second complexity levels that this writer will be referring below when the term "quantum field structures" is used. (These are not organizational levels which refer to the three differentiated aspects we mentioned above and will shortly mention below.) So the use of the term "quantum field structures" is not a reference to the "fundamental" nuclear particles. The nuclear particles would actually constitute the third level of the complexity hierarchy. The atoms or elements would constitute the fourth level, molecules the fifth, the colloidal state the sixth, and so on.

Now let us briefly discuss the empirical rationale behind the derivation of the unitary principle and the unitary process and let us then attempt to better understand what Whyte means by the terms: the "norm," the "normalizing process" and "isolable processes."

Whyte begins his derivation of the unitary principle by pointing out that two major contrasted tendencies can be observed in all natural processes. One is the tendency toward the formation of units of local order and the other is the tendency to disperse these local formations of structural order. This latter dispersive tendency, the tendency toward maximum "disorder" of atomic and molecular systems and the dispersal of these structured systems, has hitherto been referred to (by quantum physics) as the physical embodiment of the entropy principle of the second law of thermodynamics. Whyte then proceeds to account for both of these major (empirically observable) tendencies in terms of the new foundation concept—the unitary field—and from this theoretical treatment both the unitary principle and the unitary process emerge.

Whyte has postulated above that each and every part of the unitary field as well as the field as a whole displays an intrinsic tendency toward its characteristic symmetry. This means that on the level of the individual 99
unitary field structures (the "polarized parts" mentioned above), each of the individual highly asymmetrical free energy structures of the unitary field manifests spontaneous formative tendencies toward changes in shape, orientation, and position in relation to one another. Whyte is essentially saying that the individual field structures have intrinsic formative properties which cause the free energy structures to form larger structural aggregates, the latter of which possess a higher degree of structural symmetry (an increased homogeneity of uniformity in form and movement) than that possessed by the individual unitary field structures when their properties are taken all together. (As we noted above, both the "process" and the "forces" of the field on both the local level and in the field as a whole result from the tendency of the field to approach its characteristic symmetry. Thus, the intrinsic tendency we are now discussing is both the source of "process" and the source of the "forces" which together take on the characteristics of a creative-causative-formative process which, in turn, forms structural aggregates within isolable processes in the field.) Thus, the individual unitary field structures possess an inner causative formative tendency to combine into larger structural aggregates of greater structural symmetry. As a result of this intrinsic formative field process, the basic free energy field structures become organized into larger structural aggregates which

manifest, besides an increase in structural symmetry, a variety of newly created qualitative and quantitative properties that appear by virtue of this increase in mass and complexity.

But as we also noted above there are two aspects of this intrinsic tendency on the part of the unitary field toward symmetry: a local tendency toward symmetry (which we have just discussed), and an overall tendency to bring each part into conformity with the whole. Let us now discuss this second tendency of the unitary field which is related to the dispersal tendencies observable in all natural processes. Whyte points out, in what is perhaps the most important and far-reaching of all innovations in his system, that what has been misleadingly called a tendency toward "a state of maximum statistical disorder" is, in fact, a tendency toward a state of maximum equipartition or maximum uniformity of a particular kind. This dispersal tendency or the tendency toward maximum equipartition in actuality, Whyte asserts, is a tendency toward an extended uniformity of structural asymmetry (free energy) in the unitary field as a whole. This aspect of the unitary field tendency also has intrinsic formative tendencies and force properties which take on the characteristics of an organizing process we shall discuss below. Thus, Whyte is asserting that the dispersal tendency and the random 100
fluctuations of quantum physics take on a particular form of order in the unitary field. We should be careful to note that Whyte is not denying that entropy increases in all real processes in the universe. He is simply rejecting the idea that this entropy takes on the form of statistical disorder or a tendency toward this state. We shall offer a new concept of entropy below that is more suited to the facts as they are now known.

The first aspect of the field process manifests itself in the formation of local structural symmetry while the second aspect leads toward uniformity of structural asymmetry in the field as a whole. Though the first tendency produces regions of differentiated order and the second tendency tends to disperse them, both assert a single formative tendency—from asymmetry to symmetry. Though the second tendency appears to be counter to the first, the dualism disappears when it is realized that the equipartition tendency is also a tendency toward symmetry—a symmetry of a particular kind. The symmetry is toward *uniformity* of structural asymmetry in the field as a whole. The intrinsic tendency for asymmetry to disappear in isolable parts of the field and in the field as a whole is a statement of Whyte's unitary principle without the term "isolable process" which we shall shortly discuss. The level of the uniformity of asymmetry in the unitary field as a whole, Whyte speaks of as the "norm" and the field tendency toward this norm is call the "normalizing process."

The intrinsic tendency toward symmetry of the individual unitary field structures and the field as a whole is the source of both the unitary principle and the unitary process. The unitary principle refers to the tendency of the field to move toward homogeneity of the part and uniformity of the whole. (Homogeneity and uniformity are each different aspects of the property called symmetry.) The unitary process refers to

the fact that both tendencies manifest themselves as causal "force" processes which possess intrinsic formative and organizational properties.

Now to explain the organizing properties of the normalizing process and what Whyte means by the term "isolable process." By definition, the intrinsic tendency of the unitary field to re-establish continuously the level of uniformity in the field as a whole is called the normalizing process and the level of uniformity is termed the norm. But as Whyte points out, in some structures one field tendency may predominate while in other structures the second field tendency may predominate; in still other structures the two tendencies may work in close cooperation with 101
one another. When the normalizing process predominates to too great a degree, the structures will be dispersed into its smaller components and/or exhibit highly asymmetrical properties. When the other field process predominates to a great degree, the structure will exhibit a maximum of homogeneity of form and structure and uniformity of motion or it will exhibit structural symmetry. When the two aspects of the unitary field process cooperate with the normalizing process predominating to some (non-disruptive) degree, the resulting structural organization takes on the character of an organizing process. That is, in such a structural organization the downward-swinging field process forms structural aggregates and the upward-swinging normalizing process, in its intrinsic tendency toward restoring the high level of structural asymmetry (free energy) in the structural aggregates, organizes, structures, or patterns (here synonymous) these individual structural aggregates into larger structural organizations which facilitate normalization. Or, as Whyte puts it: "All field processes consist of the normalizing of fields; all such processes lead either to static or cyclic structures facilitating their repetition; the normalizing process therefore leads to structures facilitating normalization..." In other words, the normalizing process continuously promotes its intrinsic tendency by synthesizing patterns of structures that facilitate normalization. Thus, Whyte is saying that when structural aggregates are formed which are stable enough to resist its dispersal tendencies, the normalizing process restores the high level of asymmetry or free energy in these structural aggregates instead and works through them to facilitate its intrinsic tendency by synthesizing them into patterns of structures that facilitate the attainment of the high asymmetry norm. The synthesizing or patterning tendencies of the normalizing process so that the structures synthesized promote the intrinsic tendency of the normalizing process are the organizing properties of the normalizing process. The normalizing process is also a creating process since new and novel properties appear as a result of the organization of the individual structural aggregates into larger structural organizations.[16]

[16 Thus, the upward swinging unitary field process or the normalizing process has at one and the same time a dispersal and a creative aspect. It either disperses a structural organization or restores it to a high degree of asymmetry (free energy) and in the latter case, structures it into a more complex pattern of structures which facilitate normalization. It is creative in the sense that new properties, not present in the smaller structures, now appear in the larger structural organizations. In this sense the normalizing process can be called a creative organizing process which, in

the course of following its intrinsic tendency forms structural organizations with new properties that did not exist before.]

The above development means that despite the highly dynamic 102
characteristics of the unitary field process, which include a dispersal tendency, the unitary field will form a dynamic structuring-organizing process if the two tendencies work in cooperation. Such a structuring-organizing process on any of the three major levels of the organizational heirarchy will manifest two salient characteristics. The process will be the spatio-structural region(s) within a particular system wherein structural aggregates are formed and it will be, at the same time, the region(s) of the highest concentration of field asymmetry (free energy) within that system. This means that only in such processes do both types of field tendencies appear. This is the significance of Whyte's statement "Asymmetry tends to disappear and this tendency is realized in isolable processes." In other words, asymmetry disappears in the isolable process with the formation of structural aggregates. This is one aspect of the unitary process. The asymmetry of the field as a whole is restored in the same isolable process (with the consequent restoration of the high level of asymmetry in the structural aggregates and their ensuing organization into patterns of structures that facilitate normalization.) This is the second aspect of the unitary process.

The system itself: a structure consisting of interrelated and inter-dependent parts which work together to produce some characteristic effect is, of course, the result of the organizational activity of the normalizing process. Thus, isolable processes are to be found at a functionally central region in the various types of system: the physical, biological and the sociological.

The concept of the isolable process applied to the empirical universe implies that such processes may be either temporary or long-enduring and may be of any scale of size between that of the galactic group and the smallest field structure combination. Since the organizational hierarchy is an empirical reality, the concept of the isolable process implies that spatially-separated and structurally distinct structuring-organizing processes exist on each level of the organizational hierarchy. Thus, the doctrine of the isolable process implies the existence of, and predicts the discovery of, a structuring-organizing (isolable) process on the physical, the biological, and the sociological levels of the organizational hierarchy. The empirical discovery of such processes will be major steps in the empirical verification of the process-field doctrine. As theoretical steps to facilitate the discovery of such processes, this whole book will be organized about the postulated existence of such processes.

A few additional points on the isolable process will be mentioned.
It is only within these spatially isolated and structurally differentiated 103
structuring-organizing processes that structural aggregates are really formed and it is only from such processes that the organizational control which structures these structural aggregates into larger structural

organizations facilitating normalization ultimately stems. This holds for all three levels of the organizational heirarchy. The normalizing-organizing process, thus, is the basic source of all one-way development in any particular in any particular system. One-way development refers to the increase in physical complexity over time in physical systems, to biological evolution and development including learning in the biological sphere, and to cultural evolution, for example, on the sociological level. The latter refers to the increasing veridicality of humanity's symbolic concepts (beliefs, attitudes, etc.) over a long span of time.[17] This one-way development, however, is not teleology or orthogenesis in the sense of an underlying process working toward a foreordained goal or which is immune to environmental influences. On the contrary, the normalizing process simply synthesizes patterns of structures that facilitate normalization; this is an intrinsic tendency of the normalizing process and not its purpose or goal. Moreover, the normalizing process continually reacts to offset environmental factors that lower the asymmetry norm and it does so by structural development. This is called adaptation or realistic learning in the biological sphere. However, such tendencies of the normalizing process appear in all spheres including the physical sphere. If such adaptation is not forthcoming, that is, if a particular system does not facilitate the normalizing process's intrinsic tendency, the system ceases to develop (or develops without reference to this intrinsic tendency such as in cancerous growth or in the meaningless organizational activities of human individuals or social groups in states of conceptual neurosis or psychosis), becomes rigid and is subsequently dispersed into its component parts by the underlying normalizing process.

Thus, Whyte conceives the unitary field to be a structured entity providing within itself the potentialities for all the structures (and spatial states), processes, organizational activity, and one-way development in the universe. Since field asymmetry is equated to free energy, when asymmetry disappears in isolable processes, free energy disappears in these processes; when the field restores its high level of asymmetry in the

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[[17] Political, economic and social systems, however, also evolve as adaptations to the environment. Political systems, for example, evolve from monarchies, to dictatorships, to democracies, and to continuous improvements within these democracies. All of these forms of evolution are various aspects of sociological evolution for each refers to but different aspects of the sociological system.]

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field as a whole or within the structures of the field, a high level of free 104
energy is restored in the field as a whole and in the structures within the process. Thus, the fundamental process found in all branches of biology (with the one exception noted above), appears in Whyte's system as the new foundation concept and the new unitary principle. Perhaps the most important and ingenious contribution of Whyte's system to fundamental thought is to reinterpret the concept of "statistical disorder" (which includes the chance occurrences and uncertainty of fundamental predictions) of quantum physics and to ascribe to it new organizational and creative properties. Thus, taken from the larger view of unitary theory, with the unitary structured field as it empirical referent,

"statistical disorder" reveals itself to be a particular form of order—the level (or the tendency toward this level) of uniformity of structural field asymmetry in the field as a whole. (That is, the unitary field produces these apparently random fluctuations in atomic and molecular systems as it goes about restoring its intrinsic high level of asymmetry.) The particulate viewpoint of quantum statistics obscured this vital point. Statistical theory has particulate prediction but the understanding of the larger context which gives the true meaning of the quantum events is lost. Relativity and quantum theory can be used to describe what is happening in the larger or smaller context but without the concept of the unitary field their interrelation is lost. The basic idea of unitary theory is that both the classical and statistical laws are functions of events going on in the unitary field which is basically described in its operations by the unitary principle. The field itself interrelated what is happening in both the smaller and larger context of the unitary field. Unitary theory thus connects and describes both the smaller and larger context and their interrelations.

Before we conclude this section of field theory, we must briefly discuss some of the important issues in physical thought from the viewpoint of unitary theory. First will be the issue of determinism vs. indeterminism. By putting forth the process doctrine, unitary theory rejects the idea of indeterminism of modern physical thought. This may be an era of "chance and uncertainty" due more to the conceptual techniques employed than to a true reflection of the basic nature of the universe. But unitary theory does not revive the determinism of events in space and time of classical and relativity physics; this is a legacy left over from mechanistic-materialism. The individual free energy field structures of the unitary field must vibrate at a fantastic rate of from 10^{16} to 10^{18} vibrations per second and hence, can not be precisely localized in space and time. But it is not necessary to know the position and velocities of the unitary field structures to predict and understand the 105
developmental tendencies of the unitary field. All that is needed to predict and understand any developmental tendency is a knowledge of the intrinsic properties of the field, its intrinsic tendencies, and a knowledge of the environmental conditions under which a particular combination of field structures operate. Thus, instead of statistical indeterminism or a determinism of space-time events, unitary theory suggests a determinism of properties. The knowledge of the properties of the unitary field provides us with both an empirical and conceptual determinism. Thus, although the unitary field is continuously undergoing change, stability and permanence of properties and tendencies are nevertheless present at the most basic level of the unitary field. As for conceptual determinism, unitary theory should yield a fundamental understanding of the origin, evolution, and present operation of matter, life and mind and the social group just from a knowledge of the intrinsic properties of the unitary field.

Next we will be concerned with the issue of time. Time, in fundamental thought, is defined through changes which involve motion. Unitary theory accepts this definition of time but points out that there are two different types of time which should not be confused with one another. There is, first, psychological time (or biological) time and then

there is physical time. Psychological time refers to the spatial ordering of quantum structural aggregates (see below) into specific sequences; these structural aggregates are continuously moving out of reticular space. (It takes about 100 ms. to form one of these individual quantum structural aggregates but if only one of these quantum structural aggregates is formed, it can be shown that we do not experience the phenomenon of time. Time depends upon the formation of the structural aggregate chain which itself is rapidly being formed as the normalizing process moves through reticular space.) When such aggregates are formed into specific sequences (or run off in reticular space as in recollection or memory recall) the attribute or property we experience as psychological time makes its appearance. Thus, psychological time is defined as that experiential phenomenon which arises from the interrelation of quantum structural aggregates as these are formed in, and are passing through, reticular space.

Physical time, on the other hand, is defined as the (motion-wise) approach of the fundamental free energy field structures to one another in space as these form more symmetrical quantum field structures. Thus, the asymmetry to symmetry movement of the unitary field structures, as they form quantum field structures on the most basic level of the field, is defined as physical time. Such movement of the fundamental unitary 106
field structures with respect to one another, for example, is responsible for radio-activity. (See below.) Asymmetry to symmetry, then, in a given physical system points the direction of events in time. In a given isolable system, a more symmetrical state is necessarily later in time than a less symmetrical state. Thus, the structural organization of the moment representing the history of the complex system is the empirical referent of time's arrow for it embodies all past transactions of that system each step of which is dependent upon what went before. In other words, time is absolute in the sense that its passage can be fixed and determined because it appears as a structural property of the unitary field. No matter what happens in the psychological sphere of an observer, the passage of time is fixed in certain strata, that is, the passage of time is fixed in the structural pattern of the unitary field. Thus, for example, the measurement of the simultaneity of two distant events in the physical sphere is open to us for unitary theory implies that the structural pattern wherein the two simultaneous events transpired is open to our inspection at our leisure even long after the two events have passed. What remains for us is to develop the experimental and methodological means for detecting and interpreting these "fixed time patterns" in the unitary field.

In the three systems, the passage of time is basically mediated by the same structure—the quantum field structure and the quantum structural aggregates. (In this regard we should remember that the individual human is the unit of all social structures.) In all three systems, the passage of time is a manifestation of the unitary principle and it indicates we have a universe in process from asymmetry to a greater symmetry. We shall take up a further development of the time concept in both the physical and biological spheres below.

Now the mode of process which mediates one-way development in biological and sociological systems will be considered. By what mode of process are the structures (stimuli) of the present interrelated with the structures of the past (memories) so that both are telescoped into a current process (such as perception)? This is part of the mechanism which mediates the continuity we have called one-way development. We have postulated that the normalizing process basically mediates the development of structural organizations which facilitate normalization and that this results in one-way development. But how, for example, does the normalizing process cause a current stimulus to combine with past memories so that both appear in our psychological processes and which then results in the one-way development we call learning? That such 107
telescoping does indeed occur has been demonstrated in many experiments by the "transactional" psychologists. Mechanical-materialistic theorists certainly recognize the problem but their attempt to provide an empirical basis for the phenomenon has thus far led to failure. Many mechanical theorists in fact seem to prefer to ignore the problem and simply speak of present stimuli "interacting" with specialized areas of the nervous system. We will introduce a new concept to resolve the problem below. We will use the term "transaction" to refer to this new mode of process as opposed to the term "interaction." We will postulate that as a stimulus goes into a system, an interlocking process occurs (which we shall also call coupling) between a present stimulus and a configurationally similar memory already present in the system. The interlocked or hooked memory is detached from its memory site and swept to the structuring center in the reticular formation. The increasing complexity of the incoming stimulus we shall also speak of as the complexing process. Thus, interlocking and coupling are synonyms; complexing and the transactional mode of process are synonyms. We shall come back to this fundamental problem a number of times below.

Next, we must consider the importance of methodology in unitary theory. By rejecting the mathematical complexity of current physical theories, Whyte does not mean to diminish the importance of methodology in fundamental thought. In fact, Whyte goes in the opposite direction for he asserts that in addition to the three fundamental disciplines which should form the science of a unitary science there should be a fourth discipline, that of methodology. Methodology would consist of mathematics, logic and semantics. What both Whyte and this writer are rejecting, in addition to the mathematical complexity of modern physical thought, however, is the tendency to use quantitative technique as a surrogate for empirical referents which must be discovered by experimental research instead. When the power and prestige of mathematics is indiscriminately used to pronounce a finality of thought on a particular theoretical idea or when quantitative technique is used as a prestige adjunct to shore up the sophistication of a particular idea or field of investigation, it leads to an illusion of sophistication and, in fact, discourages empirical research instead of the reverse. When quantitative technique is used in this manner, the techniques themselves tend to acquire thing-like properties which actually belong in the empirical referents themselves. This tendency toward reification in mathematical

thought is perhaps one of the most important contributing factors to the enormous complexity of modern explanatory quantitative doctrine. What 108
then is expected of methodology by unitary theory? First, from semantics, unitary theory expects veridical concepts for all of the sciences. Veridical concepts are only those which have full veridicality in the full sense of the meaning of that term. The establishment of veridical concepts is first the responsibility of the experimentalists and theorists in the various fields of science and then it is the primary responsibility of the semanticist. From logic, unitary theory expects the veridical concepts to be interrelated into a fully coherent and internally consistent system of knowledge. The best that can be expected from the unitary theorist are crudely related concepts. These are to be accepted in the spirit of approximations by the logicians whose task is to increase their internal consistency. For the mathematician a most challenging task remains, for a mathematical foundation for unitary theory is urgently needed. Drawing on the work of the semantician and logician, the mathematician is to represent the unitary field structures, the unitary field, and its intrinsic tendency with new mathematical terms that still remain to be developed. This would also involve defining the properties and intrinsic tendency of the unitary field so that these properties and tendencies can be measured. Time must be included in the new concepts as the historical development of the unitary field. Time does not exist when the field is in its asymmetrical state but begins to exist when the field displays its intrinsic asymmetry to symmetry tendency. When the state of maximum symmetrization occurs in a particular system, time stops. The latter thus provides for an absolute zero point. The new mathematics should provide all the properties of matter, living processes and the groups—all their formative tendencies, organizational properties, and all one-way development. This is an undertaking of the first magnitude so methodology well deserves its status as an independent discipline on part in importance with the other three branches of unitary science.

Lastly we shall consider the problem of space from the viewpoint of unitary theory. As noted above, Maxwell conceived of space as a rigid, fixed and stationary framework composed of material mass points which were spread throughout the universe. These material mass points supposedly displayed periodic up and down vibrations which were the source of the transverse waves which transmitted the electrical and magnetic “field stresses.” Lorentz accepted Maxwell’s fixed framework concept of space but put forth a new version of the mass points. In Lorentz’s system the material mass points became electro-magnetic points which acted upon atoms and molecules (moving through the space 109
medium). This was used by Lorentz to account for what later became known as the Lorentz-Fitzgerald Contraction. In accepting the null result of the Michelson-Morely experiment, Einstein thereby rejected Maxwell’s concept of space as a fixed framework and later introduced the idea that space might be regarded as the gravitational field. This writer will offer an entirely new concept of space from the viewpoint of unitary theory below. In many respects this new concept of space is one of the most fascinating ideas to emerge from unitary theory. What hitherto has been regarded as “empty space” reveals itself as containing some of the most

important structural organizations in the galactic group. From the viewpoint of unitary theory, a new, different and wondrous galactic environment emerges which is as comparable to the old views in differentiation as a Chinese tea garden is to a desert of shifting sand.

The writer will derive below, as a consequence of the application of unitary theory to the new views appearing in modern astronomy, the idea that space is to be conceived as vast extensions of quantum field structures which are relatively permanently coupled with one another via the coupling properties of a particular type of "spread-out" quantum field structure. This conception of quantum field space, though suggesting relatively fixed properties in vast regions of the galactic group, is certainly not a static version of space.[18] In fact, the individual quantum field structures of space are in a state of high vibratory motion. This motion may arise from two related sources. First, the quantum field structures move through an evolutionary asymmetry to symmetry continuum just as does any other field structure but since our galactic group is still very young (per the rationale below), these quantum space structures still display highly asymmetrical properties probably very close in vibrational rate to that of the free energy field structures themselves. The second source of motion, which is of course involved with the first, is due to the normalizing action of the unitary field restoring its asymmetry norm. The space structures are close to the unitary (free energy) field structures in size and hence, partake of this motion.

The type of space concept which will be offered below will be a concept that suggests that space is limited to a particular galactic group. When a galactic group comes into being, it generates its own space and

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[18 Space may have variable features ranging from that of a relatively fixed framework to a pliable space that is shaped and molded by the normalizing process. The former property of space suggests that a relatively stable framework of space can be found in our galactic group which could serve as an absolute framework for intra-group phenomena.]

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when it disappears, its "space" disappears. In other words, this writer is 110
suggesting that space is generated by the structuring (isolable) process of the galactic group. This has important consequences for it suggests that the normalizing process has an organizational control over quantum space with the result that it can shape this space into structural patterns which facilitate normalization on the galactic level. Thus, the normalizing process can form channels in quantum space to facilitate its intrinsic tendency much like it forms channels in our nervous system to facilitate its intrinsic tendency on the biological level. Structural asymmetry, for example, flows into the isolable process (of the galactic group) from the unitary field of the universe via these channels and nuclear debris from stellar explosions flow out (of the galactic group) into the unitary field of the universe via these channels. (Quantum space, however, is not a leak-proof system for it allows nuclear debris to escape into intra- and inter-

galactic space. This the astronomer observes as cosmic dust. This is perhaps the main source of the "dust" which the dust-cloud theorists employ as a concept in their mechanical theories of the origin of stars and planets.)

These space structures do not display uniform motion; in fact, their motion is highly asymmetrical about their equilibrium points. This leads us to reconsider the results of the Michelson-Morely experiment. This writer suggests that the slight random shifts in the reflected light (photon) beam detected by the Michelson-Morely experiment is what is to be expected from the quantum view of space. In other words, quantum field structures do influence the photon beam but these influences are the influence of randomly or asymmetrically moving spatial field structures; hence, these influences are the causes of the random shifts of the photon beam observed by Michelson and Morely and others. These random effects of quantum structured space on a beam of photons, however, are of very small quantum-field-structure magnitude and became of the very randomness of the influence, the effects may well cancel out or be minimized in repetitions of the Michelson-Morely experiment. What is really needed to demonstrate the quantum field effects on a beam of photons is a photon beam which travels over a long expanse of space and over long eons of time. In other words, it would take astronomical magnitudes of distance and duration for the effects of a "quantum structured space" on a photon beam to accumulate in large enough magnitudes to be observed. It so happens that natural conditions provide us with such a situation that overcomes the possible limitations of the interferometer experiments—this is the interpretation which can be put 111
on Hubble's "red-shift" discovery of the late twenties. Thus, it may be that as photons from more and more distant galaxies reach our spectroscopes, more and more of both their speed and vibrational energy is lost due to two factors: an interfering quantumly structured space and the intrinsic symmetry tendency of the quantum field structures composing the photons. This means that the velocity of light may not be the universal constant it is believed to be because, a precise measurement, it is predicted, of the photons showing the greatest red-shifts will show that these photons are traveling at velocities less than 186, 282 m.p.s. And it means that the red-shift is to be interpreted in terms of what goes on within the photon and not as the mechanical Doppler effect. These implications will be drawn out below but it can be said that, aside from rejecting some major assumptions in Hoyle's system, such as his acceptance of the mechanistic interpretation of the red-shift (that the red-shift, by analogy to the Doppler principle, indicates that the universe is expanding), these implications are in accord with Hoyle's steady-state view of the universe.

Let us now summarize Whyte's new version of unitary theory which has been derived from fundamental thought. What are the foundation concepts of Whyte's unitary theory and what are the fundamental relationships between these concepts? There is but one foundation concept and that is the unitary field, and there is but one fundamental relation describing how the foundation concept operates and that is the unitary principle. One field is postulated to comprise the whole of the

universe and it possesses, in its every part and as a whole, the intrinsic properties of structural (field) asymmetry which Whyte equates with those of free energy. The unitary field has one intrinsic tendency with two aspects both of which are described by the unitary principle. The unitary principle asserts that these two aspects of intrinsic field tendency can work together to form a unitary process. Unitary theory asserts that this unitary process can serve as the fundamental explanatory hypothesis with which to explain all human knowledge. The underlying simplicity of structure and properties of the unitary field and its simplicity of operation is the justification for the "faith of the pure scientists" to whom unitary theory owes its greatest debt. The great task which remains for pure science is to explore the still largely unknown universe using unitary theory as a map. And no lesser goal of this work will be to raise the spirit of man to the apogee where it belongs and from which mechanistic science has progressively displaced him.

In order that the development below might be better understood, a 112
bird's eye view of what is to follow will now be presented. Unitary theory asserts that we should be able to derive the major concepts of science from the intrinsic properties of the unitary field and its operation. How, for example, will unitary theory attempt to explain the origin of matter and the spatial (field) states of modern physics? The particles and spatial states of modern physics will be asserted to be concentrations and extensions of smaller quantum field structures. Unitary theory moreover, asserts that when these 30 nuclear particles and spatial states make their appearance, they represent the unitary field in some state of evolution. As a consequence, unitary theory will predict the discovery of an isolable process in galactic space wherein the quantum field structures, the spatial states and the 30 nuclear particles are currently being formed from unitary field structures. Unitary theory will point out indices of this creative process which will suggest where to look for this isolable process in galactic space. Unitary theory will also suggest how the two yet undiscovered levels of the complexity hierarchy can be isolated from living systems.

How then, will unitary theory attempt to explain the origin of life and mind, the biological processes? Unitary theory asserts that the evolutionary rise of life and mind on this planet, basically involved the differentiating out, by an ever-changing environment, of the free energy properties of a DNA-molecular unitary process which can be conceived to have existed on this planet at its aboriginal beginning. We shall see in the works of Blum, Pringle, and von Bertalanffy that mechanistic biology has already arrived at this viewpoint in regards to the origin of the salient attributes of life such as reproduction, the system of catalysis on the biochemical level, and the features of the steady state of the physiological level.

As for the origin of the human mind, the unitary view is here most revolutionary of all. The mechanistic geneticist has long asserted that no direct relationship exists between environmental variables, the genetic structure, and the biological characteristics that have been evolved.

Unitary theory will insist that, on the contrary, such relationships do indeed exist and that the mechanistic biologist has been led astray by the dualistic philosopher who has attempted to invest "mind" with an independent existence and an un-discoverable empirical structure. Over-reacting to this viewpoint, the biologist has regarded the psychological processes as less real than say, a leg, wing or the color of eyes. If one groups the sensory processes on the tropistic level of all plants and animals one discovers that they correspond to the common environmental 113
variables. This insight is, of course, not new. But what is new is the relating of both these environmental variables and sensory processes to the properties of free energy, for it is known that these environmental variables are the very ones which influence the free-energy change value of free-energy chemical processes. Thus, if a DNA molecular system appeared as a miniature unitary process at the aboriginal beginning of this planet, the DNA molecule had a norm of high free energy which the normalizing process was constantly maintaining. The common environmental variables were continuously disrupting this norm with the consequent formation of quantum structural aggregates (in the formative downswing of the unitary process) which were thereby configurationally related to the environmental variables that caused the downswing. But the normalizing process was as continuously operating in the DNA-unitary system, restoring the norm which it accomplished by using the quantum structural aggregates to synthesize enzymes which in turn synthesized patterns of structures that offset the environmental sources of norm disruption. The evolutionary resultant of this continuously ongoing process which evolution G. G. Simpson traces in his book *The Meaning of Evolution* was the gradual appearance of the tropistic level sensory processes, the perceptual processes and the cognitive processes whose evolutionary development were completed two billion years ago, seventy-five million years ago, and in the present respectively. [19] (This writer would maintain that cognitive evolution is still going on within man and is certainly going on in his culture and society.) The highest development of this process in the biological sphere is in man's thinking process which is actually the normalizing process appearing in a highly differentiated form. Thus, this is an indication of how truly revolutionary unitary theory is for what is regarded as a dispersal tendency or a tendency toward maximum disorder in modern quantum physics, from the viewpoint of unitary theory becomes the basic creative organizing process which is responsible for all of man's sublime creations in the arts and

[19 It should be noted that it took two and one-half billion years to evolve the tropistic level processes. Most, if not all, textbooks state that the tropistic processes originated two billions years ago with the origin of the receptor, motor and association neurons. (See for example, Morgan's textbook: *Physiological Psychology*.) This, of course, is based on the cell doctrine which in this case leaves out two and one-half billion years of prior evolution. These three specialized neurons are conceived by the mechanist to have formed the first neural unit—the reflex arc. Modern day mechanists such as Hebb assert that the nervous system is little more than an elaborated reflex-arc consisting of receptor-association-motor neuron areas in the nervous system that are somehow connected by reverberatory circuits, neural cell assemblies and even single transmission lines.]

sciences. Another significant implication of the unitary view is the predicted discovery that both the gene and the fundamental psychological parameter—which underlies both psychological process and memory—are a modified free energy field structure, the quantum field structure and the quantum structural aggregate. And as Wheeler pointed out some time ago, and for which he was disparaged, genetic evolution, maturation, ontogenetic development and learning all form a continuum.[20] Underlying this continuum is quantum field structures and the normalizing process which has been continuously utilizing quantum field structures to synthesize patterns of structures that facilitate normalization and which, in currently living organisms, after conception, is at the basis of all maturational and ontogenetic development including learning. Thus, we will elaborate the viewpoint below that all sensory processes of all plants and animals of the entire plant and animal kingdom without exception are to be found in potential form in the properties of free energy and that all that was needed (aside from a system of catabolism) was an ever-changing environment to differentiate these potentialities to form the psychological processes of living organisms. 114

How does unitary theory attempt to account for the origin, evolution and current operation of the social group of sociology? [21] Mechanistic thought uses a bio-social analogy between unicellular organisms and the development of multicellular organisms to explain the origin of the group. Multicellular organisms are said to have evolved from what were originally competing cells; the selection of the environment was in this case determined by the superior survival value of the cooperative structure. So by analogy:

> Social animals evolved from solitary ones for similar reasons; and, indeed, there were millions of years during which there were only solitary animals on earth, and not yet their organization into social structure.
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> Oppenheim and Putman

Unitary theory rejects this idea and maintains instead that all interrelated

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[[20] This is the Wheeler of learning theory. See, for example, the 1948 edition of Hilgard's *Theories of Learning*. In regards to Wheeler's assertion, note the similarity between what Skinner of Harvard has established and calls "instrumental learning" and what Tinbergen et al. have established to be an instinct. The two are identical which suggests that the latter arose from the former. In other words, what has been learned (at least on the tropistic and perceptual levels) *can* be passed on in inheritance.

[21] Since the greater part of sociology is still in the process of emerging from the philosophical stage of development, unitary theory has very few veridical concepts either to resynthesize or reinterpret in unitary terms on the sociological level. As a consequence of this situation, we will elaborate on some sociological principles in this section that will not be found below in order to show how unitary theory may be subsequently applied to sociology.]

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and interdependent structural organizations in the universe (which includes all groups and systems in the universe), are the *cyclic and static structures* that the normalizing process synthesized and organized in its intrinsic tendency of promoting its asymmetry norm. Thus, on the social level of living organisms, social structures were formed by the normalizing process working *in organisms* (an *inner process* as contrasted to the *outer process* of mechanistic biology) synthesizing various patterns of social organizations that facilitated normalization in the (individuals of that) group of organisms. Spelling this out in more detail, the high asymmetry norm of the normalizing process may take on as many differentiated norms as there are differentiated sub-systems in the living organism. This means that on the tropistic level of living organisms, the asymmetry norm takes the form of the externally oriented sensory processes and the internally oriented physiological drives and the kinesthetic (proprioceptive) muscle modality;[22] on the perceptual level, the asymmetry norm takes the form of the perceptual processes and the emotions; on the cognitive level, the asymmetry norm takes the form of the cognitive processes and the feelings. Thus, from this point of view we can conceive that the most primitive social group of the human, the family, originated and was first sustained by the normalizing process working through, perhaps, the sex drive, and the basic emotion of pleasure which is also sometimes called love.[23] But the humans of the 115

[22 The term "kinesthetic" or "kinesis" refers to the sensations experienced due to internal muscular movements which stimulate receptors situated in the muscles, tendons and joints. However, due to the rejection of "mentalism" by behavioristic psychology, both of these terms have been gradually replaced by the more physiological terms: proprioceptive stimuli and the proprioceptive system. The writer, however, will use both terms below. One should not, however, slight the historical importance of this sense in the history of psychology. In perception, for example, Woodworth and Schlosberg refer to the over-emphasis on concepts employing motor concepts as: "the great god-eye movements!"

23 Extrapolating this viewpoint to the social group of the present: when maturation is completed at the end of the period which is called puberty, the boy or girl's psycho-sexual system is now at a high asymmetry norm. Hormones, perceptual stimuli and internal cognitions can disrupt this norm, the normalizing distortion appearing as the (tensions related to the) sex drive. The normalizing process in attempting to restore its norm in this particular sub-system, leads to the satisfaction of the sex drive and to the experience of the basic emotion of pleasure. The sex act, the pleasant emotion experienced, and the conception of the new infant all comprise the formative downswing of the unitary process on the bio-social level. The subsequent development of the individual from the moment of conception onward, the satisfaction of the new-born infant's physiological and emotional needs and the subsequent socialization of the child by the parents (the parent "introjects" the norms and values of the group into the child at the age of four to six), and all subsequent organizing social activity on the part of the maturing child and adult, all these aspects of the developmental process are part of the upward winging normalizing-organizing process on the bio-sociological levels. In other words, the

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primitive family group had other forms of the asymmetry norm in the hunger, thirst, comfort (cold, warmth, elimination) etc. drives, in the 116

basic and developed emotions of anger, fear, pleasure, jealousy, disgust, etc., and in the developed feelings related to the cognitive level. All of these were subjected to normalizing distortion by the ever-varying external and internal environments and by the ever-active thinking process of the organism. But the normalizing process was as continuously operating in the psycho-motor systems of the human, synthesizing patterns of psycho-social structural patterns that were related to the particular norm (and to the variegated memories related to that norm) whose high free energy level was being lowered. Thus, for example, the normalizing process persistently working through the psycho-motor systems of the organism to sustain the asymmetry norms related to the hunger, thirst and shelter drives led to the social origin, gradual evolution and current interrelated structural organizations that we call the economic system which includes farming communities, towns and cities. Similarly, the normalizing process working through the emotions of anger and fear gradually led to the development of the military systems of human societies. (To this day, most of the laws of human society are based on the emotion of fear and the threat of punishment. Police forces and armies which should be used to maintain the integrity of various societies are often used instead to egotistically advance the societies.) The same normalizing process working through the feelings and the psycho-motor (speech and writing) processes of the cognitive level led to the origin and gradual evolution of the value and normative systems of man which we term collectively "culture." [24] Thus, all of these social organizations, the origin, evolution and present operation came about due

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norms and values introjected into the child by the parents (and other socializing agents) and the social patterns formed by the child and the (mature) adult in society are but different forms of the static and cyclic structures that the normalizing process uses to facilitate normalization.

[24] On the highest level of the cognitive-process hierarchy, there exist complex structures which are called traits. When interrelated, these traits constitute the "self" or the personality of the individual. (There is considerable debate in the literature in relation to the designating of the three cognitive level processes. Some writers call all three cognitive levels the personality and designate the sixth level as the "self" of the personality. Other writers ignore the self concept and designate all six levels of the psychological processes as the personality. In the latter case, the lower three levels are included in the personality concept because affective individual differences are known to exist on the lowest tropistic level and the two higher perceptual level processes.) In the development below, the writer designates the highest or sixth level of cognitive-memory organization as the level of the personality; the fifth level as the level of symbolic concepts; the fourth cognitive perceptual level (recently discovered by Penfield) as the level of specific past experiences. Thus, in the writer's concept, personality is restricted to one level and the "self" concept is excluded. As we shall see below, the normalizing-thinking

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to the normalizing process forming larger structural organizations that 117
facilitated the normalizing process working through the various processes of the individual. Thus, all social organizations must be oriented toward facilitating the various norms in the (healthy) individuals comprising a

society or that social organization will pass away. But, on the other hand, the individual must facilitate the development of all social organizations of which he is a part or the individual will be selectively eliminated for, in facilitating the development of these (healthy) social organizations, the individual is actually facilitating his own development.

In the development below, note particularly the important role ascribed to the economic system on the sociological level. Also note the gradual evolutionary appearance of the asymmetry norm of the unitary field on the various complexity levels of the sociological sphere. In the economics section, we shall postulate that the norm and the normalizing process progressively appeared in an evolutionary manner on the biological level and then subsequently through various stages of increasing complexity, appeared on the sociological level. The norm and the normalizing process thus appear in its highest degree of differentiation on this planet as the high energy (power) level and the various groups related to the productive apparatus (the economic system) on the sociological level. It is the economic system and its agents, then, that primarily interrelated the various sub-groups of a society into the larger system which is called the society. All social groups must facilitate the healthy growth of the economic system or they, or the society, will be subsequently selectively eliminated by growing rigid and then being dispersed or dominated.

The unitary view applied to society is an extremely powerful conceptual

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process subserves the function of the "self". In so designating this psychological hierarchy, the writer is following the clinical, neuro-physiological and particularly the literature in experimental psychology. The personality, moreover, belongs on only one level, the highest, for it contains all lower level processes in an abstracted and generalized form. Since all traits contain feeling components and since they form a whole in the personality, we are justified in speaking of the "personality norms" of the individual. Thus, all adjustive mechanisms both normal and abnormal which includes Freud's list of dynamisms, are the "static and cyclic" (psycho-motor) structures that the normalizing-thinking processes use to maintain or enhance the personality norms. So on the highest cognitive level, the normalizing process protects (maintains the integrity of) and develops (actualizes the potentialities of) the personality through these adjustive mechanisms. On lower levels of the psycho-biological hierarchy, the normalizing process also maintains and enhances the psycho-biological processes via initiating internal and external patterns of muscular reactions (behavioral mechanisms). The maintaining activity, on these lower levels, is called the homeostatic system and the biological enhancement is called biological growth. All lower levels, however, function so that they contribute to the actualization of the highest level—the level of the personality.]

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tool for it affords sociology both empirical and conceptual criteria by 118
which to determine the norms and values that would lead to healthy development in the various aspects of society. The unitary view, for example, implies that a healthy economic system of any society must take the form of a unitary process and operate on the unitary principle. A

further consequence of the unitary view applied to sociology is the implication that the various aspects of society all undergo the one-way developmental change that is called evolution. Thus, in order to arrive at healthy norms and values for a particular society, we must determine first whether that society's economic system operates on the unitary principle. Then we must determine whether or not the other aspects of society are evolving in accordance with their particular developmental tendency and in accordance with the particular environmental conditions that currently prevail. New values and norms are needed in both or either case if these criteria fail to be borne out.

A particularly interesting and pertinent example of an aspect of society "evolving in accordance with its particular developmental tendency and in accordance with the particular environmental conditions" is that of cultural evolution. Nineteenth century scholars of cultural evolution maintained that humanity's cultures evolved from simplicity to complexity (after the Darwinian concept of biological evolution), from one cultural epoch to another, via the agency of a specific invention that caused the transition from one cultural epoch to another. This view also maintained that cultural evolution was un-influenced by environmental conditions and that cultural evolution proceeded in a one-line (unilinear) direction of development. All of humanity's cultures were also believed to be evolving toward some ideal cultural state which was interpreted to be that of the middle-class culture of the late 19th century Europe. This viewpoint was actually Aristotle's concept of orthogenesis appearing in the field of culture which view collapsed as soon as it was seriously tested by field research in the early part of the 20th century. As a consequence of this loss of faith in an evolutionary doctrine as applied to culture, the field of anthropology fell into a discipline consisting of a collection—as one anthropologist puts it—of "shreds and patches." In fact, up until ten years ago, the only concept of cultural evolution that anthropology had even half seriously maintained during the 20th century was the personality-type approach such as that of Ruth Benedict. This approach looked for patterns in the customs and traditions of a group that resembled some well-known personality type such as dominance-submission. Then, the cultural pattern was postulated to be the manifestation of what was once an individual 118
personality type. Thus, over the course of time these personality types led to particular forms of behavior that were fixed by the culture into the traditions and customs of that society. This approach has much to recommend itself especially in its successful tracing of the origin of many specific cultural practices, but few anthropologists are completely satisfied with this approach for it has little to say about the larger problems: how did cultures originate and what was the driving force (if any) behind cultural evolution?

The anthropological approach to cultural evolution of the past ten years resembles the 19th century approach to the problem but two major innovations have been introduced. The new approach holds that the culture of a particular society is indeed influenced by the changing environment and it is, in fact, the customs, the traditions and the

institutions of a society that are the adaptive responses to a new and changing environment. The second major innovation is that there are conceived to be many separate lines of cultural evolution (the new approach, in fact, is called the "multilinear" approach) and not just the one leading to some ideal state as envisioned by the 19th century cultural evolutionists. According to this view, the reason that there are many separate lines of cultural evolution arises from the fact that the environmental conditions to which societies adapted differed widely in the variability. For example, the environmental conditions may vary from the tropical rain forests, to the temperate zone, to those conditions experienced in the lands of the perpetually frozen tundra. This approach is sound in many respects but one of its salient drawbacks is that it leads to an almost nilistic view when it comes to evaluating the values and norms adopted by various societies or by various sub-groups or individuals within a society. To take an extreme example, Socrates and Hitler both adapted to their environment in accordance with their needs and each developed a particular code of values and norms and a particular cultural viewpoint to sustain these norms and values. Would not Socrates and Hitler, or anyone else for that matter, judge each other's value system differently (and, hence, would not all value judgments be relative to a particular person's needs?) and would not they all be right because they are all adapting to their environments according to their own needs?

In the development below we shall accept the first major innovation of modern anthropology in regards to its approach to cultural evolution but reject the second. That is, unitary theory accepts the notion that human culture was the resultant of a human society adapting to an ever-changing environment but rejects the notion of multilinear evolution and 120
the relativistic approach it implies with respect to judging the health of various value and norm systems and cultural viewpoints adopted by a particular society or by sub-groups or individuals of that society. The social sciences do indeed have criteria by which to judge the values and norms of societies, sub-groups and individuals and in fact, this evaluation goes on constantly either implicitly or explicitly such as by the economic rewards and group prestige ascribed to particular group roles. Unitary theory, moreover, implies that the cultural systems of mankind do manifest a particular healthy developmental tendency. This healthy tendency which can be applied to a specific culture or to the cultural systems of humanity as a whole, and by which various cultures can be judged, is the increasing veridicality of a particular society's symbolic concepts over time. By symbolic concepts the social scientist means humanity's beliefs, attitudes, explanatory hypotheses, values, etc. (Values are learned goals; for example, the way an individual relates to his universe is a learned cultural goal or value; the attitude of acceptance or rejection of racial differences in a society is a learned social goal or a social value.) All of these are but different varieties of symbolic concepts. Human societies and, hence, their cultures must have started with unveridical concepts when man first attained speech, but humanity, in responding to its ever-changing environment which includes other humans as perhaps the most important part of that environment, has

progressively evolved more and more veridical concepts. This is the evolutionary concept of unitary theory applied to cultural evolution. Unitary theory maintains that all previous anthropological approaches to cultural evolution, both classical and modern, have included too much in their concepts of culture and cultural evolution. (In fact, it appears that the modern "multilinear" approach is more interested in technological or economic evolution. This idea has been derived by anthropologists studying the effects of modern technological innovations on backward South American Indian tribes.) To be sure, all aspects of society are influenced by culture but these aspects are not culture, per se.

Unitary theory, moreover, maintains that there is a driving and selective force behind cultural evolution and this driving-selective force is the normalizing process working through humanity's variegated concepts. We have already pointed out the experimental conclusions of Vernon and Bartlett which state that man has an intrinsic drive on the perceptual level (which he shares with his fellow animals) to perceive the surface environment clearly and an intrinsic drive on the cognitive level to understand the hidden face of nature. These were long term instigators of cultural development; however, equally potent instigators leading to cultural change and cultural evolution, were the subjective affects such as the physiological drives, emotions and, particularly, the feelings, all of which could be expressed through this fifth or symbolic concept level of the human's psychological hierarchy. These subjective affects provided the significance (the normalizing distorting or norm restoring value) of the cognitive symbolic concepts. It was these affects that continuously drove the human to conceptualize and reconceptualize his environment; so it was these affects acting through symbolic concepts that led to the origin of culture and which underlie the driving-selective force that results in the one-way evolution of human culture. Unveridical concepts lead to norm distortion of various types and only by evolving progressively veridical concepts was humanity able to adapt to its changing environment. Veridical cultural concepts must promote the maintenance and actualization of the human individual, the social group, the society, the nation, and the world community of nations or that culture, either in part, or as a whole, will be selectively eliminated. Under different conditions, the maintenance and actualization of different social units assumes a greater importance over other units. Under conditions of the nuclear age, the maintenance and actualization of humanity as a whole has attained supreme importance. Cultures that do not, or which cannot, promote this actualization and maintenance of humanity under the new conditions of the nuclear age are currently undergoing selective elimination.

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The credit for originating the idea that cultures change and evolve, and *evolve in a particular cognitive direction,* should perhaps go to the Scot, August Comte, the philosophical founder of modern social psychology. Comte maintained that cultures pass through three stages: the theological, the meta-physical and the positivistic. Thus, if we introduce the first cultural era of humanity into Comte's scheme, the very long era of mythological belief or the cultural era of superstition, we

would have substantially traced Comte's view in the development above. Thus, the four major explanatory hypotheses that we have traced above mark the four great cultural eras of: superstition, religion, philosophy, and science. Each subsequent hypothesis must represent a major step in the increasing veridicality of humanity's symbolic concepts. Thus, unitary theory asserts that not only should the concept of cultural 122
evolution be restricted to the study of the increasing veridicality of humanity's symbolic concepts but that the student of cultural evolution need only attend to the similar basic problems which each of the four major explanatory hypotheses attempted to explain by their own methods. [25] Let us schematize this concept of cultural evolution and related sociological evolution so that we may draw inferences concerning the immediate future of humanity's evolutionary development.

[25 This four-stage theory of cultural evolution suggests a values program for the four year modern college or university of all types. The values program for the freshman year would concentrate on the era of mythological belief (superstition) through subject matter gleaned from paleo-ethnology, anthropology and archaeology. The folk-lore history of a particular people or region could be the subject of special study. (In the United States this would be the pre-history of the American Indian.) This cultural era must not be neglected for it looms large in its theoretical importance as indicated above. For the sophomore year, the values program would concentrate on the ancient religions, contemporary religions and comparative religions. (Perhaps medieval history would be an excellent transitional study from the era of religion to the third-year values study.) Considerable research remains to be done in this field for many of the religions of humanity still remain unknown today. The third year values program would include ancient history (of Greece, Rome, the Near East, China, India, etc.), the classical philosophical systems of the East and West, contemporary philosophical systems and contemporary history. This is the cultural era of most of humanity at the present time. The fourth year program would entail the values and cultural viewpoint from unitary science and the social sciences. The former would be a year course, taught by a unitary scientist who would incorporate all specialists from the sciences into the program, and would start with astronomy and go through all the sciences finishing with perhaps culturology of sociology and social psychology. The social science aspect would include personal and interpersonal values from psychology and sociology, economic and political values from economics and political science, etc. The liberal and fine arts and specialization in the various fields would be given all along during the four or five year program of study. Perhaps the liberal and fine arts of each cultural era could be given special attention by the liberal-fine art segment of the college. The purpose of the program would be to inspire the non-science major and to counter the over-specialization and mechanization of students in an age of science; yet the program should serve to stimulate the science major's imagination and curiosity about all aspects of life. The aim of the values program would be to give unity, purpose and direction to both members of the college and the community at large. The guiding theme for the whole values program would be the ascending spirit of man—his search for social, political, economic and cultural unity and progress. An important objective of the values program would be to preserve the wisdom, the values, and beauty of all cultural traditions so that these would not be lost to us. The whole program would be centered around the college, university or school and it would be made available to the whole community through the Sciartorium which institution will be described below. In order to give the educational institution and the values program the fullest possible support, the new