedom against other members of the same society to survive. The tragedies and horrors perpetrated in the name of freedom by different personalities throughout history are well-known. Neither fictitious notions nor instruments of applied science, no matter how formidable they may be, can eliminate the law in nature for freedom.

The examples given about the importance of individual cells and their freedom in association with other cells, based on empirical data, can be further demonstrated by diagnostic interviews with living human organisms in their associations. These data are extremely important for the understanding of life and its manifestations.

TABLE 4
PERCENTAGE OF RESPONSES CONCERNING FREEDOM

Question No.	Yes or Definitely %	Other Answers %
5 Are you anxious about your freedom?	43	57*

100 Subjects, male and female, over 17 years of age.

*Other answers to Question No. 5—Are you anxious about your freedom?

I am proud of it, yet I worry about it.

Definitely, you've got to watch certain persons.

Most important thing in a man's life.

Yes, very much so.

To a certain extent.

Of course I am.

Nobody more than I.

Foregone conclusion.

Yes, I like to keep it.

I would fight for it like a madman.

No. I don't think people generally have personal freedom.

Not here. If I would live in Europe I would worry about it.

To a point.

There is no personal freedom, and I am very much concerned.

No. I have it.

Not concerned as long as not pinned down.

Definitely. I consider it higher than anything.

No. I have my freedom. I am quite happy with it.

No. Always manage to retain my own better than the average.

Should have a certain amount.

Yes, without any doubt.

Yes, I would be concerned if it would be threatened.

You are not completely free. Beyond certain limits will not be pushed.

I like my freedom.

I think so. Not enough freedom. You had more freedom before.

Living in Canada we have the greatest freedom in the world.

I feel that I have a certain amount of freedom.

Very much so. I left the priesthood for that reason.

Most certainly I am.

I am concerned. You have to guard it.

Yes I like my freedom. I have been in a reformatory and in children's homes, and I know what freedom means.

I am very free as it is now, but want to keep it definitely.

That's the main thing.

You want to maintain it.

In this country no. I don't think there is any concern.

I like my freedom.

I am free and want to be free.

Very much so. I like the individual to be free.

Very much. I like to be free all the time. That causes my personal unhappiness, lack of freedom.

No. I have all the freedom I require.

It's all right here.

It's something I cherish very much.

Never an issue because I have it.

I enjoy my freedom.

I am not concerned because I have freedom. If I wouldn't have it
I would be anxious or concerned.

Very much so.

As a Canadian, I am free.

Everybody is.

I am not worried about it at all because I always will have it.

No. There is an absolute conformity, but it doesn't bother me because
I believe in myself.

Yes, I don't like hasty controls.

Certainly. Without a person's freedom, his dignity is destroyed.

No, because I have my freedom to a degree.

Very concerned.

Very much.

Doesn't concern me because probably I shall have it. I would be
concerned if it would be threatened.

Indeed yes.

Table 4 shows that, on the whole, the respondents feel that they live in a society in which they can protect their freedom. Even if the complex feelings expressed by the subjects are analyzed, the effects of these feelings are the same as that of their constituents occurring separately. Obviously, as previously shown, patterns of organization of specific superiority organized by life govern the whole field of freedom also.

Can then a society or civilization set up a series of safe means, through vicarious activities, to condition or to canalize for conformity those freedoms of individuals that are of danger to some generalized superiority? The answer is evidently no. The phrase 'here and now' is meaningless as, in nature, it is 'always' here and now. Artificial conditioning or canalizing for conformity of living human organisms may temporarily reduce certain external manifestations, but cannot stop the organizing by life of patterns of organization of specific superiority for freedom, such as to develop and to change for orderly progressive evolution.

Artificial conditioning or canalizing for conformity has the same effect as that of a drug which may inhibit certain external manifestations temporarily. Many experiments (Carmichael, '26; Matthews and Detwiler, '26) demonstrated that embryos raised in narcosis would develop behavioral patterns of normal organization even though the overt expression of the whole series of precursor steps had been suppressed. Clearly then, the manifestations of living organisms are the outcome of life organizing continually for freedom to develop.

TABLE 5
PERCENTAGE OF RESPONSES CONCERNING CONFORMITY

Question No.	Yes %	Sometimes %	Often %	No %	Other Answers %
9 Does it happen that you become concerned because you don't want to do as others do?	23	10	3	3	61*

100 Subjects, male and female, over 17 years of age.

*Other answers to Question No. 9—Does it happen that you become concerned because you don't want to do as the others do?

Yes, it is quite upsetting sometimes.

Too often. That's my trouble. I don't care what they think.

I would get sore if they insisted.

That's my trouble.

Not necessarily. Some cases yes. Depends what it is.

I just reason with them.

It could happen.

I am concerned.

I am too much of an individual. Doesn't bother me.

It often happens. It does worry me.

I like to follow my own ideas.

Not necessarily.

Lots of times.

I just don't do it.

Sometimes. It depends on conventions.

Yes. I just refuse.

I just walk out and go home.

Yes, but I just refuse.

I don't like anyone walking over me. But if it's going to help someone I don't mind it.

It happens quite a few times. I don't believe in conforming.

Doesn't bother me. Quietly say, sorry no.

I don't want to conform anyone. Very definitely.

All the time.

You have your own mind. You like to do what you want to do.

I just do as I please. If I don't like it I won't do it.

I don't like to go with the mob. I don't like to push anyone around, and I don't like to be pushed.

Lots of times, you just don't want to do so at times.

I have the spirit of my own conviction.

I just don't do it. I do what I think is best.

I don't care to do what others do just for the sake of doing it.

Lots of times. I don't feel like doing what the rest do.

Always.

If it's going to help the other person I usually do it; but otherwise not.

It does happen, but I don't show it.

I always try to keep up with them, but it does happen.

Yes if it is not right.

I like to be private.

I want to keep my own personality.

It does happen.

It does happen. Everybody is free to do as he wants and find some other means.

Yes. I use my own judgment.

I like to be an individual, without duplicating someone else.

I like to do things because I like doing them. I like to live my own life.

No. I wouldn't bother too much.

Yes I am concerned. However I give a reason why.

It does happen.

I don't want to be a sheep in a herd, but I don't want to be too different either.

Occasionally. I don't want to follow the crowd.

Yes I used to, but now I do what I want.

It happens.

Nobody likes to be moulded. Everybody has independence and his own philosophy.

Each personality has a different way.

It does happen that I don't want to conform.

I won't go along with the crowd just because they do it.

Yes. I try to explain with rationality why I wouldn't do it. I try to put myself in the other person's place.

I am not antisocial but when I don't think he is right I am.

I hate doing as the rest do. I always like to find something different.

It doesn't bother me, but I go ahead and do what I want to do.

Not now.

I believe in being an individual. I don't believe in going around with a bunch of sheep.

I like to be conventional in wearing clothes; otherwise sometimes I refuse.

The data in Table 5 show quite definitely that the process which may keep individuals together in a society is the same as that which keeps the individual cells together in organisms. Irrelevant of the processes, individuals cannot be prevented from disassociating when their patterns of organization of specific superiority enable them to expend their individual freedom in their environments. Accordingly the consciousness and behaviour of an individual is built on the basis of this concrete dynamic content. This means that humanity exists to organize continually for the freedom of individuals, and individuals exist to organize continually for the freedom of humanity, to maintain, and to manifest their specific superiority in nature. The importance of this phenomenon for survival and orderly progress is obvious.

The basic progressions are determined by individual lives and not by various gigantic conditioning apparatuses for conformity for some fictitious generalized superiority. Life is individual and preserves its inviolability in the environment. This fact becomes immediately

visible as soon as behavioural relations involve its arousal. Table 6 throws further light on this.

TABLE 6
PERCENTAGE OF RESPONSES CONCERNING PERSONAL LIFE

Question No.	Yes or Definitely %	Other Answers %
7 Are you concerned when someone tries to dig into your personal life?	20	80*

100 Subjects, male and female, over 17 years of age.

*Other answers to Question No. 7—Are you concerned when someone tries to dig into your personal life?

Yes, I resent it.

More than that, I leave the situation immediately.

Yes, it's not a nice thing.

I resent it.

It depends on how far he wants to inquire.

You don't tell him.

Makes me mad like hell. That's my private life.

Not much. I have nothing to hide. I wouldn't like that person.

Under certain circumstances.

I don't like it at all.

Oh very.

Not necessarily. Everybody has to expect to be investigated.

Yes. I don't like it.

Yes, I am concerned. I do everything to avoid it.

I don't like people who want to know everything about me.

Always somebody tries. I don't like them.

I would tell him "Mind your own business."

Generally no. If his object is digging, beware.

Yes, I resent it.

I would be puzzled why would he be concerned.

Oh I don't like that.

Certainly I am.

Yes, I would like to lead a life so that some day, no matter how they dig, I couldn't care less.

Yes. I tell him to go to hell.

Sure, if they dig in my personal life.

Sure, no snooping around me.

No. Can help you to find out the weak spot of your personal life.

Yes I do. It's my own personal business.

Yes, resent it.

Depends who the person is and how well I know him.

I don't give the opportunity to do that.

Yes. Analyzing can become very embarrassing.

Depends on the purpose of it.

I tell him to stay out of it, mind his own business.

Depends why. If just inquisitive, yes.

Yes. In an overcrowded island like England every Englishman puts a fence or hedge around his home.

It depends on what I think of the person asking the question.

If they ask me questions I don't like, I just don't answer.

Turn it off or ask the same questions about themselves.

I rather confine them, then leave them prided in it.

It hurts your pride.

I certainly do. That's personal.

I tell him to mind his own business. On the other hand, if people are not concerned at all, it is no good.

I just wouldn't stand for it.

Not too much. I haven't learned to be secretive enough.

I don't like it.

Mind their own business.

I get mad.

It is not their affairs. I wouldn't dig in anyone else, and I don't want them to dig in my own.

Yes, very much so.

Kind of resent it, depends whom. It's my business.

My personal life is mine and nobody's business except if it can help me or my family.

I would be. Nobody should butt in your business.

I wouldn't like that.

I resent it. There is no reason why anyone should do that. I never do it to anyone else.

Depends what person. I blast them if there is no reason.

It all depends. If it is a good cause and if it helps him I don't mind; otherwise I resent it.

I don't like people interfering.

I am not concerned, but I don't tell them.

Of course I resent it. If he is sympathetic and can help, I might tell him some of it.

Wouldn't like it, but wouldn't worry very much about it.

I resent it.

It all depends on who he is or the persons.

I just don't tell them.

Yes. Bad taste.

I don't like them asking personal questions. Especially strangers.

I have nothing to be ashamed of in my personal life, but I like to know who he is and why he wants to know.

Oh yes. I live my own life. It's my business. You live your own life. Anybody would.

I don't mind. My personal life is my own. If someone is so indecent he will harm himself not me.

If they would misinterpret I would. Depends on the character of the person.

I just don't tell it.

No. I am more interested in them, why they want to know.

Yes it does. One's personal life is his own. Sometimes the person has the right to do it. It depends on who is doing the digging and of whom he is digging.

Yes I resent it. It also depends who is the digger.

Most certainly.

I protest vehemently.

Certainly I am.

Very much.

I don't mind if it is someone I know.

To begin with, in most of the subject's answers the required causation and sequence are definitely evidenced. The data show that the integrity and freedom of living human organisms are indispensable to the manifestation of consciousness, and that the behavioural steps or external manifestations are the results of underlying patterns of organization continually organized by life. Accordingly, the data clearly show that conformity does not exist in nature. Life is an open entity, and therefore it is natural that individuals protect from penetration their own patterns of organization of specific superiority for freedom to survive. In failing to recognize this basic fact, the mirage of conformity led to many well-known tragedies. Conditioning for conformity never secured obedience for fictitious generalized superiority.

In nature, both society (or humanity) and each of the component individuals which go to make it up are complicated open patterns of organization organized by life for specific superiority for freedom in the universe to survive. The data show that one of the most formidable defenses of living organisms in subduing or lulling their anxiety-superior, is to protect themselves from the constant threats of the environment, and to hide from those about them the anxieties and interplays that are going on within, in maintaining their patterns of organization of specific superiority for freedom, behaviour, and development.

The Ottawa Test-Tube Survey on Status (1955) throws a great deal of light on how various status groups may attempt to preserve their fictitious generalized superiority through economic string-pulling or political and social consequences in order to keep other individuals from trespassing in their fields. In this way they also hope that they can adhere to the fiction of prestige superiority without necessitating a test, for they can always attribute the blame to the hostility of others. They dismiss the authority of life itself as they have no notion of living human organisms and of the law in nature. In the last analysis, no machinery (agencies) can condition life for conformity, no matter how many psychological formulae or scapegoats they may use. It was not the cynics only who sabotaged the civilization of the Greeks in the third century B.C.

The data in these investigations reveal that, in a democratic society, most individuals are not afraid to manifest their anxiety-

superior. It is a good sign. They resist the hypocrisy of being free to live any sort of life behind the offices of various imperious illusionary prestiges. The answers clearly show that individuals are anxious to maintain and to protect their own patterns of organization of specific superiority, which gives them a feeling of freedom, and that they are different from others. Obviously freedoms which unit-lives (cells) themselves organize are of transcendental importance.

A temporary pause may be made for a brief summary of the discussion and of the data presented in this chapter on the concept of freedom.

(1) The perpetual interplay and/or competition within and/or from outside of open entities' patterns of organization eliminate 'generalized superiority.' Thus the freedom of each entity to continue to reorganize or to re-form patterns of organization of specific superiority for freedom in their environments is ensured for progressive orderly change. Obviously conformity does not exist in nature.

(2) As an open entity, life has to reorganize individual patterns of organization of specific superiority for freedom. So freedom is but the outcome of these continuous reorganizations. This fact is responsible for the peculiarities of the relation of life to its surrounds and of the individual and his freedom in a society. It follows that the survival of a society or civilization is based on the mutual freedom and integrity of the individual.

(3) Life is individual and protects the inviolability of its patterns of organization of specific superiority for freedom to determine its own progression in the environment. Consequently the consciousness and behaviour of individuals are based on this phenomenon. Even if the overt expression of these freedoms would be suppressed by a series of artificial methods, they could not stop life continuing to organize for freedom.

(4) Both societies and each of their constituent individuals are open patterns of organization organized by life for specific superiority for freedom to survive in nature. Thus societies exist to organize continually for the freedom of individuals, and individuals exist to organize continually for the freedom of societies to maintain and to manifest specific superiority.

(5) Life, as an open entity, has to organize continually individual patterns of organization of specific superiority for freedom in nature.

to manifest, to develop, and to change in the perpetual interplay and/or competition within and/or from outside. Anxiety-superior therefore is basic. Individual living organisms overcome anxiety-superior through the awareness of their freedom organized by their own lives.

(6) Where it is not possible for individual living human organisms to act in accordance with their own awareness of freedom in the perpetual mutations of conditions and situations in nature, they tone down and lull their anxiety-superior. Nevertheless anxiety-superior can never be eliminated, as freedom is organized by life itself to survive.

In the following Part, The Law in Nature, Interplay and Competition, which is indispensably relevant to the analysis of everything, will be considered but with a view to the better understanding of life in nature.

PART III

The Law in Nature, Interplay and Competition

It is clear to the student of behaviour and of the law in nature that concepts such as inherent energy, force, entelechy, mechanism, and various other forces and psychic apparatuses, if divested of their extra scientific connotations, reveal themselves as empty schemes. These well entrenched notions enjoyed a long uninterrupted tenure and a generalized superiority in all learning. These notions were wrapped with some sort of metaphysical essence which call to themselves with their own echoes in vast reverberating emptiness.

It is expected, therefore, that nobody should study seriously the nature of the universe or the phenomenon of life in terms of a special conception based on the observation of life itself. Students are expected to be docile and not to be antagonistic toward fictitious notions. Besides there are formidable conditioning and canalizing apparatuses for purifying heretics by various methods. So the unity is nearly perfect to denounce, to censor, or to hide publications that might undermine the authority of materialistic metaphysical speculations, such as energy, force, relativity, unity of opposites, mechanistic adjustment, pre-adaptation, ego, and libidonal energy.

The connection between science and certain technological advances does not necessarily mean that, without these fictitious conceptions, technology would not have advanced or would be helpless. Modern science is enmeshed in the net of metaphysical physics, and it must be rescued from stagnation if the present distribution of civilizations is to survive. Science certainly will not be served by meetings, by radio and television talks, nor by witty discourses.

Many examples given throughout these studies show quite clearly that the confusion of knowledge of the behaviour of entities in nature is due chiefly to materialistic metaphysical doctrines, beliefs, and illusions. Various private laws and principles are used to explain the law in nature. The truth is that neither living nor nonliving entities manifest behaviour nor have patterns of organization in nature on which these laws and principles are based.

A few more examples in a random fashion may be given.

All molecules of the inanimate universe are supposed to be moving toward a state of disorder in a mechanistic way, according to most of

these private laws. So, mechanism leads nature to its own destruction. They prophesy a universal chaos. However the law in nature eliminated these mechanistic private laws long ago. Progressive evolution of both living and nonliving entities prove this beyond any doubt.

The stored chemical energy in the wood is supposed to be released as heat and light during the chemical change. During the process, no energy is created nor is any lost. This is the law of conservation of energy.

Are heat and light stored in the wood as energy? What released the energy? Was it another stored energy? How about the ashes? Have they no energy? Is it only the stored energy in the wood which burns and lights during the chemical change? During the process no energy was created nor was any lost. Certainly, because there was none. There were only entities or matter, which changed their patterns of organization in the interplay and/or competition within and without. Then what does the law of conservation of energy mean?

Obviously the behaviour and changes of entities in nature cannot be accounted for by any simple law, formula, or terms such as configuration, variety of energies, forces, mechanisms, collisions, movements, and thermal agitations.

Configuration or Gestalt is meaningless as there is no form, pattern, or structure existing in nature where units or parts are an integrated whole; they are not only different but change continually and independently. Atoms unite continually more than one way to form a molecule.

Movements of molecules in all three states of matter are supposed to be caused by the inherent heat energy. The fact is that it is just the opposite. Heat is caused by the interplay and/or competition within and/or from outside of entities' patterns of organization. Thus the stability of entities (or molecules) depends on these phenomena and not on inherent heat energy. Temperature is a remote effect.

In the literature there are many such passages as '... owing to some restoring mechanism,' 'due to thermal agitation,' 'must involve excited electron states,' 'absorption of energy of some kind,' 'the law of chance,' and 'the energy is all that the cell derives.'

In the main it shows that the experiments have not been concerned with finding out what mechanism, thermal agitation, excited states, energy or chance arose from what source to manifest the

behaviour of entities in nature. In this lack of critical examination and in not understanding the law in nature there arises a chaos of dimness, denial, and obscurity, which have nothing to do with scientific knowledge.

It could be added that there is not a law or principle in present-day science which approaches the central problem of behaviour of entities in nature, namely 'to form' and 'to organize' patterns of organization of specific superiority of behaviour according to the law in nature, interplay and competition. The significance of these phenomena was emphasized in previous publications under the same title.

Nature is constituted of open entities. Thus nonliving entities have to 'form' and 're-form' and living entities have to 'organize' and 're-organize' continually patterns of organization of specific superiority of behaviour in the perpetual interplay and/or competition within and/or from outside. Naturally anxiety-superior is manifested by entities. These phenomena are basic to everything occurring in the universe.

Biology has but few and not very strict private laws. Biological generalizations therefore often throw more light on the behaviour of entities in nature than do other sciences. The liberty may be taken to give a few further generalizations relevant to these studies.

The phenomenon which is supposed to make life possible is catalysis. The catalysts of life are called biocatalysts or enzymes.

Is it the phenomenon of catalysis which makes life possible? Are biocatalysts or enzymes catalyzing life? The truth is that it is just the opposite. Life is the phenomenon which gives rise to biocatalysts or enzymes and makes catalysis possible. Enzymes or biocatalysts are only one kind of the many important open patterns of organization of specific superiority continually organized by life through interplay and competition. Thus the specific superiority of enzymes depends on life to organize them continually, and also on the interplay and/or competition within and/or from outside of other entities' patterns of organization of specific superiority. This law in nature eliminates generalized superiority and the laws of mechanisms. Even if an enzyme speeds up chemical reactions thousands of times, it itself is changed finally. Thus the path of molecules is determined by entities continually 'reorganizing' or 're-forming' their patterns of organization

of specific superiority in perpetual interplays and competitions. Obviously, as emphasized in previous publications, *nothing is the outcome of evolution but evolution is the outcome of these phenomena. Therefore the cell-level of organization is not the result of evolution but is the consequence of this continually 'reorganizing' by life itself.*

The phenomenon of competition is recognized in the literature of biology. It is interesting to note that its significance is accepted irrelevant of the various schools of thought. A few abstracts may be given.

'... development is the result of competitive interactions ...'

'... in development we have to deal with systems of competing processes ...'

'... the mechanism of evocation can produce crucial changes in the system of competitive interactions ...'

'... the competition of life may be between cells and the physical properties of molecules surrounding them ...'

'... a local infection represents a warlike competition ...'

'... competition in the world of micro-organisms must be very intense ...'

'... the growth of an embryo involves competition between many parts, not all of which can grow at one and the same time ...'

'... competitive interactions are not only almost necessary but there is definite and direct evidence for their existence ...'

Clearly then, the whole story cannot be just chemistry, physics, structure, randomness or mechanism. The phenomenon of competition or interplay could not exist between entities without each having some sort of specific superiority. More than that, no phenomenon can occur in nature without each entity having its own specific superiority of behaviour. It follows that the fundamental concept in these studies is not matter or entities in motion, but their underlying activities 'organizing' or 'forming.' Only on these bases can the physical and chemical constituents of living and nonliving organisms be understood.

Nature is constituted of open entities. Thus perpetual competition and interplay among entities 'to organize' or 'to form' continually patterns of organization to manifest themselves is the law in nature. Indeed, as shown, the moment life manifests itself, the appearance of competitions, interplays and anxiety-superior are clearly

observable. The importance of organizing patterns of organization of specific superiority thus becomes obvious. Life understands this law in nature, and accordingly perpetually reorganizes its countless individual open patterns of organization for behaviour, organized by free and autonomous open unit-lives through interplays and competitions within and/or outside to manifest themselves and to survive in nature. *The specific superiority of living organisms, whether single-celled or in association with other cells, therefore, is caused and came to be by this endless 'organizing' and 'reorganizing' by life itself through interplays and competitions.*

The importance of interplays and competitions within living organisms and their relations to interplays and competitions in environments to survive was described in the Ottawa Trial Survey on Personality under the same title (1957). There is no need here to recapitulate, but a table is presented from that study.

TABLE 7
PERCENTAGE OF RESPONSES ON COMPETITION

Question No.	Yes or Definitely %	Other Answers %
1 Do you feel that competition is alright?	89	11 1. It is very good. 2. It challenges you. 3. There should be. 4. Everybody has to live. 5. Not in everything. 6. Yes and no. 7. Some competition. 8. So long as it is fair. 9. It has to be so. 10. I have to. 11. Not too much of it.

100 Subjects, male and female, over 17 years of age, taken from the Ottawa Trial Survey on Personality (1957).

As these studies progressed, the magnitude of the data in Table 7 became more visible, and a few further comments may be made. Nowhere, from transformation of microscopic ovum until death, does life stop organizing patterns of organization of specific superiority in competition and interplay to survive in the universe. Closed systems do

not exist in nature. It follows that ancient dichotomies such as personality and family, personality and school, and personality and culture are unscientific. The family, school, culture, and some other immediate environments are often used as scapegoats and pretexts to explain personalities and anxieties. However these investigations show that a living human organism soon learns, through interplay and competition within his own family, school, or culture, that he is different and that his patterns of organization of specific superiority of behaviour assure him that he is a distinct individual unlike the others. The importance of interplays and competitions of specific superiority of personalities with personalities was shown in work under the same title (1957), subheading 'Situations of Superiority.'

The interplays and competitions between the patterns of organization of specific superiority of behaviour of a living organism and patterns of organization of specific superiority in environments continually affect the behaviour of the individual. While these patterns continually change, nevertheless his personality to manifest specific superiority in the environment ceases only with death.

As does a cell, the living human organism endeavours to maintain its specific superiority in interplays and competitions in the environment, as shown in Table 8.

The data in Table 8 complement that of Table 7, and clearly show the significance of the phenomena. The ability of living organisms to maintain themselves in environments ultimately depends on maintaining their open patterns of organization, reorganized continually through interplay and competition by life to manifest, to develop, and to survive in competitions in nature. *Every single character, therefore, of a living organism or a society is invariably the result of these perpetual interplays and competitions in the universe of entities themselves within and/or without, in which patterns of organization are continually reorganized by unit-lives (cells) for specific superiority to change for progressive evolution.*

The primary characteristic of life is, then, to organize patterns of organization to maintain its specific superiority for freedom of activities, such as to reorganize for change, to develop, to reproduce, and to defend itself in the struggle of competition.

The law in nature, continuous interplay and competition, eliminates generalized superiority. In development, no cell monopolizes

the available material to the detriment of the other cells. Should, however, a struggle develop against unfair competition, even those cells which survive at the expense of the others could not survive further competition.

TABLE 8
PERCENTAGE OF RESPONSES ON MAINTAINING SPECIFIC SUPERIORITY

Question No.	Yes %	Other Answers %
6 Are you anxious about maintaining your own specific superiority in the future?	87	13 1. Yes, because it is important. 2. Want to continue. 3. Sure, you always look ahead. 4. Sure, to the last. 5. Not specially. I don't care what happens. 6. I am not worried, but maintain it. 7. I expect to maintain it. 8. Yes, you are not always right, consider the other. 9. Yes, you got to work and study to get to the goal. 10. You want to maintain it. 11. I will be proud of it. 12. Depends on the character of the person. 13. Yes, when I lose my own rationality for specific superiority.

100 Subjects, male and female, over 17 years of age.

The relations between individual cells and those of living organisms as a whole to their environment were illustrated in the Trial Survey on Personality under the same title (1957), and it is unnecessary to repeat the findings.

Suffice is it to say that at present, in civilized societies, many unfair competitions are rendered imperative by various institutions, fictitious notions, and cliques. The net result is the degradation of the whole society. Then again there are societies where a struggle is waged against the tyranny and deception of unfair competition, and among them are many who previously enjoyed the leadership but

were treating as preys those with whom they were competing. Individuals, institutions, and societies are open entities in nature, and are bound to decay when they suppress all forms of competition which do not conform to their fictitious and unfair standards. Beneath the soft surface layer in many present-day societies there is much that is inimical and threatening. There is a hard core which ruthlessly destroys competition.

One thing that will have become clear by now is that, whatever the nature of living organisms may be, they can only be dealt with scientifically by treating them as open patterns of organization continually organized by open unit-lives, and not as if they were machines or mechanisms.

Living organisms are involved organized events amid involved competitions and interplays. Their endurance is the outcome and is dependent on perpetual competitions and interplays amid open patterns of organization continually 'reorganized' or 're-formed' by open entities in nature. *The extraordinary feature which is so characteristic of life is the fact that its mode of persistence is by means of 'reorganizing' and 'not re-forming' for change. Thus life also reorganizes patterns of organization formed by nonliving entities to maintain its specific superiority in the perpetual interplays and competitions to survive in the universe. Naturally these competitions are accompanied by anxiety-superior.*

Similarly, as pointed out in a previous chapter, organisms or organizations are the outcome of reorganizing and re-forming patterns of organization by open entities themselves through interplay and competition. The significance of these phenomena to the understanding of organisms or organizations is basically important as well as with respect to everything that happens in the universe.

The main points of this Part then are:—

(1) The law in nature, perpetual interplay and competition, destroys fictitious notions such as inherent energy, various other forces, psychic apparatuses, relativity, unity of opposites, mechanisms, mechanistic adjustment, pre-adaptation, changes at random, mysterious laws of nature, and private laws.

(2) Nature is constituted of open entities. Thus the law in the universe, perpetual interplay and competition, eliminates generalized superiority. Consequently, the freedom and unity of constituents

'to form' and 'to re-form' or 'to organize' and 'to reorganize' open patterns of organization of specific superiority of behaviour for orderly change is ensured. Progressive evolution is an aspect of these phenomena.

(3) As nature is constituted of open entities, interplay and competition are an organizational necessity. Thus, entities 'form' or 'organize' patterns of organization of specific superiority of behaviour to manifest themselves within and/or from outside in perpetual interplays and competitions. The importance of these phenomena in comprehending organisms, organizations, and causes in nature is obvious.

(4) In accordance with the law in nature, there is a persistent and continuous general mutual exchange, interplay, and competition both inside and from outside of living and nonliving entities' patterns of organization. In these struggles, the primacy 'to organize' and 'to reorganize' continually to maintain specific superiority to satisfy needs of living organisms is a biological necessity for survival. The natural anxiety-superior which goes with these competitions is basic.

(5) Obviously, closed systems do not and cannot exist in nature. The ability of living organisms, therefore, to maintain themselves in surrounds ultimately depends on maintaining their open patterns of organization of specific superiority reorganized continually through interplays and competitions by open unit-lives (cells) to reproduce, to develop, and to change in competitions in nature.

(6) The specific superiority of living organisms, whether single-celled or in association with other cells, is organized by life to transmit through continuous interplays and competitions, not only for transitive action or transient activity, but also for passive susceptibility and receptivity to survive in the universe. These phenomena are the cause of all biological change and novelty.

The meaning of anxiety-superior in interplays and competitions in nature has become obvious. This will be briefly discussed in the next Part.

PART IV

Anxiety-Superior in Nature

The medieval world, with all its ingenuity, could not succeed in finding any entity in nature with 'generalized superiority' and therefore went outside of nature.

The deity of modern materialistic science took over the sidereal essences, astro fluids, immaterial substances, innate heat, angels, and demons, changing their names to inherent heat, energy, force, entelechy, aura, force field, space-time, relativity, unity of opposites, thermodynamics, atrophy, ego, id, and so on, and, to unify them, brought in fictitious energy from outside of nature elevating it to 'generalized superiority.' So 'energy' was raised to be the one 'great artificer' in the universe.

Beyond any doubt these imaginary substances, forces, and energies are unreal, and they disappear altogether when actual truth has to be represented. Yet these notions are used in modern science for treating behavioural problems of entities, and are ordained into living and nonliving entities as dictators or rulers with 'generalized superiority.' In this way fictitious energy in various forms becomes the sole inventor and creator in nature, refuses to differentiate between living and nonliving, and dismisses all other entities in nature, but conserves itself mechanically concealed in various machines.

Such ideas are responsible for the stagnation of research in science and are deceptive in assuming that technology would not advance without them. These metaphysical notions have nothing to do with the advance of technology, but were introduced after some technological advances based on fundamental scientific research had been made. For technology, these notions are irrelevant.

Sherrington,¹⁶ in discussing 'Nature and Tradition' and 'The Natural and Superstition,' points out that Fernel, the physician of his time, insisted that a long-sanctioned dogma, not demonstrable by observation, is an hypothesis. Then Sherrington notes, "Fernel, with all his professional distinction, was surrounded by, indeed immersed in, a world which was plagued with magic, astrology, elixir-brewing, the philosopher's stone, and cabala. A world of superstitions masquerading as knowledge and science, the more dangerously because often sincerely."

What small fraction of science would today survive the disappearance of all that it has built upon metaphysical notions such as energy, force, ultimate particles, neutrons, mesons, space-time curvature, mechanisms, and various fictitious psychic-apparatuses? What strikes the student of behaviour and of the law in nature is the distance between present-day theories and observations. These theories have the same blinding influence as that of the long-sanctioned dogmas of Fernel's time. In the literature, anxiety and excited states remain vague notions and are interpreted metaphysically, and even magical ideas frequently occur in expositions of these hypotheses. The behaviour of entities in nature present a problem entirely different from these notions.

Throughout these studies, it became increasingly clear that it is imperative to think of entities in nature in terms of open patterns of organization of specific superiority continually reorganized or re-formed by entities in perpetual interplay and competition within and/or from outside. Obviously the existence of these complicated patterns of organization are continually aroused and threatened. Thus, patterns of organizational necessity, accompanied by anxiety-superior and change, are basic and clearly show the significance of 'reorganizing' or 're-forming.' Evidently, patterns of organization are dependent for their existence on entities themselves. It follows that, in studying the behaviour of entities in nature, these underlying activities and their anxiety-superior are of vital importance. Consequently *anxiety-superior is of complex origin as are its excesses, which differ neither in principle nor in character.*

Studies agree that development is the result of competitive interactions. Obviously competition cannot exist without entities having specific superiority. It was pointed out that, no matter how needs or goals may be divided or classified, any single act of a living organism involves patterns of organization of behaviour in interplays and competitions.

A living cell, freely running in the pond or in organisms seeking its food, must have life to organize patterns of organization of specific superiority of behaviour for its freedom and for its activities. Evidently then, without life, various conceptual dichotomies or nervous systems are meaningless for behaviour. It is concurred here that life is an individual open entity, the existence of which is so strongly

threatened by perpetual interplays and competitions. Therefore life has continually to organize and reorganize patterns of organization with interplays and competitions in order to survive in the universe. So behaviour is rooted in individual patterns of organization organized and co-ordinated by unit-lives (cells). Clearly continuous disturbances and interruptions in organizing and reorganizing are accompanied by manifestations of anxiety-superior. Thus all anxiety is anxiety-superior, as it involves patterns of organization of specific superiority of behaviour. It follows that manifestations of living organisms are organized and controlled by individual lives themselves in competition and interplays. Thus anxiety-superiority (or its excesses) is the outcome of events both in the environment and in the living organism itself, and finds its support in the law in nature.

Two complementary questions, No. 1 and No. 2, were designed to throw further light on the phenomenon.

Question No. 1

What do you think is the reason of most anxiety?

Answers

Instinct or reflection towards whatever presents itself.

I think a lot is caused by our society.

Lack of freedom.

Money.

Worry of business and family.

Personal dissatisfaction, discontentment.
General discontentment.

Money and real health.

Family. Even when you want to make money, it is for the family. I want them to have a good life, buy a car, and so on.

The fast living.

They don't face the problem.

Question No. 2

What do you think is the best way to overcome anxiety?

Answers

Change your surroundings. General change.

To meet the situation to the best of your ability. If that can't be done, leave the scene.

Have freedom.

Try and be relaxed about the whole thing.

Try to relax but sometimes it doesn't work.

Offer no resistance, conventional run of the mill. Personally I can never do it. It is impossible. Lesser degree of ambition.

Remedy the cause where possible. If you cannot remedy it yourself, then you look for someone who can remedy it. That someone may be God.

Think it over and have a nap.

Go to bed early and cool yourself.

Face your anxiety. I go to it.

Lack of understanding of yourself, lack
or moral philosophy, lack of faith.

Trend is to keep go, go, going.

Worry about money. In the American
Continent money, in Europe freedom.

Frustration of a motive.

Domestic troubles.

Money.

Things that may never happen.

Bad nerves.

Wrongly resenting others.

External pressures.

Health.

Over-ambition.

Try to get ahead.

Pressure.

Pushing, too much pressure.

Uncertainty.

Try to make too much money too fast.

Frustration, all sorts of it.

People think they won't measure up.

Over-tiredness.

For most people money. As for me, it is
my health.

They do too much of one thing.

Too much speed.

Maintaining your level of your own spe-
cific superiority.

Security, health.

Worry, your insecurity.

Security.

Finance.

To get a place in the sun a little above
poverty

Financial.

Debts, get paid.

Personal problems. Home life.

It's possible, but I don't know. There
are many.

Thinking things over, before all keyed-
up.

I get by myself and think my problem
out.

Reason.

Not to worry about anything, learn to
relax.

Prayer.

I really don't now. Sometimes you can't
do anything about it.

Without any fear.

Mind your own business. Not to butt
in other people's.

A struggle of the part of the whole
people to destroy the causes of anxiety.

Faith in something. I don't wish to be
involved in anything.

Keep yourself occupied.

Stop to think.

Stop and think.

Keep your control.

Think and reason.

Take time, before jumping, to look.

Reasoning.

Take it easy. Relax and enjoy life.

Relax.

Not to think of it. Occupy yourself.

Stop thinking about it.

Think ahead.

Thrashed out.

To think out clearly the whole situation,
not to be rash.

Relax, avoid it.

Self-control.

Pack up and go fishing for a day.

Obey the rules. There is something in
this world for everybody.

Try to forget.

Sit down, read a book and forget about
it.

Get used to it, to be able to overcome it.

Better living, easy living.

Little items or little things.

Finance.

Wanting more than you have, fast living.

To get ahead in life, put yourself as high in new brackets as is possible.

People working for something that they can't have.

Things don't go right. Unexpected disturbances, such as visitors to your home.

Concerned about the future.

Some people just worry over nothing.

Financial, war.

What other people think of me.

Finance.

Finance.

Speed which cars go at.

My anxiety is mostly over accidents.

To escape incapacitation.

Atomic age. Seeking to better themselves

Financial, sickness.

Money, security.

Financial, security.

Sickness and finance.

Right love adjustment.

To overcome financial responsibilities.

Uncertainty.

Money troubles.

No work.

My family, to keep them on the right path.

Financial.

Scared for there are no jobs.

Money is the very thing.

Take life as it is, try to match your personality with your surroundings.

Don't let little things bother you.

Try not to let things get you down.

Go for a holiday, change.

To be satisfied for the time being.

Slow down.

Try to be cheerful, don't let small things bother you.

Do your best at all times and having done that relax.

Go to see to it, get to the bottom of it.

Not to let things worry you too much.

To lose our false pride.

You can't.

Realize that you cannot do anything about it.

I don't think you can.

Avoid reading or hearing about accidents. Try and forget about everything.

Do your best job day by day.

Get away from it for a few moments. Take a walk.

Drop everything, go to a show or go for a walk.

Take them as they come.

Hard work. As long as your mind is occupied doing something.

Depends on the problem. Take a good rest. Get away from it.

Religion.

Just to fight it.

Work hard and have a good sleep after.

Get loaded. Drink on Saturday night and enjoy yourself for a change.

Just take a ride in the car.

Just have to believe in God, and ask for help.

Govern your spending according to your means.

Lay down. Take a rest.

Wait it out and see what you can do.

Worrying of somebody else.

Sickness.

Money.

Clash of personalities. Environment.

Security.

Money, family.

Their own finances.

Personal unhappiness.

Try to do too much.

Money.

Something you want very much and can't get it; or you discover something and you cannot realize it.

Money.

Personal problems.

Financial and marital problems.

Something they think will hurt them.

Financial position.

Right now my own anxiety is about my university education, whether I will make it or not.

Not fulfilled hopes. Unhappiness.

Lack of belief in God.

For job and money.

The inability to accept oneself what one is. One to develop one's own resources.

With me it is love.

Lack of money.

Individual health.

Insecurity.

Conflicts of roles on the individual in society.

Lack of security.

My worries about passing exams.

Read a book, take interest in something else.

Change your mind. Go to the cottage, get fresh air, change of work.

Keep smiling.

If they would live more according to their needs.

Change your way of living. Change.

I really don't know.

Self-restraint.

Try to make the best out of life. Try to make happiness the best way you can.

Count twenty. Stop and think.

Think things out.

Try to see the good side of it. Try to make the best out of the good side.

Keep yourself busy, and not to think of yourself.

Try to think of it in an idealistic way whenever it is possible.

Settle yourself down to one way of life and don't worry about it.

Not to be frightened.

Occupy yourself with something not pertaining to your worry or anxiety.

I try to think and eliminate what I shouldn't do. Then I act, and face it.

Take away the barrier.

Seek the help of God.

Just try to do your best.

To accept what is and to believe and to develop what is within.

Emotional control.

Live from day to day.

Knowledge.

Must believe in something, not necessarily religion.

When you sleep.

Strong mindedness. Make up your mind so that you are not going to worry

Try to do something. Take a rest.

The data presented show that individuals operating in a general social stream feel that money, security, health, uncertainty, and various pressures are the reasons for most anxiety. Many of the subjects who are financially secure gave 'money' as the reason for anxiety. These answers represent reality and are favourable signs. Financial security alone will not eliminate anxiety. These experiments prove this beyond any doubt. This was illustrated in previous publications. There is no need here to recapitulate thereon except to add a few remarks. Even if a person appears to be secure by all available measurements (this includes various prestiges, borrowed or otherwise, self-esteem, self-realization, dignity, and so on) and comfortably senses his place in the general scheme of things, he cannot eliminate his anxiety-superior.

A living human organism is an open entity and is constituted of patterns of organization of specific superiority of behaviour and activities organized by open unit-lives (cells) in continuous interplay and competition to survive these perpetual threats within and/or from outside. Thus, the moment life cannot organize patterns of organization of specific superiority in competition in nature, anxiety-superior for life ceases.

In turning back to the data given in Table 2, Question No. 2—What gives you the feeling of superiority?—money ranks 13, practically the last, with only 1.43 per cent. Yet these data appear to show that money is the reason for most anxiety. Money, prestige, dignity, pride, self-esteem, self-regard, self-realization, various egos, and other psychic apparatuses are not, however, the first cause of anxiety, as shown throughout these experiments. These mock explanations and notions disappear as soon as behavioural relations involve their arousal. The data in Table 2, Question No. 4, clearly show this. To the question, "What do you do at present in order to satisfy this feeling?" the replies given were:—work, make friends, and various other activities in association with these answers. Money, therefore, is not an aim in itself. Clearly then, without patterns of organization of specific superiority for *activities* continually organized by life, these concepts, if divested of their extrascientific connotations, reveal themselves worthless.

That individuals understand the difference between money and activities is further shown in the answers to Question No. 2—What

do you think is the best way to overcome anxiety? Most of the subjects replied, 'to think,' 'to relax,' and 'to change.' In a free society it is possible for living human organisms to manifest their anxiety-superior. Thus they can resolve it. In a society where individuals are conditioned by artificial and deceptive means to blind obedience, they inhibit their anxiety-superior temporarily and appear to be docile, but when they manifest it, it is destructive.

It may be reiterated here that life is the phenomenon which manifests itself and gives rise to all other phenomena in living organisms. Thus, apart from life, organisms cannot manifest phenomena which are themselves caused by life. It follows that the fundamental concept in these studies is that life is to organize, and therefore no separation can be made.

The data throughout these studies show that living human organisms maintain their own specific superiority in thought even though sometimes not manifesting it. For example, in the Trial Survey on Personality (1957), Table 4, Question No. 9—Do you maintain your own feeling of superiority in thought alone? the answers were 36 per cent 'sometimes' and 64 per cent 'often.' This is in harmony with life, as life has to organize continuously patterns of organization of specific superiority of behaviour to survive.

Obviously, from no elementary mechanical principles nor change at random can the behaviour of even nonliving organizations be deduced and, similarly, from no elementary physical or chemical principles can the behaviour of living organisms be inferred.

The importance of the concept of anxiety-superior was also demonstrated in previous works under the same title. Anxiety-superior is basic and its manifestations are the result of organizational necessity of open entities 'to reorganize' and 'to re-form' continually patterns of organization in perpetual interplay and competition in nature. It follows that any phenomenon in the universe involves patterns of organization of specific superiority of behaviour and of activities accompanied by anxiety-superior of open entities themselves. Although life can reorganize patterns of organization, also formed by nonliving entities, it is itself an individual open entity subject to interplay and competition and cannot have generalized superiority, but has to reorganize continually patterns of organization of specific

superiority as a unit-life or in association to manifest, to defend, and to preserve itself.

Ninety-one per cent of the subjects answered "yes" when asked, 'Are you anxious to maintain your own specific superiority in reaching a goal?' Some others replied 'You must if you want to do a good job,' 'My own, yes definitely,' and 'Naturally yes.' It shows that, in spite of training, the living human organism quickly senses that his fundamental need is biological in character. Any activity requires patterns of organization of specific superiority organized by unit-lives. Even the slightest disturbance of a single pattern of organization may effect the activities of an individual. That living organisms are anxious to maintain these patterns of organization is further shown by the responses to Question No. 6. Eighty-seven per cent replied 'Yes' and some replied 'Yes, because it is important,' 'Sure you always look ahead,' 'I expect to maintain it,' and 'Yes, when I lose my own rationality for specific superiority.'

Anxiety-superior for freedom of behaviour and for various activities of living organisms is obvious. Life has to organize for freedom, as the prior condition for activities of living organisms is freedom. Freedom is vital for survival. Forty-three per cent of the subjects, who replied 'yes' or 'definitely,' are concerned about freedom and most of the other answers were also in the affirmative. A few examples are:—

'Most important thing in a man's life.'

'I would fight for it like a madman.'

'There is no personal freedom, and I am very much concerned.'

'Definitely. I consider it higher than anything.'

'I am concerned, you have to guard it.'

'Yes, I don't like hasty controls.'

In a democratic society it is possible for living human organisms to manifest their anxiety-superior, to maintain, and to protect their freedoms. The data clearly show this. A few examples are:—

'Living in Canada, we have the greatest freedom in the world.'

'Yes. I would be concerned if it would be threatened.'

'Not here. If I would live in Europe I would worry about it.'

'As a Canadian, I am free.'

'I am proud of it, yet I worry about it.'

As long as men can manifest their anxiety-superior in freedom, there is a chance for them to maintain their freedom and to overcome their anxiety-superior. It is to be commended. It is an excellent reason for hope. Where men are forced, bullied, and conditioned by various deceptive methods to obey and to acquire their relative securities in blind obedience, anxiety-superior disappears from the surface and human living organisms may give the impression of being engines to be operated. Well entrenched totalitarian and authoritarian personalities from the time of Pharoah to the present believed that blind obedience was all that was needed for reward and security in this world and in the next. They have no notion of living human organisms and of the law in nature.

The literature is full of mental and moral social nostrums of adaptation and adjustment for conformity or collectivism in its more modern form. In this way a restless minority hopes to secure the obedience of the majority. These personalities have no notion of what life is. They may believe in various fictitious symbols from which they derive a generalized superiority and authority. Then they go out as chosen tools to dig in everybody's personal life, to force them to obey that authority, to lead, and to command them.

The material in these experiments clearly shows that, in a free society, most individuals manifest anxiety-superior at any attempt which would prevent them from manifesting their own patterns of organization of specific superiority for doubting certain axioms or some fictitious symbols with generalized superiority. They resist conformity. The following replies taken from Tables 5 and 6, to Questions No. 9 and No. 7 throw further light on this.

Does it happen that you become concerned because you don't want to do as the others do?

'Yes, it is quite upsetting sometimes.'

'I just walk out and go home.'

'I don't want to conform anyone. Very definitely.'

'It does happen, but I don't show it.'

'I want to keep my own personality.'

'I don't want to be a sheep in the herd, but I don't want to be too different either.'

Are you concerned when someone tries to dig into your personal life?

'More than that, I leave the situation immediately.'

'Makes me mad like hell. That's my private life.'

'Yes, I am concerned. I do everything to avoid it.'

'Always somebody tries. I don't like them.'

'Generally no. If his object is digging, beware.'

'Yes I do. It's my own personal business.'

The significance of perpetual interplay and competition of open entities in nature was demonstrated in these studies. The far-reaching importance of 'to organize' and 'to reorganize' or 'to form' and 'to re-form' patterns of organization of specific superiority in continuous interplay and competition by open entities was emphasized. Thus specific superiority and anxiety-superior are dynamic phenomena in the universe.

It is a sad state of affairs to find how the manifestations of patterns of organization of specific superiority of living human organisms in interplay and competition in nature are obstructed, blocked, bullied, and hedged around by so many different totalitarian and authoritarian personalities. In a democratic society, the people can hope to maintain their own specific superiority to build and to develop for orderly progress, and it would be a tragedy to throw it away or to allow it to be destroyed by such personalities.

It is natural for unit-lives to organize to preserve their patterns of organization of specific superiority in interplay and competition whether as an individual self-centered life or as a corporated unity in association. Results obtained in Table 8, Question No. 6—Are you anxious about maintaining your own specific superiority in the future? further shows this. Eighty-seven per cent answered 'Yes' and other remarks are 'Yes, because it is important,' 'Sure, you always look ahead,' 'Yes you have to work and study to get to the goal,' 'I will be proud of it,' and 'Sure, to the last.'

Clearly from no various nervous structures as such can behaviour or anxiety be understood or explained. Behaviour and anxiety-superior are rooted in patterns of organization organized and co-ordinated by individual unit-lives. Therefore the whole living organism is involved in both behaviour and anxiety-superior. Question No. 10,

Table 9, throws further light on this. Ninety-three per cent of the subjects feel that their whole system is involved when they are excited.

TABLE 9
PERCENTAGE OF RESPONSES ON ANXIETY-SUPERIOR

Question No.	Yes %	Other Answers %
8 Do you feel that most of your anxiety involves your specific superiority?	94	6 1. In the majority of cases, which means 50 or 51 or a little more. Indirectly perhaps more. 2. Little but yes. 3. Most of it yes. 4. I suppose yes. 5. No. Just sometimes. 6. Yes, most of it.
10 Do you feel that your whole system is involved when you are excited?	93	7 1. Really I can't tell. 2. In a way yes. 3. Depends. 4. No. Sometimes only my mind. 5. Yes, most of it is involved. 6. I think it is. 7. Mostly my nerves.

100 Subjects, male and female, over 17 years of age.

Life has always been an individual open entity in nature. If it would be various matter, energies, forces, electricities or psychic apparatuses, it would not be life. Life can be individual only and it manifests itself without any mystery, whether it can or cannot be identified with any one material element. Individual open living cells constitute the most important patterns of organization that are continually reorganized by unit-lives to survive in perpetual interplay and competition with other patterns of organization of specific superiority by open entities in nature. Thus, all manifestations and acts of living organisms are determined and are dependent on these phenomena, which naturally involves anxiety-superior.

The data in Table 9 also show the significance of this. To Question No. 8—Do you feel that most of your anxiety involves your specific superiority?—94 per cent of the subjects answered 'Yes' and the balance of the replies were also in the affirmative. The replies are in accordance with the actual biological behaviour of living cells. Every manifestation and activity involve patterns of organizations of specific superiority of behaviour organized by the constituent unit-lives of living organisms. Thus, every aspect of a living human organism is continually reorganized by its constituent unit-lives for specific superiority in perpetual interplay and competition in the universe. Anxiety-superior, therefore, is the outcome of these basic phenomena and remains fundamentally biological in character and in nature.

For the purpose of concluding, the following main points may now be made:—

(1) Nature is constituted of open entities. Thus organizational necessity, in perpetual interplay and competition, 'to re-form' or 'to reorganize' patterns of organization of specific superiority of behaviour of open entities to manifest themselves is the cause of anxiety-superior in nature. It follows that anxiety-superior is basic and is of compound origin.

(2) All anxieties or excited states are anxiety-superior as every phenomena in nature involve open entities' patterns of organization of specific superiority of behaviour for continuous change in the universe.

(3) Life is an individual open entity. Thus it cannot have generalized superiority, but has to organize patterns of organization in continuous interplay and competition with other entities' patterns of organization to manifest itself. These struggles are accompanied by anxiety-superior and are related to the way individual life organizes patterns of organization of specific superiority to survive in nature. There is here no other phenomenon but life, and any attempt to explain life with other phenomena caused by life or with fictitious concepts would not be life.

(4) As life is an open entity, any single act of a living organism involves patterns of organization of specific superiority of behaviour in interplays and competitions. Thus it is irrelevant how needs or goals may be divided or classified. Anxiety-superior is basic and is

of compound origin as are its excesses, which differ neither in principle nor in character in nature.

(5) Manifestations of living organisms are organized, co-ordinated and controlled by individual open unit-lives (cells) themselves in continuous interplay and competition within and/or from outside. It follows that behaviour and anxiety-superior are the outcome of events both in the environment and in the living organism itself, and find their support in the law in nature.

(6) Life is the phenomenon which gives rise to dynamic living organizations, the appearance of freedom, needs, goals, purposive behaviour, and of somewhat co-operative millions of independent cells (unit-lives) 'to organize' and 'to reorganize' in perpetual interplay and competition their own patterns of organization of specific superiority of behaviour to manifest, to reproduce, to co-operate and to defend themselves. Freedom of living human organisms to manifest anxiety-superior is therefore vital to survive in the universe.

CONCLUSIONS

This is the fifth study in a research series on the feeling of superiority and anxiety-superior. The aim of this investigation was to ascertain what the phenomena actually were and to show their significance in nature. Diagnostic interviews were conducted so as to extract more detailed information within the limits imposed by resources. It is not easy to sum up the results of these studies. However, in brief, some of the main points are:—

(1) Nature is constituted of open entities. Thus the law in nature is perpetual interplay and competition of entities 'to form' or 'to organize' patterns of organization to manifest themselves. Progressive evolution is an aspect caused by collateral but independent processes, 're-forming' and 'reorganizing' patterns of organization of specific superiority of behaviour, and their extension by entities themselves accompanied by anxiety-superior. Time and space do not constitute entities. Therefore they cannot cause phenomena and are irrelevant in nature.

(2) Continuous interplay and competition within and/or from outside of patterns of organization ensure each entity's specific superiority and freedom and eliminate nature being personified or having generalized superiority. Only entities are responsible for events or a sequence of events. All mutations (or characters) in nature, living and nonliving, are the result of the perpetual 'reorganizing' or 're-forming' of patterns of organization of specific superiority of behaviour of entities manifesting themselves. Changes and distances are caused by and are the outcome of these phenomena. It will thus be seen that progress comes from orderly progressive change of entities themselves and that time and space are but aspects of these changes.

(3) By reason of perpetual interplay and competition within and/or from outside of open entities' patterns of organization, an entity can never occur as a completely 'discrete' definable thing or as a closed system in nature. The actual properties, manifestations, and changes of entities, therefore, can only be understood in terms of their patterns of organization of specific superiority of behaviour upon one another and their anxiety-superior.

(4) The only causes of phenomena in the universe are open entities continually 'forming' and 're-forming' or 'organizing' and

'reorganizing' patterns of organization of specific superiority of behaviour in perpetual interplay and competition. Thus, each entity's specific superiority is also the outcome of these phenomena not only for transitive action or transient activity, but for susceptibility and receptivity, and is always directly perceptible. It follows that there is no other way to exchange from one state to another.

(5) In accordance with the law in nature, living entities continually 'reorganize' and nonliving entities 're-form' their patterns of organization of specific superiority in perpetual interplay and competition in manifesting themselves. Thus anxiety-superior is displayed by all entities in their behaviour and is basically important with respect to everything in the universe. Nevertheless, 'to form' does not offer an analogy with 'to organize.'

(6) In nature life is an individual open entity. Thus it has to organize to give rise to individual patterns of organization of specific superiority to manifest and to reproduce itself. Only life can organize to govern the course of development and behaviour, and therefore the fate of a dynamic living organism depends on life to organize and to reorganize it continually. It will thus be seen that changes in living organisms are the outcome of these phenomena and progressive evolution is an aspect.

(7) Individual living cells constitute the most important patterns of organization organized by life. Therefore, to satisfy needs and goals or to solve challenging problems always depends on patterns of organization of specific superiority of behaviour organized and co-ordinated by these unit-lives. The unity of life can be clearly seen from this basic fact.

(8) As nature is constituted of open entities, perpetual interplay and competition within and/or from outside eliminate generalized superiority. Thus justice and freedom to reorganize or to re-form patterns of organization of specific superiority for orderly progressive change are ensured for each entity. So freedom and its extensions are the outcome of these phenomena. These facts are responsible for the peculiarities of the relation of life to its surrounds and of the individual and his freedom in a society. Obviously conformity cannot exist in nature as the unity of the universe for orderly change is based on the mutual freedom and integrity of individual entities.

(9) Life as an individual open entity has to reorganize to protect the inviolability of patterns of organization of specific superiority for freedom to determine its own progression, to develop, to reproduce and to change in the perpetual interplay and competition in nature. Consequently the consciousness and behaviour of individuals are based on this phenomenon. It follows that, no matter what methods are used, anxiety-superior for freedom cannot be stopped as freedom is organized by life itself to survive in the universe.

(10) To re-form or to reorganize patterns of organization in ceaseless interplay and competition within and/or from outside of open entities in manifesting themselves is an organizational necessity. Thus all anxiety or excited states are anxiety-superior, as every phenomena in nature involve open entities' patterns of organization of specific superiority of behaviour for continuous change. The significance of these phenomena in understanding organisms or organizations in nature is obvious.

Life as an individual open entity cannot have generalized superiority. Clearly then, in these struggles, the primacy 'to organize' continually is a biological necessity. These struggles are accompanied by anxiety-superior and are related to the way life organizes patterns of organization of specific superiority to survive in nature. There is here no other phenomenon but life and any attempt to explain life with other phenomena caused by life or with fictitious concepts would not be life.

(11) Manifestations of living organisms are organized, co-ordinated, and controlled by individual open unit-lives (cells) themselves in continuous interplay and competition within and/or from outside. Thus behaviour and anxiety-superior are the outcome of events both in the environment and in the living organism itself and involve patterns of organization of specific superiority organized by unit-lives or formed by nonliving entities. It is irrelevant, therefore, how needs or goals may be divided or classified. Anxiety-superior is basic and is of compound origin as are its excesses, which differ neither in principle nor in characteristic in nature.

(12) All phenomena in nature are caused by entities re-forming or reorganizing patterns of organization of specific superiority according to the law in nature in manifesting themselves for orderly progressive change.

Life is to organize and is the phenomenon which gives rise to dynamic living organizations, the appearance of freedoms, needs, goals, purposive behaviour, and of somewhat co-operative millions of independent unit-lives (cells), which organize and reorganize in perpetual interplay and competition their own patterns of organization of specific superiority of behaviour to manifest, to reproduce, to co-operate, to defend themselves and to change. Freedom to manifest specific superiority and anxiety-superior of living organisms is vital to survive in the universe.

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APPENDIX "A"

Schedule

- (1) What do you think is the reason of most anxiety?
- (2) What do you think is the best way to overcome anxiety?
- (3) To reach a certain goal, do you feel that you need to have some degree of specific superiority?
- (4) Are you anxious to maintain your own specific superiority in reaching a goal?
- (5) Are you anxious about your freedom?
- (6) Are you anxious about maintaining your own specific superiority in the future?
- (7) Are you concerned when someone tries to dig into your personal life?
- (8) Do you feel that most of your anxiety involves your specific superiority?
- (9) Does it happen that you become concerned because you don't want to do as the others do?
- (10) Do you feel that your whole system is involved when you are excited?
- (11) Occupation
- (12) Age
- (13) Sex
- (14) Married Single.....

REMARKS

APPENDIX "B"

(a) Method

This experiment was conducted in the early fall of 1958 and in 1959 in the City of Ottawa, the capital of Canada.

The bulk of the data of this study was obtained by means of scheduled diagnostic interviews designed and administered by the writer. The Ottawa City Directory was used as a basis for sampling and 75 subjects were selected in a random fashion from the various occupational groups. These were weighted and 25 more were added to fulfill the requirements of representativeness, reliability and flexibility. No criterion was set up beyond that of age, over 17 years.

The questions were designed to throw further light on the deeper patterns of organization organized by life rather than to provide material for statistics. It is therefore important to understand the phenomena under investigation and, if necessary, to give an undistorted and informative picture of the phenomena (e.g. 'specific superiority' does not mean 'generalized superiority,' so it does not necessarily mean that one person is superior to another person). The questions were not formulated for psychological tests. The subjects should be informed of this and, if necessary, an explanation should be given. The experiment should be conducted in the simplest manner and the questions memorized so as to create a natural, not a test situation.

The policy of this experiment was to obtain a minimum of information and to make provision for more detailed information without prying into the respondent's personal life. There is no need for this and care was taken to obtain spontaneous answers. The time taken for the interviews varied from one individual to another, in the majority of cases lasting about ten minutes.

For further information, the history of method and description of the population, see previous publications under the same title (1953, 1955 and 1957).

(b) Reliability and Validity of the Results

The results of this study further confirm those of The Ottawa Pilot Study, The Ottawa Test-Tube Survey on Status, and The Ottawa Trial Survey on Personality.

