MAN at MILLENNIUM

LOUIS C. MARTIN, M.D.

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by Louis C. Martin, M.D.

From the imaginative fictionalization of the opening to the fascinating speculation of the final pages, *Man at Millennium* makes thought-provoking reading. It presents what is essentially a series of essays on man and his relationship with both the universe and himself.

The book examines the human experience—what it means to be man at this point in time, what it feels like to be twentieth-century man, what man has come from where he is going and what lies in between.

Biological and cultural evolution are major considerations. Dr. Martin traces the development of man and of thought from the crude gropings of prehistory to the current proliferation of knowledge to which our technology attests. He then projects into the future the outlines of the reality that might someday be ours.

A topic of central importance is the dualism of man's knowledge, between empiricism and metaphysics. Dr. Martin discusses them both in detail, tracing their threads through earlier philosophers and integrating them into his own philosophical fabric. His background as psychiatrist prepared him well for his scrutiny of intellect.

He himself in his introduction perhaps characterizes his volume best:

(Continued on back flap)

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To Christopher Paul. . .
. . .far too brief an adventurer on this
chancy planet to suit his dad. . ..
Ave atque vale

CONTENTS

Page

INTRODUCTION

This is a book by a psychiatrist. However, it is not a book about psychiatry. Its concern is broader: the ongoing and more general canvas of human experience itself. Psychiatry is one thing, with its own importance. It is distinctly a phenomenon of our own times: beyond its boundaries lies the further problem of how it fits and will fit into the continuing stream of human culture: a central theme of this book is the relationship of specific and scientific knowledge to the general field of human consciousness.

The roots of psychiatry run deep into human history, yet it is only in recent time that it has attained solidity and stature. It has opened up new vistas of insight into human nature and has disclosed much about man's conflict with and integration into experience and the world in which he lives.

The psychiatric adventure orients itself relative to two major investigational thrusts, neuroscience and the study of human behavior.

Knowledge of the nervous system in itself and as a substrate to human consciousness is today expanding at fervid pace. As progress is made in neuroanatomy, neurochemistry and neurophysiology, the findings of these sciences are more and more effectively incorporated into the practically oriented daily exercise of the medical specialty which is psychiatry.

Yet, at this point in time, the mystery of the relationship between man's brain and his behavior is understood only to imperfect degree, and psychiatry continues to rely heavily on strictly behavioral study and investigation. The door to integrated comprehension of the human phenomenon stands ajar, but the

steps taken to date are faltering and small, relative to the terrain which must be traversed.

So, psychiatry must deal empirically with the phenomena of experience, and manifests penetrating interest in whatever the behavioral sciences are able to disclose. Modern psychiatry, in fact, achieved its first level of maturity when it succeeded in classifying on the basis of tight observational frameworks the various symptom complexes or syndromes which were exhibited by patients themselves. Psychiatry at times may seem quite theoretical, but the basic grist for its mill is quite hardheaded and practical.

In its complex constitution, psychiatry does consider the entire range of human behavior as its subject matter. Because of this, psychiatry is a generalized phenomenon, dealing with the entire scope of human living. Since this is so, there is a tendency to place expectations on psychiatry which in fact are unrealistic. In some instances, attempts have been made to establish psychiatry as an arbiter, for instance, of matters of ethics, law, education, social planning. and so forth. It may be that psychiatry has some light to shed on diverse areas of human problems·, but it is far from being a universal enough science or discipline to be able to pontificate on all matters of human social concern.

Much less is psychiatry a philosophical study of reality, although psychiatrists do tend at times to become philosophical in their thinking. The fact is, however, that the field of psychiatry is a complicated phenomenon which has appeared at a given time, in a given human culture, and with given structural elements. To the extent that it constitutes a general view of human behavior or human personality, it is one complicated attempt in man's everlasting effort to understand himself and get the important dimensions of his own living into comprehensible framework.

If those are limiting statements about the phenomenon of psychiatry, we could say more directly that these essays concern themselves with the general problem of man's adaptation both to himself and to his environment: the story of the mind (brain) of

man, occurring in reality and working out its relations with it. In this vein, the venture may be viewed as an analysis of the appearance of intelligence out of the backdrop of the material world; or, to use an older sort of terminology, there is attempted here an analysis and essay of the spirit-matter problem.

So, in reality, this is more philosophy than anything else, although it tends to be a summary, descriptive sort of philosophy, as opposed to being a technical exposition. The form of the attempt is dictated by the nature of the problems or dimensions of reality which are dealt with: generally, some of these problems could not be handled in any other way.

There is no intention that these pages be accepted as an authoritative statement about anything at all: psychiatry, for instance, rests on a much more solid base in observation and experience than do ideas expressed in these pages. These essays are not science, and they are therefore lacking in that peculiar sort of solidity that is science's.

The merit that these ideas have lies in their capacity to focus thinking on some of the ongoing, profound procedural problems of the universe as they might be considered in our own time. Rather than a scientific exercise, these essays are, then, a mental adventure, an effort again in man's ongoing quest to understand himself and the environment on earth and in the total universe that he calls home.

The days when I was a boy look very far away at this point. And, of course, a lot has happened since then, not only of personal importance to me, but also in this old world of ours. Many millions of people have both entered their existence and departed from it during the years that I have been around—yet, I do not account myself an old man. Too, many and extensive are the changes that have been wrought both in society and in the world at large. And there is certainly no evidence that the rate of change is itself decelerating.

As the world has changed under my feet, and as I have changed in it. experience has brought me into contact with many

individuals who have profoundly shaped my life, my thinking, and my experience. I would like at the beginning of this book to acknowledge my debt to all whom I have known, and who have related, consciously or unconsciously, to my experience. The people to whom I am directly indebted run to far too many hundreds for me to name them all here, even could I recall them all. Yet, as I sit here doing this composing, they are all in my mind in one way or another. And to them this writing is offered as partial repayment of the debt l owe. l would like to hope that l am at a period in life where whatever remains of it to me may in some sense act as counterflow back into the experience and the reality which has produced me, in the sense of my being able to exert an increasingly positive influence on whatever portion of the matrix it is given to me in my reality to affect.

I should mention my parents, in whose house I came into existence, and who gave me the early experience which shaped so much of my later life. A man is both independent of and yet somehow totally obligated to those who bring him into the world. Part of the psychological game in the world is to establish this independence and, at the same time. recognize the debt which one owes.

James William, my father, passed from life almost fifteen summers ago. His was an educated, hard-working, and generous spirit. Whatever exists in me of manliness and striving has its partial origin in the respect demanded of me and deserved by my father during the years of my childhood and youth.

My mother, Helen, was, and continues to be, an intelligent and artistic woman. Whatever gentleness there might be in my nature, and whatever creativity, stem in large measure from the imaginativeness and sense of wonder that she instilled into my early days on this planet.

I would like, in line, to thank the many people who at one or another time have taught me in my many experiences inside and outside the classroom, from my early grade school days and high school years to my time at St. Louis University, Creighton

University in Omaha, and subsequently the Medical College and Psychiatric Institute of the University of Nebraska. To list these people would be in essence to recount the entire story of my life, which is not my object here. But to them nonetheless I wish to express my thanks.

Currently, I express my thanks to the patients whom I serve and the professional staff with whom I have the opportunity and privilege to work.

Incidentally, I would hold rather strongly to the view that my clinical judgment has nothing to do with the rather fervid theory which presents itself in some of these pages. Whether or not there is any truth to what I am talking about here, what occurs on the ward has a circumscribed reality to it, and its own criteria of judgment. Psychiatry is a medical specialty which can be practiced essentially in any philosophical framework, every bit as much as can orthopedics or obstetrics. Simply put, different levels are involved in cosmic speculation and in dealing with practical problems of adaptation.

Also, I recognize here my wife, Jane. Frequently, our minds run in different channels, a fact which has been the occasion and cause of considerable stress in our relationship. Frankly, I am at times a bit of a bastard to live with. But, in fact, our lives have been intertwined, and I know in the long run that my life is the more rich for the experience.

As the reader will have noticed, this book is dedicated to Christopher Paul, whose heart stopped beating and whose mortal brain stopped functioning not long ago at the age of forty-four months. As far as I personally am concerned, this may well have been and may yet prove to be the one totally unsullied and unspoiled human relationship in my existence here.

My other boy, Matthew, is growing large and strong, and is full of fun and curiosity about his world. I hope of course that we will have good times together and that he will have the opportunity of reaching manhood and choosing his own thing to do. It is only

natural to hope that my work will one day be of interest to him and to young people generally.

As I write these pages, spring has introduced itself again into the world. Birds sing again; trees are bursting into leaf, and the internal vitality of the universe is again expressing itself. These are the forces of life and of a dynamic reality, of which we too are a part. It is that vitality and that internal dynamism, as well as the ultimate source of it all and the goal towards which it is directed, to which we now turn our consideration.

MAN at MILLENNIUM

Chapter I
THE ASTROLABE

"Today the information was relayed to our central communications office that a series of powerful explosions was detected on planet 'Earth' in the 'Solar System'—to use the names that Earth men themselves had used to designate their habitat. Radiation emission data indicate these explosions to have been thermonuclear in nature. Preliminary analyses strongly suggest that the number, quantity, and space dispersal of these explosions were devastating enough to preclude the continued existence of any complicated life forms on planet Earth. Initial bioprobes, some of which have already been implemented, tend to substantiate these conclusions with a high degree of probability.

"As is widely known, the biosystems of earth have been under surveillance for the last thirty egangs, equivalent to approximately five hundred Earth years. During this time span, our systems have watched Earthlings progress from an essentially agrarian, feudalistic society to use of atomic power and mastery of space travel within the relative neighborhood of planet Earth itself. According to our well-considered policy of non-interference in alien biosystems, we had purposefully left with Earthlings the freedom to evolve their own destiny. Lamentably, to our way of thinking. it now appears as though higher life forms on planet Earth have in fact brought about their own extinction at a moment in history when there appeared to be a significant likelihood that mankind, within a few of his generations, at least, might have been able to enter into effective contact with the Federation of Intergalactic Biosystems.

"Some may still question the wisdom of allowing higher biosystems to proceed to their own destruction, but experience has shown that there is far greater danger in premature intervention than there is harm in allowing even so rich a civilization as planet Earth for a time sustained, to accomplish its own destruction.

"We must again recall, however, that none of the active members of the Federation became so without themselves having developed to the place where in essence they initiated contact. The few instances where the Federation intervened in internal affairs prior to racial maturity in the populace in question resulted in serious tragedy, as is known to every schoolboy.

"Accordingly, although it is with some sadness that we record these facts, we must include planet Earth on the roster of planetary suicides: our technicians and scholars will reduce the available data from our study of their civilization up to and including their extinction to usable form, so that the internal goals of the Federation can continue to be developed. As far as the overall good of the universe is concerned, Earth and its inhabitants will have served a generally useful and humane function, although having excluded themselves from participation in the ongoing experience. Dateline egang 45.3^{10} 6392. (Earth time: Year 2000 A.D.) Intergalactic News Agency."

The preceding is an epitaph to an experience. Granted that it is fanciful, the skeletal essentials of its contents are a possibility, as far as earth is concerned. Whether or not there exists an Intergalactic Federation of higher consciousness, man has within his scope at this time in his history the power to put an end to his species and to blot out the phenomenon of life on earth.

This book is a story concerning the tension between the individual and his environment. The society of man is made up of nothing but individuals, yet society in some sense overwhelms and is larger than any individual. The individual is subject to his own mortality and eventually has met his end, while "society" has continued to go on.

Our interests extend to many horizons. There is man before he was man, lurking somewhere in a cave. There is also man gathering together into cities and beginning to form the first societies. Above all, there is man beginning to write, and the cascade of experience that has occurred since that time, a period very short as far as the world is concerned, but generally viewed as quite long relative to personal experience. As far as the individual is concerned, whatever his racial background, his color, or his way of thinking, there is an urgent necessity that he carve out for himself some pattern of existing in the world in which he finds himself; that is primary and prerequisite. Our way of knowing things has given us in our age a depth of insight into how an individual comes to be, and what is required for the occurrence of individual experience. This is a body of knowledge that has grown and increased as a result of the patient efforts and occasional brilliant insights of many people.

Many human individuals have spent much time and energy in developing factual knowledge about quite obscure corners of being. This explosion of factual information is relative to our investigation.

However, it is not the intention of this book merely to recount facts; the object is to search after the unifying threads in the thrust of man away from darkness.

Man is hurtling himself into some future, the dimensions of which are obscured from us at this time. However, to the extent possible, we should develop as realistic an outlook as we can toward the process that we are in the midst of. Man is a product of his previous history. As far as time is concerned, this refers to the evolution of man over at least several hundred thousand years. On a somewhat shorter scale the specificities of man's identifiable culture stretch some five to ten thousand years, depending on the criteria of perception one chooses to employ.

The astrolabe is one of man's oldest scientific instruments; in its planispheric form, to which the name is commonly restricted, the instrument seems to have been invented by the Greek Hipparchus (150 B.C.), or perhaps by Apollonius of Perga (c.240

B.C.). In its more than two-thousand-year history, it has seen man through a great many situations. The astrolabe is literally a "star-grabber," an instrument by which a man may reference himself to the starry heavens in navigation, and so guide his journey. But there is another sort of astrolabe, the phenomenon and process of thought itself.

Man's mind is a process that is going on in his life and in his environment. In a sense, his mind is his life; one must think of Cicero: *"Mens cujusque, is est quisque"—roughly* translated: "The mind of the individual, that's who he is." There are in fact many ways of understanding man. The science of politics, the disciplines of economics, sociology, and experimental psychology all give dimensions of the total reality. But the core problem in understanding humanity is somehow to understand directly his mind and consciousness: what this process is in itself and how it interrelates with the environment in which it is found.

Such knowledge is not practical knowledge; it leads to no particular conclusions, directly, nor is it involved directly in the fabric of any particular decision. Yet, whatever our theory about this matter be, be it implicit and vague or highly elaborated and specific, this is, in fact, the background and the backdrop for all other knowledge and all decision-making.

Throughout history, man's quest for his mind has been an elusive venture. He lives with it, so, of course, it is right there, and in that sense does not even have to be sought. At the same time, man's efforts to speak consistently and significantly about his mind have been beset with serious systematic problems. In other areas of knowledge, man generally can be accounted to be familiar with things and to have insight into them, when he is able to talk about them, to formulate language concerning them. However, in the matter of mind , in spite of the vast amount that has been spoken and written on the subject, the obscurity remains.

One approach to the problem is the cross-sectional study in current time of the phenomenology of mind: the way in which consciousness is manifested or manifests itself directly in our

experience, as accessible to observation analysis. A different dimension is the history and continuity of the thing: mind, in terms of consciousness on earth, is a limited, although extensive phenomenon. Taken this way, mind is historical, cumulative reality in time, of considerable duration, progressing through evolutionary stages: the sum total of all psychological phenomena which have occurred.

The odd and unique thing about our particular quest is that the pursued is also the pursuer: mind seeking mind, understanding seeking understanding.

Our investigation here is not "scientific" in the way in which we ordinarily use that term. The modern scientific attack on the world has been productive both in opening up new vistas of knowledge and in providing man with the capacity for controlling and manipulating his universe. But, although there is nothing in these pages that is contradictory to empirical knowledge, nonetheless, the process of our thought here is not scientific. The elusive will-o'-the-wisp here is, for instance, not observable intelligent performance as measured by objective testing, in its place a valuable procedure. What is involved here is something that is more difficult to lay ahold of, the intrinsic intelligibility that is contained in the internality of consciousness, the self-lucidity of the experience of the individual, which cannot be communicated directly, but only by external actions and symbols of various sorts, all of which in a sense and ultimately miss the mark as far as their effort at communication is concerned.

This kind of investigation is not of direct interest to the scientist in the ordinary sense; nor is it my contention that it should be. The scientist, as scientist, is about a different affair.

Science has structured characteristic mainstream thinking in our culture for the last few hundred years. At a certain time in history, man found it important to get on with the practical business of living, and, in the historical intellectual and social environment in which he found himself, empirical language and knowledge became increasingly useful to him. Because of the confluence of many

factors, at a particular epoch in history, man realized that he had in scientific method a new tool with which to understand and explore his universe, and he was not about to be kept from its employ.

Although man both as individual and as society is often heartless and capricious, there are, nonetheless, reasons why he does things: his motivational patterns also interest us here. In some ways which may be rather surprising, the act of faith that man makes in empirical knowledge today is operationally important. Adherence to scientific method, however, and empiricism is not a pure phenomenon, nor is it in any sense "primary" as far as human thinking is concerned. It is a highly specialized pose. The outstanding thing, of course, is in fact that it works. And, since it works, it is a preeminently valid way for man to be getting at his world.

It is always difficult to predict the future from the phenomena of the present; human experience has the disturbing quality of getting larger than had previously been anticipated. The imaginative leaps into future time by Jules Verne, for instance, ended up being uncannily accurate in many respects, but even this is discernible only retrospectively.

At a certain point in time, man *de facto* reached an impasse in cultural development, and the production of the empiricist frame of mind was the way out of the impasse. In the advance, or development, of human consciousness, this was something which had to occur.

The impasse was a conflict: on the one hand, the theologico-metaphysical tradition of the Middle Ages; on the other, the peculiar sort of observation of nature which had its beginning in ancient times, but reached a particular sort of flowering during the Renaissance.

The many conflicts which arose out of this important historical opposition went very far to make up the modern world in which we live. Our objective here is not to decide which of these mental disciplines is correct: that is a bootless endeavor. Our problem is seeing both of these mental approaches as phenomena in a given

practical world, our own, planet Earth—phenomena, that is, of mind—and attempting to ferret out and analyze what are the validities of each and what is the interrelationship between the two. That is a more difficult but nonetheless more intriguing sort of venture.

We will, then, study and analyze the appearance of formal empiricism as a cultural phenomenon. Living as we do in our own culture—indeed where else could we live, for I am not specifically talking about Western culture, in which empiricism most clearly took root, but about the experience of man on earth—there is a real forest-for-the-trees phenomenon in operation. There is something very weird occurring on planet Earth even though the specific weirdness referred to goes largely unnoticed by perhaps even the majority of humans. The reason for this is quite simple. The individual becomes concerned with the elements and the mechanics of his immediate surround, to the extent of misperceiving the general drift; yet the general drift soon becomes a major determinant of human life.

In the past, when a particular psychological level had been reached, holding back the next step in the advance became impossible. No matter what forces might have been leveled against it, once the scientific movement began three or four centuries ago, no power on earth could have forestalled it nor dealt it more than temporary and inconsequential setbacks. Proximately, the inventiveness of man, when presented with the opportunity, was bound to take off and go.

Required in the equation is the effort and the application of brilliant minds, but that in itself is not enough to explain the phenomenon. It is illustrative that significant discoveries, such as the invention of the calculus, were made separately in different parts of the world. ln general, in societies which are culturally contiguous, there is, in spite of differences, much more similarity cross-sectionally across geography than longitudinally through time. It is unthinkable that the calculus would have been discovered

in Cicero's day, but not that it should have been discovered with practical simultaneity in two European countries.

Relative to empiricism, there is little sense in asking whether it is a good thing or not that it occurred: it is a phenomenon. Retrospectively, this was a movement which occurred larger than any individual and would have broken down anything that stood in its way.

Once man had developed an ability to employ scientific method, he moved into this dimension of interaction with the world, even at the expense of deeply engrained social realities, and even, as will appear, of intellectual consistency.

Man has developed astounding knowledge of the universe and his place in it. There remain the nonempirical (non-scientific) dimensions of experience: whatever science tells us about ourselves, there is still the general problem of human consciousness in back of and underlying empirical thought, the former being more general and the latter being a specific application; the more general level is not empirical (scientific) in nature, yet is the background of experience against which all empirical observation occurs and which in some meaningful sense is prior to it. Empiricism sets up a particular set of rules which are to be followed in specific sorts of study and observation of the universe, but these rules do not in fact encompass or explain the operation which sets them up in the first place: this is man in himself and in his totality, the overall psychobiological unit.

In the empirical effort, the basic phenomenon is the calculating brain of man, operating at a certain particular time in history, deliberately deciding that certain rather narrow criteria for truth are to be preferentially followed, in order to achieve specific ends, and in fact limiting itself in a peculiar fashion in order to free itself from other prejudices and other mental shackles.

The more general problem yet remains: what is this mental energy, this intelligence, this force which does the investigating and ordering in its own experience? That we have evolved from matter and bear a relationship to it that was not even dreamed of by the

ancients seems certain, but identifying the fact does not explain the phenomenon. At the current stage in human evolution, scientific discovery constitutes the central thrust in man's intellectual struggling with his universe; the success achieved has drastically altered human comprehension, but the core problems of a really existing universe remain obscure. First, we are almost as far from explaining qualitatively the relationship between what we know as consciousness and matter as ever we have been. Granted the "laws" of evolution have been operative in the production of man, this gives no explanation whatsoever how it is that this phenomenon we know as "matter" is "capable" of producing this complex phenomenon that is ourselves. The matter of how consciousness internally relates back into the material world from which it has come is as puzzling to us as to the ancients, except that we now tend to identify consciousness as an epiphenomenon concomitantly occurring with increasingly complex organization of matter first into organic and then into living form, through lower life forms up to the complex and abstract cerebration of man.

Truth—and it is the odd and to some people quaint contention here that this is a meaningful concept—is definitely not co-terminal with science: science is, in fact, a particular way of reaching certain kinds of truth, and a most powerful way at that of studying and learning about the universe, but, to overlap other problems that are involved, we could never know, *scientifically,* of our own existence, yet, assuredly, our existence and temporally continued experience is the greater background against which we practice and exercise our science. Of this, there is no scientific explanation. The nature and reality of this larger background, this canvas itself upon which the picture of life is painted, is the ultimate mind game, man's ultimate problem as far as seeking truth and understanding himself in his universe is concerned.

Thinking concerning this larger canvas is a rather slippery sort of business. In a loose sense, man does it implicitly, whether he does it explicitly or not. It is on this larger canvas that the mysteries themselves of matter, life, human birth and death, truth, and value

in living are to be found. Formal thinking about these issues, directly and intellectually, is not the most "in" sort of pastime in today's intellectual world. There are reasons for this, and these too we are interested here in investigating. However. even if we have no generally accepted philosophy or universally recognized set of conclusions about these general matters, nor even any universally acceptable ways to state the problem, we all operate in terms of at least implicit convictions concerning them. What we have done is to toss the matter of absolute theory up in the air and leave it hanging there, so as to be able to listen and attend to and study the empirical data of our universe to learn from them, unfettered by particular sets of conclusions about the universe.

However, as we put behind us the accumulated data of the decades and centuries, the intellectual responsibility to attempt to re-evaluate, to re-examine, and to reintegrate the total experience remains.

Man is increasingly responsible for making sweeping systematic decisions concerning where he is going and how he must manipulate not only the material universe directly, but his own involvement in the process of manipulation. Corporately, man has put forces in motion which place him in collision course with his own destruction; the responsibility for coming to grips with his patterns of interacting with his universe that this implies is evident. On one level, the obligation which our own advance has imposed on us is quite practical, in terms of developing empirical understanding of the processes which we have activated in society, and of being able to work with the economic and the ecological factors which are comprehensible not in terms of ultimates, but directly in terms of the specific realities which constitute them. This is the process of working through the logistics of discovering "where we are" with increasing precision and adequacy and gradually translating our thinking into effective action. There are dangers and difficulties in deciding things too rapidly here. but we cannot free ourselves from the obligation of doing the analysis and taking the action that gradually becomes evident.

However, neither economics nor ecology nor sociology is my own specific interest: these technical issues are not to be found discussed within these pages, except peripherally, only to take notice of their importance. Human experience has not been integrated in a fashion yet so that there are no discontinuities: and it is this problem with which we here concern ourselves. We are interested in the nonscientific areas which related to the way that man internally and intrinsically views himself and his fellows.

There is a dual thrust in man's interaction with his own consciousness and with the world in which he finds himself: on the one hand, he tends to reach out, to master, to subjugate, and to order his world and existence, but, too, he also attempts to cope with the much more generalized problem of what, if anything, is worthwhile in his brief and painful experience. A dimension of man's existence on earth is his continuing attempt to cope with the problem of whatever "meaning" there is in reality itself.

Looking backwards, as man emerges for us out of the mists of antiquity, he has been asking the fundamental questions always, has ever been dealing with the mysteries of meaning, value, life, and reality itself.

His astrolabe—his mind—has been focused on these issues: our efforts here are to oil the hinges a little and to burnish up the brass. and to get the matter reoriented in a reasonable direction. In other words, this constitutes another attempt to evaluate man in the total context of his existence.

Excursions of this nature in the past have been called "philosophy," and also have been dealt with through personal and formalized religion. Today, the status of philosophy and religion is very much up in the air, there being no clearly visible outcome capable of being identified at present. Nonetheless, these (philosophy and religion) have historically been the vehicles in which the sort of investigation we are about here has been carried. There is much confusion in and about these areas today, yet they still profoundly affect our lives. As a race we identify our religions as important shapers of our social thinking, yet we are at a loss to

ascribe objective validity to them, for the most part; or, if that is too harsh a way to put it, we are not at all clear about the meaningfulness of specific religious orientation and doctrine today. We are rightfully leery of the evil effects of an over-stratified and overstructured interpretation of religion.

Ultimately, we are going to have to find some way out of the impasse to which we have come with respect to our religions: either we will scrap them completely as meaningless anachronisms—and certainly right now that would suit some people's thinking—or we must find a way to reinterpret the truth which historically has been carried by religion and is of lasting importance to man. I suppose the reason why we have not divested ourselves at this point completely of our religions is that although we may not be able to explain it, we have some but poorly realized recognition that there is something here which is of primary and direct importance, which we would be the poorer for the loss of.

This book is about empiricism and the ongoing human experience, which began long before empiricism joined the scene, and, indeed, about the relationships between the two. The manner of treatment raises hosts of epistemological problems. In this work, I plan to ignore them, although taking them up at a later date may be important to me. Epistemology is the explanation of knowledge, and I have no intent here of explaining or defending the cognitional base of what is in these pages or *how* it is that man is in total contact with his universe, which is the real point. A formal answer to these dimensions of the thing is not to be found in these pages: the reason for this is, simply, that these essays range over too wide a spectrum to have the subject matter herein contained easily systematized into one formal epistemological system. As far as I can tell, the world is this way. What we are aiming at is the way things are and man's relation to them. The sequence here considers the fact first, then later its explanation, in due time and if you will.

Whatever is true about the epistemological problem, the astrolabe is an instrument by which, for hundreds of years, man has attempted from days of mariners and explorers of old to the

computer age to find his place among the stars. In these essays, the mind is both instrument and object, attempting to know itself and its place in the universe.

Chapter II
ODYSSEUS

"Sing to me of the *man,* oh muse."

This book is about the world, man, time, and the cosmos. It is mind game, a reflection and investigation into inner space as well as comment on outer space and man's relation to it. Living as we do inside the phenomenon of life, it is difficult to get the experience of being human into perspective. It is no mean achievement simply to gain sufficient mastery of our environment to be able to survive materially and psychologically. Getting a glimpse into the larger horizons of experience is by no means a universal nor a common commodity, yet it is something we are here in quest of.

When man invented writing, his entire world changed, took on a different pace, moved forward with an unparalleled rapidity.

Little literature in our history is much earlier in origin than the Homeric poems. It is most positively significant that the opening words of the *Odyssey* are an invocation to the deity to sing of MAN. At the very dawn of word-accelerated experience, man is found sitting around the feasting table or the outlying campfire beguiling himself with tales of heroism and adventure. And in his song is to be found most powerfully the character of the individual. The individual is Odysseus, a Greek, but more than that, a human. Many cities did he know, in the words of the poet, and the minds of many men. Through a hundred dangers and a span of ten years, he followed the unharvested tracks of the sea homeward, from a war.

Were the verses of Homer wood or even stone, we might go to wherever they had been erected and see now their ruins, perhaps a bit remaining from which we might tend to deduce the rest; perhaps nothing remaining but a foundation stone excavated around as it sat

beneath the surface of the ground. a mute witness to a grandeur that once had been. But such is not the fate of the written word. Homer stands to the human mind today with ninety-nine-percent-plus identity to the experience which barely literate Greeks had in their grasp at the dawn of things, two and one-half millennia ago.

What of this man, who appears to us out of our distant past as the first *individual?* Certainly, he never existed as described and never underwent all the adventures attributed to him, some of which are quite fanciful.

ln Odysseus, man stands out in his separateness from the world. His mind is a process, a story that has its continuity and its understandableness in itself; it exists in a world which is "out there," and which is essentially "other." There is observation of nature. description of its power and occasionally of its beauty, but essentially the story is of man and his actions: nature, although there, is the backdrop and man little senses his identity with it.

Man and the cosmos are two similar expressions of the same phenomenon, and the apparent chasm that may lie between them is one that we are very busy crossing.

But, Odysseus—what of this man, our elder brother? His characteristics: he is wily, intelligent, faithful to his comrades, lonesome for home, courageous, unwilling to accept defeat however strong the currents of fear, attached to his home and willing to undergo any hardships to reach it, and respectful of the reasonable conventions of man. He is able to suffer; indeed, suffering, if anything, is his chief quality, the thing that makes him worth singing about. He is never cruel for the sake of it, but, should the need and occasion arise. he can be harsh, even apparently unfeeling. He savors life for what it is, yet would not hesitate to sacrifice it, if necessary. He can enjoy pleasure, but is not for long drawn by it from his purpose.

But above all, he is a hero—an individual, to be sure, but one who stands out from the general background of his fellows.

From the appearance of man on earth, it took—how many? a million years, more or less—to produce an Odysseus. For the nonce,

what is important is that we, ourselves, as I write and you read these pages, are distant from Odysseus by a mere three thousand years, as opposed to the one million mentioned. Roughly, that is about a third of a percent of the total experience, as far as identifiable man is concerned, and life goes a good deal further back than that. Yet, it is within these three thousand years that the entirety of our civilization as we know it has occurred.

When man first emerged as a writing being and left us the remains of his thinking and evidence of his mind, he immediately, as we have noted, focused on the individual.

Odysseus was already bound neither by specific custom, by exact geography nor by a fixed knowledge. Man was a wanderer, an experiencer, and a learner. But there is one thing eminently worth attending to here: the world as seen through the eyes of the literary creator was in essence an adult world; it was not a world of children.

It was only natural that it was the adults in the culture who could use the language best. As each generation came into the world and gradually achieved its maturity, it started from actual infancy (in the literal, etymological sense: *in-fans*. not speaking), and through physical maturation and training in the particular cultural surround eventually reached into the ongoing cultural stream of the elders, in whose hands the lore, the language, and the culture had in fluid yet real sense been carried. Each generation introduced its innovations and its rebellion, yet it did so against the backdrop of a (more or less) stable culture into which it was born and against which it reacted as against a foil. Language was a prerogative of adults and tended to be primarily about adults. More than that, written language tended to be about adults who shone out beyond their peers in some pre-eminent way. The adventures could be had, the wars could be conquered; the men of whom man spoke were the heroes, the leaders, the individuals who managed by luck, talent, and energy to enforce their wills upon their fellow men.

Not only was the child omitted from the focus. but also the common man. the weak one, the cipher in the crowd, the typical

human being. That things should so happen was by no means an accident, but was a qualitative part of the emerging story.

The essential principle, which repeatedly acts in human existence, is this: man consciously deals with what he can comprehend with his mind in a definite way, specifically and concretely as limited by his emotional state. This is a universal rule that applies to man at any stage, at any point. There is a tension between man's intellectuality on the one hand and the actual state of his preparedness on the other. There is a tendency always to escape the limitedness of any given biopsychological condition; however, the leap from a previously existing state must be a possible one, and it is conditioned by the emotional potentialities of the organism. No matter how true a thing may be, if it is not a truth to which the individual at a given time is prepared to make a move, no move is possible.

This is an aspect of the psychological realm which is an extension of, and analogous to, the material world. A point of arrival must be such relative to a potential point of departure. One cannot travel from Paris to New York by motor car; no more can one jump to a new level of insight or knowledge unless the means of his transportation somehow has been prepared, however valuable the subsequent leap might be.

Living on earth as we do, it is easy for us to become jaded with life and preoccupied with the mechanics of daily survival. In the individual and in the general process as well, life exhibits a tension between approaching to where the edge of the action really is and at the same time defending against the abruptness and terror of the experience. This is another centrality. It is an idea expressed long ago in a religious setting—that if indeed man were to see the face of the living God, he would likewise die. Man's spirituality thrusts him into the darkness in an effort to expand the circle of light; at the same time, he dreads and attempts to defend himself from the experience. He has a sense that too heavy a dose of the process that is going on within him might well drive him mad, and sometimes he is right.

When man first wrote of himself as individual, he wrote in the form of adventure stories. which have not lost their excitement and their marvel to this day. But he wrote of himself as fully developed: man's tie to his earth and to his surroundings is acknowledged. but one sees here the external form, the leaves and the branches and the general shape of the tree, without perceiving the roots of the matter or how they penetrate deep into the supporting earth.

To digress for a moment, it would not be totally accurate to say that the phenomenon of childhood was totally omitted from early literature. Some vignettes of childhood are insightfully dealt with and are poignantly beautiful. However, they are seen generally from the attitude of adult thinking. The *Cyropaedia* of Xenophon, a biography of the early years of Cyrus the Great of Persia, is an idealization by the Greek mind of childhood experience: but it is highly stylized and largely recounts boyhood experience and boyhood generosity in terms of how foundations were being laid for adult virtues and characteristics. The possession of such a document as this is valuable, even though it is not the world's greatest literature. But, when all is said and done, the work is stereotyped and gives only a shallow account of how individual life comes into existence. The mechanics of child development must lie in wait for many centuries to be discovered. At the time we are talking about, man is indeed late in the total history of his existence on earth; nonetheless, he is taking early steps in the journey of developing culture.

There is a problem here about cultural advance, which we might as well recognize at this point. This book begins with the hypothetical account of the destruction of the human race in thermonuclear suicide. Should this come to pass, one might with reason ask whether in fact this was a cultural advance for man to learn to write, to create, to make beauty—in short, to leave the jungle of his early bestiality. We do not know the outcome at this point, and so cannot comment on that dimension of it. I have to define cultural advance here as that which is some realization of the thrust in man towards intellectuality and mastery of his universe.

This is never a very clean thrust in life. It has its casualties: individuals can be hardened by the very thing that generally is driving man into spirituality and humanity. The beast has a strong tendency to utilize the spirit for its own purposes.

But, to continue, whether or not there was an Odysseus as such, there is no question about the fact that there was a race who thought about and wrote about what Odysseus characterized, or idealized, or stood for. The existence of the idea of Odysseus is an absolute certainty, and that is of infinitely more importance than whether or not the adventurer of Ithaca really existed as an individual with all the attributes ascribed to him.

Odysseus, a representative of a sophisticated and in many ways sensitively delicate culture, seems to be a very distant and very shirttail relation to us. Yet he lived but thirty centuries ago, certainly a minute span of time as far as cosmic reality is concerned. This is only, roughly. about one hundred generations of our species: one hundred or so fathers and sons stretching down from each other by linear descent. Laterally, through our own time, one hundred people do not seem like very many. There may be a hundred in one office, or in our immediate environment in school, or in the social group with which we meet on Tuesday evenings. Do the mental gymnastics and stretch these people back through time so that each might be both parent and child in a continuous line, and that fairly well brings us back to the written beginning of things in our own cultural stream.

History can be pushed back farther than that, as exemplified in the pyramids and temples of Egypt, and the hieroglyphs there to be found, and even farther than that back into early towns in Mesopotamia, but even when that is done, the time span is increased at most by a factor of two or three, and that, when the overall reality of the universe is concerned, doesn't make much of an impact. Whether one talks about 1/32 of an inch or 2/32 of an inch at the end of a yardstick, one still seems *to* be talking about rather an infinitesimal spot.

Once certain achievements in culture were made, human thought became facilitated, and the progression became geometric rather than linear. Once man learned to record in writing his thoughts and ideas. this was a tremendous escape from the particularity of the individual into the generality of spirit. Whatever this consciousness is. it's a damn clever trick for mind to be making little symbolic squiggles on hunks of matter, the exact constitution of which has nothing to do with what is being symbolized. Whether an idea is chiseled in stone or inked on papyrus or printed on paper makes no difference as far as the idea is concerned, although it might have something to do with its beauty or durability. If we stand back far enough to view it, it is a weird phenomenon that hunks of organized material—men—should at this point in time, or indeed ever, reflect back into the material universe and utilize it for generalization of consciousness. but its effect, once it occurs, is that man's experience ceases to be his own tenuous property and the property of those with whom he immediately lives and becomes accessible to anyone, any place. at any time provided only that he has the intelligence to master the game of this sort of communication.

Conscious realization is by no means the only determinant of what happens—there is a good deal more going on that we will attempt to cope with before we are at the end of our story—but at the same time, man's conscious realizations, the things he can talk about and preserve in writing, are nonetheless of extreme importance. This dimension of human living is the part of the iceberg that gets out of the water; it is observable and identifiable and even if it be incomplete, is nonetheless influential as we both interact with our universe and attempt to elaborate the meaningfulness of our own experience.

To summarize briefly, man as he appears to us in the early writing of our own culture is recorded not as a psychobiologic phenomenon evolving out of and interacting with an environment. but rather as man the adventurer, the leader, the hero, the outstanding individual who does great things and to whom. during his lifetime, it falls to achieve a certain greatness in the stream of

his culture. Of all the men who sail and adventure with Odysseus over land and sea on his homeward journey from Troy, he himself is the only one who survives to complete the heroic task; the others perish in the effort, but in the sweep and the stream of the story, their absence and demise is unimportant; it is not noticed, and the reader is infinitely more impressed by the success of the one than the failure of the hundred.

At the beginning of man's conscious struggle to deal with his own reality, he appears, then, as an adventurer in the world: he is not making abstract statements about his nature or about how he acts or what his significance might be. Some would just as soon leave the thing there and live out the consequences of that point of view. However, man didn't. If he had, we would not have this current story. On the contrary, man began in very short time to reach out into his experience and his world and to formulate abstract statements concerning what kind of a being he was and how this total experience on earth signified.

During the early centuries of his newfound experience as a writing and therefore intellectually communicating animal, man viewed himself generally as distinct from his environment; in his pursuit of the nature of the phenomenon which was himself, he saw himself as separate and removed from well-worked-out systems of dependence on the material world. To be sure, he knew that he ate and that he drank and that if wounded he would die; but his chief emphasis tended to be on himself as moral and intellectual. It almost seems as though the animality and materiality of man were a bit inconsequential.

It is startling, the extent to which, once man had developed the beginnings of a cultural tradition, the pace of things markedly accelerated and human thought ranged throughout wide fields of investigation and endeavor. Within a few centuries Greek thought exploded in a near-frenzy of philosophical speculation. This was not a phenomenon *de novo;* whether or not man had committed the thing to formal writing, the way had been prepared by previous experience as manifested in the ideas and myths that existed in

verbal tradition within the culture. A number of men—Xenophanes, Thales, and Empedocles, for instance—advanced abstract hypotheses about man and about reality; however, the first mind that ventured on the scene proposing a truly broad range of problems and potential answers was Plato. It is hard to get the work of a mind like this into perspective, so used have we become to viewing him retrospectively in stereotypes. From our point of view, Plato is liable to be looked upon as a man with old and hackneyed ideas, who now has little to offer to our thinking and mental experience generally.

There really aren't any "old-fashioned" ideas; we cannot validly divorce ourselves from our past. Even though we may not agree with a statement about things that has been. made in previous time, our knowledge of current experience and ideas is impoverished more to the extent that we are ignorant of historical antecedents. For, if nothing else, later thought is never developed out of whole cloth, simply in honest response to the present phenomena. It comes into being either by further developing previous positions or by becoming polarized against
them. Plato, and his master Socrates, in whose mouth he often places the words of his dialogues, were born into and profited from their culture. They appeared no more out of immediate nothingness than did anyone else, including ourselves. Their culture had prepared them for the steps they were to take.

The content of the Platonic dialogues ranges over the whole scope of basic or "metaphysical" human problems: the nature of the material world and its origin; the problem of reality and its illusions; the nature of ideas in the world and in man; the problems of personal and social morality; and the phenomenon of human mortality versus potential immortality. In formulating approaches to these issues, Plato managed to capture the concerns which determined most formal human thinking for the next two thousand years.

The problems as formulated by Plato involve large procedural questions concerning the nature of being human. It would be a

mistake to view these questions, with which man in fact grappled for many hundred years in a way that Plato would clearly have understood, as insignificant or meaningless.

Such an attitude is nothing but the badge of the insecurity of the mind that entertains it. A parallel attitude would be that of the adult who is capable of functioning in terms of the grown-up world and its values, but who, in his development. has failed to retain the memory of the developmental steps which have led to the patterns of his mature functions. Such a person may be able to perform quite well within a range of limited context, but he should not be taken as much of an expert in the general matter of human living, and he will probably not be particularly adept at dealing, for instance, with the problems of younger people.

To understand the totality of the experience, one must have some comprehension of the longitudinal progress of things through time, as well as an ability to comprehend their more immediate intelligibility in terms of direct and current experience.

There is an organicity in human thinking, a way in which certain concepts and concerns have to compete with others, as a result of which conflicts and interaction the actual stream of culture and consciousness goes on. Plato's interest is meta-physical, concerned with the nature of reality, the significance of existence, what man in fact understands when he understands reality itself, and what the ultimate nature of the universe is. These "metaphysical" questions are based on observation of the universe, indeed, but they do not rest for insight or validity on any particular empirical data as such. The "ancient" world was not without, also, its interest in empirical data, as evidenced in the work of, for instance, the physician Hippocrates and the philosopher-scientist Aristotle. These men, and others, gave considerable attention to specifically detailed observational data from their world and environment. But there was a certain tension concerning which of these general thrusts in human knowledge was to win out, as far as the evolution of culture was concerned. It was never strictly an either-or situation, in which

one mode of thinking was accepted completely to the exclusion of the other, but it was a matter of emphasis.

What occurred was that the major thrust of human thinking for the next two millennia had to do with an ongoing, organic attempt to answer the larger questions; the questions of specific observational data tended for the most part to take secondary and less prestigious places and, accordingly, not to be granted so much significance in the context of human study and thinking.

The core reason for man's doing this was his aching search for his own identity. Man had to "find" himself in an intellectual, spiritual fashion before being able effectively and consistently to turn his observations into other and more directly empirical channels. Specifically, man came into the world of written consciousness as an individual, intellectually distinct from his environment and acting as moral agent. The major thrust of human thinking, then, in our culture for two millennia was aimed at analyzing to the fullest extent possible this ethical dimension of man. This investigation of man's differentness or his separateness arrived at some rather remarkable conclusions. The picture of man which eventuated during the Middle Ages was that man, in fact, was in his nature so distinct from his environment that his major existence was not here at all, in this material world of which we have empirical knowledge, but rather in a world unseen and beyond the grave.

This was an odd sort of conclusion to arrive at, viewed from a relatively abstract vantage point, and as such. it requires some sort of qualitative explanation. The peculiarity of this phenomenon has to do with the tension in man between his origin from matter and his outward thrust towards spirit. Although the only reality man had known was the material world around him, he attempted to deny in an outrageous fashion its ultimate significance; really to understand man, it is necessary to come to grips with this preposterous dimension of his existence.

We will not here consider the truth or reality-representation value of this phenomenon; the point is merely to emphasize its

existence and to give a hypothesis concerning its psychological significance: the chief, overriding need of man in downgrading present reality was, it seems, to establish a permanent, more or less universally accepted set of concepts about himself in some absolute and eternal sense.

To illustrate, had you asked the average man on the street in Athens what his life was all about and what it meant, there is no doubt but what he would have shrugged his shoulders and said in effect, "Who knows?" This attitude was not a likely point of departure for the development of an effective system of empirical observation. On the other hand, were one to stop on the street his counterpart some two thousand years later, some place in continental Europe. he would have got a fairly consistent answer, a pretty definite set of convictions. Man was a spirit created in this material flesh by the action of God, subject to an objective moral law in the universe. according to which and his living of it he would ultimately receive eternal punishment or reward in the ultimate kingdom beyond the present, temporal existence. There were "heretics." to be sure, but overall, this was throughout European culture an almost universally accepted view of man. For our purposes it is irrelevant whether this position was either correct or incorrect: psychologically its force was that it was definite. Whether deluded or not, man "knew" who he was, where he was from. and where he was going.

Concerning this view of man, one version would have it that man was for years engrossed in superstition, from which the scientific movement of modern times liberated him. This is short-sighted. To use the earlier stated analogy, it would be as though an adult human were to look back on his adolescence and decide that since his thinking had changed, he must earlier have been "all wrong"; the truth of the matter is that during adolescence, the individual had been engaged in an explosive process of invention and discovery; with maturing years and additional experience, it was necessary to modify the development that occurred earlier, and

that often in apparent rejection of and rebellion against what had previously manifested itself.

In the larger context of things, man had to solve his cultural "identity crisis" before he could effectively turn his attention to the specific problems of the material universe and his complex relationship to it. Man had to evolve a spiritualized interpretation of self prior to his evolution of physical science. He had first to lay down a stable intellectual base before he could turn loose the full power of scientific method.

The struggle upward to the Medieval synthesis was itself both complex and spirited. The shape of its conclusions was not hammered out in uncontested simplicity. The philosophers of the classical world had in fact developed a wide range of possible alternatives to the problem of human existence, which, if we are to understand the later development. must be summarized.

Plato felt that the existence of man's spirit was of longer duration than his existence on earth; that probably he had existed prior to his coming here and had been exposed to absolute truths which he might dimly recall and which might be re-activated; that he might well continue to exist in some form or manner of existence after the dissolution of this temporal life.

Aristotle, Plato's student, who was able to sustain remarkable balance on intellectual questions, saw the soul of man primarily as the organizational principle in the matter which makes up each individual in the human species. This is a position not dissimilar to the current acceptance of man as basically a psychobiologic unit, according to which view there is only limited possibility for speculation about permanence beyond immediate experience. However, even Aristotle tended in a poorly defined way to view man as being ordained or ordered toward something infinite and divine.

The Epicureans, another school of Greek philosophers, opted for the position that man indeed had soul. but that it was composed of fine material particles and that it dissolved at the death of the individual, precluding any experience beyond the grave. An

inspection of Epicurean thought discloses that little intrinsic evidence is given for this conclusion and that its introduction comes about as a result of psychological need to free man from the pain and agony of having to worry about possible future existence. Its importance as a basic philosophical position is that it was a blatant form of materialism, explicitly attributing a material and strictly temporal existence to everything and attempting explicitly to rule out the possibility of any spiritual or intellectual continuity in the universe other than the continuity of culture.

The Stoics attempted yet another tack: classical Stoicism was primarily a position of psychological adjustment, irrespective of the nature of ultimate reality. It was based on the idea that freedom from worry should be sought after as the end and goal of human life. There is a fanciful cosmology present in the Stoic philosophy, for which also there is not much of an evidential sort of explanation, but, for the most part, the approach is a psychological one, based on making the best of a situation which is vulnerable to pains, miseries, and injustices.

It is remarkable that these positions were established within the matter of a very few generations, once man developed a written tradition. And, at least superficially, they seem to cover the gamut of possible generic solutions: spirituality, in which man's existence on this earth is incidental to a higher and more permanent reality; formal and explicit materialism; an attempt at a balanced resolution of the two; and psychological adjustment to what admittedly is a difficult and often hostile world.

Whether or not in fact this is an exhaustive pattern of possible generic solutions remains to be seen. But it was essentially on this battleground that the intellectual battles of man for many subsequent centuries were structured and fought.

Christianity evolved out of the smoking ruins of the Roman Empire. In the last analysis, the medieval equation proved to be an unworkable one, but it was not without its humane side and at its best developed an idealism which far exceeded anything possessed by the ancients. There is a tendency on the part of the modern

scientific mind to view medieval centuries in the light of their shortcomings and injustices and to fail to recognize or account for the grandeur of the general medieval vision, in spite of the fact that in our society we continue to profit and benefit from the ideas and customs of medieval times. Our social and individual rights which we take for granted were, in fact, hewn out and established for us not out of modern scientificism, but out of the philosophico-theological *Weltanschauung* of medieval Europe.

As far as the official science of the day was concerned, man was studied mostly in the abstract and in his nature as ethical agent: his individuality and relationship to matter were relatively neglected. Man's consciousness was attributed to his "soul," a substance directly created by God, which resided during temporal existence in man's material body. The purpose of man was. during current lifetime, to learn about and serve the Creator; relative to how well the individual did this, his ultimate destiny would be either union with or separation from the deity after the death of his body. Finally, a second universe was to be reformed. in which all the just would live for all eternity in a state of eternal happiness.

One strong corollary of this way of looking at man was his theoretical status as person. In practical fact, these were harsh and frequently unjust centuries. However, as far as the theory was concerned, man was ordered directly to God in his spirituality, and subordination of one individual to the ends and purposes of another human was viewed as intrinsically sinful. This gave a strong impetus to thinking about the primacy of individual rights. and it was out of this framework of thinking that the (ideal) modern view of man arose as naturally possessed of certain inalienable rights.

At the height of the medieval philosophical achievement, man was important in his individuality because of his partly spiritual nature, but even more because of his direct orientation towards God. This is pushing the individuality of man and his separateness from nature about as far as it could possibly go. This is to an extreme degree sorting man out from the general background of nature and giving him a distinctness and an identity.

This does not, however, go far in providing concrete as opposed to theoretical insight into the individuality of man. It distinguishes man as an ethical individual, to be sure; it does not explain the appearance of this individual. John Doe, at this time and in these circumstances and in this social context.

To the extent, in fact, that concrete individuality is dealt with in formal thinking during the Middle Ages it is still on the plane of literature, as it was in Homer's time. The vignettes, for instance, in the *Canterbury Tales* are well sketched, adept in their characterizations, and contribute a good deal of insight into the fabric of medieval society.

Scientific investigation of human nature was a later development, a phenomenon which came into existence only after Western man had found his place in the universe, so to speak, and felt comfortable in looking around to perceive what else might be true about the world.

When man did in fact take an extended look at himself and the world in which lived, he discovered that the soul-body analysis of the philosophers and theologians was quite inadequate.

Beyond the distinctness of man from his environment, what began to emerge was the profound way in which he was continuous with it. Man emerged as a complex system of systems based on the intrinsic properties of matter as demonstrated through chemistry, physics, and biological science. all of which have come in their turn to be understood as coping with different slices through a single reality. Consciousness in man, finally, came to be seen not so much as essentially the operation of a distinct spiritual substance, but rather as an epiphenomenon to the highest level of organization in man, his central nervous system.

In this chapter some high-water marks in man's adventure of progressively seeing himself in different perspectives have been recapitulated. I have interpreted the human process in a somewhat abbreviated form, identifying three major psychological thrusts in sequence throughout history. The first of these thrusts I have typified by the characterization of Odysseus in the Homeric poem.

This writing is among the earliest in our direct line of culture and occurred close to three millennia ago. When in the Homeric poems our cultural ancestors began to record thoughts and ideas concerning themselves, they did so in the form of narrative. Man stands out as an ethical or active agent in a physical world which is understood on the level of immediate observation: man at this point has slight appreciation of the way his material universe actually is constituted.

Second, after the invention of writing, the Greeks very rapidly—within the matter of a few centuries—hypothesized an extremely broad gamut of ultimate world solutions, relative to what constitutes reality and the nature of man. This represented man's search for his own identity and culminated thoughtwise during the Middle Ages in Europe, when in the philosophico-theological matrix, man was viewed as spirit existing in matter, with a brief destiny on this earth, but with a far more important and ultimate spiritual destiny beyond the grave. Man stood out as the ethical focus of the universe, to the extent the universe was understood, all else having been created in subordination to man's needs. Whether right or wrong, this psychological thrust provided European man with a needed sense of identity. Having so in his own mind established his place in the universe, man proceeded to support and reinforce his position by the creation of a political and ecclesiastical world order which would sustain him and direct him until the universe as man knew it should be reconstituted at the time of the second coming of the Redeemer.

Third, once in a general sense that man had achieved this broadly accepted sense of spiritual identity, he used it as a springboard for quite another phenomenon, the discovery and mastery of the physical universe through science and technology. In so doing, he had to reject much of what he had thought about himself: he was forced finally to see himself not as individually created, but as having evolved on earth according to intrinsic potentialities of matter from the general background of the material universe, and his consciousness as an epiphenomenon to the highly

specific structural and functional organization of matter in his brain. A new emphasis on the continuity of consciousness with matter came into being, both on basic scientific levels in the biological sciences and on practical levels in the development of the behavioral sciences, e.g., psychiatry.

Currently, we are attempting to come to grips with destructive elements in our own culture on levels which only recently have manifested themselves to us as crucial. as exemplified in current concern over ecology and environmental pollution, not to mention concerns with racial injustice, international problems, and the problems of underdeveloped and overcrowded countries. But what may prove to be even more important than these urgent specific problems may be the direction and ultimate outcome of the general drift. Racial suicide certainly has to be considered as a possible outcome, as suggested in the opening pages of this book. But perhaps not.

On the assumption that we do manage to maintain our precarious existence, whither are we headed? What can be the possible outcome of this seemingly insane process that we ourselves seem to be involved in? Although we are in no better position to give a definitive answer to this than the ancients, in an ultimate sense, nonetheless, we do have more evidence to rely upon than they, having at hand the raw data of accumulated history: the problem, at least, is what absorbs our interests in these essays.

Chapter III
DUALISM

Dualism is the central problem in man's attempt ultimately to understand himself.

Man is conscious, and man experiences his consciousness in an external world, a world, that is. that somehow is external to and different from his consciousness. This fact has been one of the most profoundly structuring dimensions in all of human culture, and man's efforts to understand and to cope with it have created much of our intellectual tradition.

Beyond the basic problem of staying alive and exercising some level of effective mastery over his physical environment, one of man's most basic and intense drives has been the effort to deal with his own consciousness, which seems to exist in a world which is somehow other than it, yet with which it interrelates: that is the basic problem, or fact, of dualism.

As we shall see, some thinkers would prefer to do away with the dualistic problem entirely, and occasionally for reasons which have a sound psychological base; whether or not their attempts to lay the issue to rest are valid is one of our concerns; our larger concern, to be sure, is not to critique the thought of others. so much as it is to get the problem itself into some sort of workable focus and shape.

A little game that man has played throughout the centuries in his effort to gain perspective has been to place himself imaginatively in space, and then look Earthwards. This was, in fact, where this current writing began, as we listened in on the communiques of the Federation of Intergalactic Biosystems. The same gimmick was used by Cicero in his attempt to evaluate the place of Rome as a political entity in human experience in his

"Somnium Scipionis," which was an epilogue to his *Res Publica*. The major work itself has not come to us, but the "Somnium" has.

Scipio Africanus the Elder stands on the Milky Way and engages in converse looking down on earth. From this vantage point, he attempts to summarize and to evaluate the nature of the Roman polity.

Let us indulge this conceit once more.

The view towards earth from outer space might suggest that a theoretical problem in our day and age such as that of dualism is insignificant, in the face of the very real and material social. economic, and educational problems which so beset our globe. One might be tempted to feel that it were more appropriate to turn attention to the ecological problems which are so immensely serious at the end of the twentieth century. The really significant problems of earth might well appear to be those of starving and underprovided-for immense populations in certain parts of the globe, vast disparities in terms of distribution of earth's wealth, and injustices between man and man, in minorities, and so forth.

There is no doubt about the fact that it would do no one any real good simply to sit back pondering ivory tower questions while idly watching the entire world go down the drain, when one might be able to do something effective to stem the course of man's own folly and self-destructiveness.

But, at the same time, we find in man an insistent drive and a constant urge towards understanding of self and environment. This urge must be listened to and given its appropriate place in life. In a world where situations and events whirl around in giddying sequence and where stability is so difficult to maintain, it may well be that in the long run man's understanding of himself and the context of his values and philosophies may be one of the most important if not *the* most important determining factor: technology in itself is not labeled "free" ·or "slave," or "just" or "unjust"; if unplugged from a system of human and humane values, it is as much a tool of tyranny as of prudent benevolence. The attempt to understand man's general position in the universe and the general

course of his evolution and culture may in fact for man be the effort that establishes man's continually emergent moral posture—whether or not we pulverize ourselves in a cosmic poof may lie here rather than in our ability to cause the poof.

The phenomenon of dualism itself, as stated in an extreme form. is that man exists in two different worlds. One is the material world in which he walks on the ground, learns of the things about him and how to continue to exist for a period of time, the material world which he in some sense knows as "other." The other world is the world of his own experience, his thoughts and his feelings—the kind of thing that occurs when a man expresses hope or love or an idea that he has just had. These two worlds seem to exist parallel with each other for man and to interact with each other. but they do represent, and language about them seems to suggest, different classes of phenomena which do not appear in any very ready fashion to be reduceable to each other, although clearly there is interdependence.

Man, as we have said, from earliest times saw a distinction between spirit and matter; this duality of levels of phenomena constitutes the essential point as far as man's being in and interacting with his world is concerned. It is not just a historical or cultural accident. This fact of dualism was a necessary concomitant of the emergence of intelligence on our planet.

As we have pointed out, Plato. early in the philosophical game, ran a broad gamut of problems and possibilities concerning the nature of this dualism.

A note about "philosophy" is appropriate here.

Etymologically, philosophy is, of course, "love of wisdom." In our time. the word *philosophy* has come to mean a generalized view of something. a rather abstract consideration. We speak about "philosophy" of education or politics or personal value. "What is your philosophy of life?" is a comprehensible question, although generally we don't expect a precise or factual answer. Historically of course *philosophy* meant quite a different thing: as man developed a sophisticated culture, there were those who were

specifically interested in the development of knowledge and of understanding. They were called by their fellows, and to an extent by themselves, "men who loved wisdom"—or "philosophers." Philosophy wasn't any particular species of thinking. It was thinking and knowledge itself as applied to developed wisdom or more considered knowledge of the world. Philosophy, in other words. at the beginning of our culture was simply the formal expression of man's quest for truth. It was not a specific branch of human knowledge or science: it was science itself, to the extent that man possessed science. But it was in an investigation of his dualism that man began his quest for intellectual mastery of his world and environment.

A good source of hints about how the problem of dualism came to assume such a central place historically in human thinking is to be found in the consideration of the emergence of thought and intelligence in our now-distant past. It seems inescapable that there occurred, over many generations, an increasingly complicated central nervous system in the race of man and, concomitantly with this, more complicated function—intelligence.

Intelligence emerged as the final thrust of animate matter along the line of surviving more effectively and dealing more satisfactorily with the environment. Unfortunately, the stem of the growth and progress of the human spirit is largely lost from sight, except by inference. But, by inference, during the earlier stages of emerging intelligence, the distinction between experience and the world in which it occurred was not analyzed in a formal manner: intelligence involved an emergence from crude experience, but had not yet got around to the problems inherent in trying to understand itself.

The process of evolution took place over many generations and many centuries. But the language with which man found himself at the time he began to write was a sort of summary expression itself of his thought-requirements; its general form and pattern mirrored the needs and achievements of man as he emerged from the backdrop of nonintelligence, the general matrix from which he

sprang. Any language is in many respects highly developed and highly sophisticated; there is no such thing as really simple language. The process of complex symbolization that occurs in language is a magnificent thing to behold. At the same time, language which is comparatively "early," as far as our own standards and time scale are concerned, may also mirror relatively primitive thoughts—this, not in the sense of their being simple or naive as far as absolutes are concerned, but only in reference to later thinking that would occur, once the modalities of thought and language had been relatively perfected and the easy transmission of thought had been made possible through writing and, much later, through other of our more modern means of communication. At the time we effectively find man talking at all (as evidenced to us through writing)—and that was certainly much later than he began to talk—we find him in his language dealing on the one end with feeling states and cognition, so as to be able to express himself and to communicate with his fellows concerning various specifics in his state of consciousness, and, on the other, dealing also with things which are different from man and external to him: the world around, consisting of rocks, trees, et cetera, and parts of the self, also, which are relatively distinct from the core of consciousness, such as our toes, torso, and, in fact, brain itself, viewed as this mass of matter extended in space and time.

In essence, what man had going was two parallel "languages" within the same language, a real but ill-defined distinction, to be sure: I) a language which dealt with consciousness-states and 2) a language pertaining to and describing external reality.

We have already, in discussing early literature, talked about ways in which man as he emerged saw himself as distinct from his environment: this sense of distinctness or separateness also was mirrored in his linguistic patterns, in this distinction between language about internality and externality.

This is describing the general history of the process, with some reading between the lines and some interpolation into the known facts. But describing the emergence as a sequence of different states

only partially explains it; it does not give as such much insight into the internal *why* of the general phenomenon.

If we search a bit deeper than that, we find that there is a quite clear source for the emergence and development of the two languages—or, to speak more properly, the development of the two rather different ways of talking about reality inside the same language. the mode of reporting on subjective psychological processes, and the mode of describing or talking about objective, "external" realities. Simply put, language was responding to situations as they were presented to man in his experience. Reality presented itself to him in two polarities, and that was naturally the way he learned. or taught himself, to talk about experience and reality. Man was not subjectively aware of his complexly developing brain. He did not know of ways that physiologically and psychologically he was sprung from and tied into his real world. His own consciousness occurred to him as something quite distinct from his overall environment; his experience occurred in the world and contained knowledge about the world, as well as ability to influence what took place in his environment; but otherwise, such relationships as there may have been were hidden from him. He found himself, somewhat paradoxically, in a world which spawned him, yet to which he was in many respects alien.

Dualism today is frequently talked about in a pejorative sense, as though it were some sort of mental turpitude into which the incautious have occasionally throughout history unwittingly and evilly fallen. Nothing, in fact, could be farther from the case. Dualism is a simple concomitant of man's evolution organically and culturally. The story of man is the story of intelligence coming into being in the material universe in space and in time: intelligence is the increasing ability, over generations, of a particular line of organisms to cope with and to comprehend in evermore generalized fashion the environment. As such, it is different from the environment with which it is coping. It is entirely comprehensible and natural that man should first come to cope with the problems of experience as he perceived it, and then turn to establishing the

relationship between consciousness and specific materiality. This is the source of dualism and its psychological meaning. Whatever may be the outcome of the emergence of this phenomenon in the universe, dualism is part and parcel of the experience of man in himself, and not merely an unfortunate mistake.

In antiquity—or wait! perhaps eighty to one hundred generations ago, in a total experience of some forty thousand generations? —as distinguishable man (instead of "in antiquity" substitute "yesterday, when culture began. . .") man was immediately impressed by the seeming chasm that existed between his internal experience and material reality. In this context, he forthwith invented or "discovered" formally "dualistic" theories, seeing matter and spirit as distinct phenomena, arising from different origins, but with an overall pre-eminence given to spirit.

In Plato, more or less at the beginning of our philosophical history, pre-eminence in reality is given to *Ideas,* which exist outside the material world in which we experience the events of history. In Aristotle, his somewhat more practical student, one finds generally a clear acceptance of this world as reality, simply. Nonetheless. Aristotle too in talking about the ends and goals of human intellectual or moral behavior ends up flipping out of this material world in which we live and talking about contemplation of divine things. a reference to eternal truths and eternal realities which apparently he views as being in themselves significant as far as the universe is concerned, and unchanging in themselves.

The rest of the really significant thinking in antiquity ("yesterday, when culture began. . . ") consisted mostly of skirmishes on generally the same battlefield, without any essentially new contributions being made to the effort of man to understand himself.

Through Christianity, powerful ingress into culture was made by the moral, ethical, and cosmological thinking of the Jews. This was a practical people, surely, but one nonetheless which developed some remarkably clear, if nonscientific, thinking about the world and about the universe. There is rather a paradox about the early

Jews. They were not much as rationalists: their thought nowhere approached the intellectuality of the Greeks. However, in spite of this—and this is an interesting chapter in the story of intellect operating in matter—the Jews generated some extraordinarily clean and extraordinarily powerful abstract thoughts, not held as reasoned conclusions from orderly premises. but rather as religious teaching, as articles of faith and ultimately of doctrine.

We are skipping here as it were from peak to peak, but our intent is not so much to give a connected history of the human intellectual tradition as it is to characterize certain high-water marks in human experience which are important in understanding the current phenomena with which we deal in our own time and culture.

So, for our purposes at least, time passed and medieval culture came into being.

Barbarian Europe existed for several centuries amidst the various rubble left by the decay and ultimate downfall of the Roman Empire. In Rome itself, and for as far as Rome had stretched her tentacles into Europe, the ancient monuments were allowed extensively to decay, and for centuries nothing was built to take their place or to carry on a tradition of architecture or of culture.

Then man began to do things in different ways, to evolve new thinking, new art forms, and a new society. There is much that is relatively primitive and negative about medieval society. (One should not feel particularly alarmed at this: there is much that is primitive and negative about our own times as well.) But our interest here is not in emphasizing the negative side of the experience, but rather the side that represented the progress in human thinking in terms of putting things together in a positive, dynamically oriented fashion.

It is important not to look upon the medieval centuries with a jaundiced eye; the quintessence of medieval thinking was highly spiritualized; to ignore the significance of this, and to imply that it is a phenomenon which is merely to be rejected without explanation, is to do tremendous injustice to the fabric of history.

We are living in a time where empirical science has the upper hand. as far as the intellectual view is concerned. It is the general intellectual tenor of the day to view empirical science as the paradigm of knowledge and to scoff at anything else. There is a strength in this and a real reason for it, which we must explore as we proceed: however. this is in fact a narrow point of' view and one that does not really handle the situation overall. Empirical science is powerful: it is a particular way of studying and gaining insight into our universe; but it is not the entire answer, and there continue to be other problems with which we are still left.

We have referred earlier to the need for the adult to suppress and forget facts and attitudes of his younger years. One has to change. One must grow. And, in so doing, consciously or unconsciously. one has to put off and to reject earlier patterns of adaptation and maturation.

This is an intrapsychic instance of the common human dynamic of trying to establish oneself psychologically and personally by downing the other person: as one grows, the other person may be one's own younger self. This maneuver is important in the formation of personality and a mechanism that to some extent any growing personality has to manifest. However, it has a limit as far as its value is concerned, and, if it is not matured through, becomes an undesirable adult personality trait. More ideally, one should learn to stand upon his own merits and to find his mature self-image in what he objectively is and sees himself as: the tendency beyond that point to maintain ego by downing others runs the spectrum between unpleasantness on the one hand and paranoid delusional systems on the other.

The clearest material symbols of the thinking of the medieval centuries are the Gothic cathedrals of Europe. These are buildings of immense sublimity; equally sublime was the spiritual structure for which they were meant to be the material counterpart.

That the universe was essentially spiritual in nature and only secondarily material was a foregone conclusion in most of the thinking of the European Middle Ages. Frequently there was a

shrewd recognition of the way the material world operates, at least on the surface, but it was rather universally felt that the ultimate reality was beyond the world that exhibits itself to us through the testimony of our senses, and in this sense it was a highly dualistic sort of intellectuality.

For many persons, this way of looking at the universe has been left behind as culture has made progress. Nonetheless, this dualistic intellectuality of the Middle Ages continues to stand as an intellectual challenge for us today. There is a dimension of reality with which the intellectuality of the Middle Ages tried to deal which in some sense we as humans take for granted, but which is in fact prior to and outside the realm of any of the particular sciences.

There is, without doubt, an existing universe, and we are in it—not permanently, but, while we are here, we are definitely here. The "science" of the Middle Ages dealt definitely and explicitly with this existence-dimension. It found it necessary to conclude that the limited material universe in which we live must depend in some sense for its nature and existence on a source outside of it. which was etiologically prior to it, and probably temporally prior, as well. The argumentation from which this conclusion comes is not the typical argumentation of scientific thought, but it is a highly specific brand and type of argumentation and search after intelligibility.

This metaphysical, existence-orientated intellectuality has because of certain internal forces in culture largely been departed from as times and society have changed, but it has never been disproven, nor in fact shown to be irrelevant. Many minds have found it personally important to feel that the metaphysical has in fact been disposed of, and so they like to conclude that this is the judgment of history. However, this does not follow so much from any reading of history that is sufficient to the facts, but rather from emotional needs, pure and simple.

In the medieval synthesis, man finds himself conscious in the world and then sets about to understand what he can about this state of affairs. When he tries to analyze his position intellectually. he

finds that at core the material world presents itself not as a primary given. but as depending on something outside it, which is spiritual in nature. This spiritual being is necessarily unique, since infinite. It is eternal, intelligent, spiritual, and entirely subsisting in self: it is what all nations have referred ~o as God. From eternity, this infinite being was capable of an expression external to itself: the capability of being imitated in particular, finite being. As then it so wills to be externally imitated, the external material creation came into existence.

In this universe, man had a particular and special creation. Man had been created to spend time on earth and then without death to be united with the eternal principal of the godhead in direct union after having worked through a process of learning about and acknowledging God in the activity of life. However, there was an early fall from this original state, which in the fullness of time was to be redeemed through the sacrificial life of Jesus.

Man, then, was seen as having both a material principle, his body, and a spiritual one, his soul. The expression of spirituality throughout life depended on two fountainheads: 1) rational, what came from intellect being aware of and understanding intellectuality and spirituality in themselves and 2) fideistic, resting on a specific revelation in time by ultimate spirit, God.

We are not here interested in the veracity of this construct, but rather in its nature as artifact, as product of the human mind. It is a matter of indifference to the current situation whether or not. for instance, the essential doctrine of Christianity was "revealed" or "merely imagined." In either event the holding of these ideas in consciousness was a psychological phenomenon. As such, the phenomenon had status as mental product, and that is what we are interested in here. Studied as phenomenon, the medieval venture presents itself as startling.

We watch here, over time, an animal evolved from the background of matter to the place where intellectuality is introduced into the world; this animal develops culture. and later, writing. after which, as we have seen, his consciousness literally

explodes in very brief time—whether or not this fact is realized by the individuals who live internal to the explosion.

Here is man, understanding and writing about himself. He becomes confounded by his own nature and evolves an intellectual picture of himself and the universe. In this picture, the ultimate reality is not the seen, visible world, but a world of eternal spirit, of which his own consciousness is a finite imitation.

His experience is not merely an episode in the material universe, but an opportunity to achieve union with infinite spirit through the life process; in current time, man can become more and more closely assimilated into ultimate spirit and, after death, can experience a direct and complete fulfillment of human yearning for eternity and truth. In his intellectuality, man reaches out for all being and all existence, whatever and wherever it might be: this yearning is to find fulfillment ultimately in eternal union with the godhead beyond the material world.

At least, the medieval solution is a fantastic surprise in the universe. Whatever the specific origin of man, he did in some sense evolve or come out of the background of matter and particularity. In his existence and in his experience, the only content that he had ever known was the material world in which as generation passed to generation he had lived and cared for himself. Now he makes a truly monstrous sort of extrapolation and builds an entire culture to support and to sustain the extrapolation: he decides that his most typically human dimension, his intellect, is in fact destined for existence beyond what could be seen, an existence, in fact, more significant and more important than the only existence man had known in experience. In an incredible way, man, emerging from matter, promptly sets about in a very surprising fashion to repudiate matter.

It won't do to label this way of thinking a "defense" against the difficulties of this life or to say that these are concepts, for instance, that were fostered because of political reasons to keep the mass of people in their proper place. There a much more serious systematic problem is involved: how it might happen that any being with such

antecedents as man might educe from his experience such an apparently preposterous position.

How could man as an organized system of matter make this fantastic leap beyond his immediate experience? This is the core problem of dualism. And, whatever the solution, the problem is certainly not a mere artifact: the phenomenon is very real indeed, a leading dimension in fact of our own psychological history.

What, in general, has happened in our culture relative to dualism? Briefly, it is in an extremely confused state. It is not a problem that has ever in actuality been solved; it is one that man, in his urge to get ahead with understanding his universe in other dimensions. simply decided to live around. We have pushed ahead and got on with the general job of discovery and invention, without solving the prior problems with which man had presented himself. To understand this it is necessary to develop some insight into the manner in which dualism became concretized during the late medieval centuries.

The basic datum, the backdrop out of which the high thought of the Middle Ages evolved was a given society, with its proper forms, customs, opportunities for individuals and groups, and a definite power structure.

Over a span of several centuries, the thinkers and scholars of the day worked with the evidence of the world around them and developed a theory to explain the universe as seen from their viewpoint. This. in all ages. in every environment where the phenomenon occurs, is the operation of inventive-creative intelligence. But then. society took the insight and the theory and institutionalized it, casting it into the form of relatively inflexible doctrine. The initial motivation in back of this institutionalization was believed reasonably motivated; it was genuinely and sincerely believed that in the statement of religious and philosophical doctrines, ultimate truth had been arrived at and that this truth should be protected and defended by the forms of what was felt to be a relatively permanent and stable societal structure. The long and short of it: the men responsible for establishing the institutions of

the Middle Ages had a strong expectation that their civil and ecclesiastical forms of societal structure would endure until the universe was brought to its completion at the time of the second coming of Christ. As far as economy of human effort is concerned, it would have been relatively convenient had they been right.

The late medieval mind came to view its religious· and philosophical teachings not as developmental steps in the evolving culture of man, but rather as immutable dogmas, which stated the essential truth concerning the world and which essentially allowed of no further expansion. Man's efforts at coping intellectually with problems in his experience eventually got solidified into a monolithic system, disagreement with which came to be viewed as revolutionary and heretical. The medieval system developed a mental outlook which could not yield gracefully to change. In retrospect, change in mental outlook has been as basic a dimension in human cultural progress as any other.

The height of medieval intellectual achievement was, in fact, dualism enthroned and sanctified. There was not much general doubt in man's mind at the end of the Middle Ages what the human game was. Man, before being able thoroughly and with scientific objectivity to investigate the ambient universe, had to be in the main satisfied concerning himself.

When man began to look around him and to allow other ways for the introduction of empirical data, the overall situation developed into a set of confusions from which we have not as yet recovered.

Empiricism is not completely a phenomenon of modern times. Some measure of empirical observation and science had occurred from earliest history; rather, what we are talking about is the predominant and formative trend in society at a given time. In that limited sense, it is reasonable to talk about the development of "modern science" as being typically a Renaissance and modern phenomenon. If that is the case, when "science" began, a rift occurred in the continuity of human thinking with which we still live and which in no very satisfactory way has been resolved.

Evolving man, even when in so doing he had prided himself on being at his most rational. has. in fact. made in the process some serious systematic mistakes. of sufficient magnitude to provide a few chuckles to the view from the Milky Way; however. it is man's tendency to blunder ahead and to strive for goals as they present themselves, without bothering too much to ·make his theoretical steps too tidy.

The explanation of this pattern of cultural change lies not just in the capriciousness and inconstancy of man. Rather, what is involved is conflict between man's conscious processes and his but poorly realized urges in certain directions which have escaped prior conscious analysis. Man is, as we have become acutely aware, in cognitive contact with himself and his environment on levels other than those which fall within the scope of his conscious, fully conceptualized and verbalized processes. The reason that some ideas catch on like wildfire, once they are expounded, is not necessarily that the man who enunciates them in words is unusually brilliant; it may simply be that the times have become ripe for a particular idea. If understood in a dynamic, evolving sense, Jung's concept of the collective unconscious in man and in society is valuable here: Jung came to perceive that in back of the individual life of man lies a matrix of residual psychology which is shared in by all members of a culture or the race as a whole. This is true, and it has been a determinant not only in the health or psychopathology of individuals. but also in the evolving history of man, in a profound way.

The dualistic doctrine of the Middle Ages developed and remained largely in the hands of the church and of the university-based faculties of philosophy and theology.

When modern science began to rear its head, the initial reaction on the part of the intellectual and spiritual establishment was to reject it as an impious distortion of the intact body of divine wisdom. Modern science, since it was not recognized as valid by the establishment, responded by ignoring the problems of

metaphysics and dualism in experience and plunging ahead with the application of its methods, as they become established.

The way in which the situation was handled was a procedurally unsatisfactory one. In an effort to come up with an "explanation" of ways that the human mind is in contact with the universe, the emerging thought of modern man, to generalize, evolved the following theory: 1) on the one hand, what constitutes real "knowledge" is mathematical or "scientific"; 2) at the opposite polarity, there is the acceptance of things of the spirit by means of "faith" as some sort of direct cognitional factor, which, however, does not properly constitute any rigorous system of knowledge. The problem: this does not explain what it was in the nature of man and his experience that caused man to generate the medieval synthesis in the first place.

Organized religion has itself remained confused about the nature of the issues involved and has not been overly satisfactory in coming to grips with the intrinsic dilemmas. Man has not been willing completely to throw overboard his religions, in some sense feeling that there may be something there that is more valuable to keep than would be accomplished by religion's destruction, even though the actual form of religion might be a bit irrational. At the present time, organized religion is more effectively and seriously under attack than it has ever been, not because a direct assault is being made upon it from an intellectual or spiritual point of view, but rather because its significance in society is being questioned by our changing culture. What the outcome of these forces is, or will be, as yet remains to be seen. But it is safe to say that religion generally is going to have to find some more generally satisfactory basis for its operation in society or it is doomed to become increasingly anachronistic and lacking in significance to mankind in general.

As far as formal philosophy is concerned, things really have not tended to be very much better; but, to understand that matter, a bit of background has to be understood concerning the development of the phenomenon of modern philosophy.

Time was, as has been mentioned, when philosophy was not distinct from other sciences. The complexion of the educated world was less structured than it is now. and philosophy was coextensive with man's learning. During the Middle Ages, there did evolve distinct faculties in the universities, but, even much later than that. the term *philosopher* was by no means a sharply defined one. Two centuries ago, for instance, a rough distinction was made in England between "natural philosophy" and "moral philosophy," the first of these meaning what we generally refer to as empirical science and the second what we refer to generally as simply "philosophy" today. This kind of distinction was fairly common in Europe until well into the last century. It was only then. and up to the present time, that philosophy definitively became segmented out as a fairly distinct department in a university that follows a distinct discipline separate from the other humanities and the exact sciences.

Philosophy today does not as such hold much place as far as being "Queen of Sciences" is concerned. People generally do not look to philosophy for the highest order in principles in human consciousness or human thought. And indeed, most philosophers would certainly not want to feel responsible for having to provide that sort of service.

Rather, philosophy has become a specific and scholarly sort of commentary on the intellectual history of man. Only in a very restricted sense does it consider itself to be the investigator of the most abstract and deep roots of human thought and experience. In many circles, in fact, philosophy appears to be a process that is bent on its own destruction. A significant amount of modern philosophy is concerned with the general proposition that the traditional philosophical problems really aren't problems at all and that. as a matter of fact, the clearest function that philosophy should perform today, as a distinct human discipline, is to demonstrate by one means or another that there really isn't any philosophizing left to do in the world anymore.

In spite of its importance historically, we apparently come to a rather sad requiem, generally, for dualism, as far as the official

scholarly mind is concerned. The problem which for the first two thousand years of our written tradition occupied the best of human theoretical speculation has in fact become a dead letter, as far as much of learned science is concerned. For the most part, we tend to feel as though the dualistic problem is a dead horse that has been beaten badly enough and should be allowed to lie in its own decaying remains. It is as though "official" thinking is simply tired with the problem and feels that there *is* nothing else to say about it.

Mankind has seen the emergence of a new method of investigating his environment—new at least in the sense of the magnitude of the discoveries which can be attributed to it. In the past decades and centuries, we have opened up factual vistas and dimensions of the world of which the ancients had but dreamed. Our knowledge of the earth, of life, of chemistry, and of the overall evolution of things is without question such as to stagger the mind. What the average graduating high school student knows today as far as fact concerning our universe is concerned would have amazed a Lavoisier or a Huygens, not to say an Archimedes or, indeed, an Aristotle.

The general feeling in scientific circles is that the problem of dualism. or of spirit distinct from mater, has been found irrelevant for man.

The truth is, however, more complicated than that. Intelligence, or consciousness, is an operation which has emerged from the general background of matter and which is in many ways explainable at present writing only in terms of its own realm; it is a phenomenon the material correlates to which are but poorly known (only guessed at), in spite of our immensely increased knowledge of the human brain and central nervous system. We know many of the conditions for thinking, and we know a great deal about the material organization of the brain, but, in point of fact, what actually it is that specifically and necessarily underlies the phenomenon of consciousness or intelligence remains unclear. Bear in mind, however, this context, since we will have reason to return to it.

At the point where we have an exhaustive knowledge of the physical and chemical substrate which underlies conscious functioning, we doubtless will have a much clearer perception of what the ultimate philosophical problems really are: what, in short, is really going on in a world where matter, after millions and millions of years, has organized itself to the point where it is qualitatively capable of sustaining intellect. How many millions of years? Well, not all that many—not, for instance, millions of millions, but perhaps only ten thousands of millions of years or ten-to-the-tenth years, a length of time which cosmologists now tend to feel is sufficient to get us back to the initial "big bang" which set our universe in motion. But, within the smaller confines of earth-time, a relatively slow evolution of man and his specific consciousness occurred over perhaps a million years, after which with the invention of writing in particular, it exploded over the last few millennia.

In this last relatively brief period of time and, in fact, in the last few centuries and decades of it, man has developed a cosmic consciousness that knows not only of itself, but also some glimpse of the total process of the universe: consciousness verging towards an amazingly complete understanding of the entire process that led up to and continues to support itself.

The problem of intelligence, which is nothing more nor less, in fact, than the dualistic problem, is in some sense more understandable, but at the same time no less mysterious than it has ever been. Viewing the universe as a whole, the occurrence in it of this process which goes back to grapple reflexively with the problem of its own antecedents is a more startling phenomenon qualitatively speaking than all the steps which had led up to it.

Chapter IV

LIFE SPAN

We assuredly at this point are not done with man's past. But we must press on into his present—not yet into the specifics of the problematic, practical world wi.th which man has to cope now and always, but into the dimension of our current knowledge about man as biological organism. But, before we begin, let us have a very brief view from our current vantage point over the work of the earlier chapters.

First, mind as astrolabe, the tool or implement by which man performs his highest order investigation and integration into experience.

Next, man appearing out of the mist of the past into the daylight of written literature. Odysseus, man appearing as individual adventurer, coping with experience and with environment. Man as hero, striving to overcome, to master, and to establish a fabric of human living.

Most recently, man trying to understand himself in the implications of the separateness he experiences from the rest of the universe because of his intellectuality: the problem generally of dualism throughout history.

Now, we wish to explore ways in which man is tied into his world as a psychobiological unit. The quest here is the vision that modern science has given us of man as organized matter. In the next chapter. "Individual in Matrix," we will structure the way in which individual man fits in and builds not so much in terms of the material elements which go to make him up, so much as in terms of

the way in which he fits into, affects, and is affected by the spot in the overall matrix into which he is born.

A historical conclusion or, if you wish to soften the word, postulate, that we have been working with is that man, when he reflexively discovered himself as conscious, strove to establish his identity in the world as agent, as moral unit. This is one of the major determining dimensions of man's intellectual and cultural history through the first two millennia of his written tradition.

Although some fitful attempts were made to work with empirical method, corporate mankind rejected, for the most part, these efforts, the reason being that man had not become culturally mature enough to allow society in general to support such concerns.

But when man finally did feel comfortable enough about himself to look around with greater specificity in his world and environment, his consciousness was ripe for science. Once discovered, once extensively applied, science exploded our informational knowledge out of all bounds, and taught us much about the origin and growth of the individual. Philosophers from the beginning had recognized the physical body of man and its general characteristics; however, actual knowledge of the body, until relatively recent times, in health and disease, was in fact quite superficial, and did not extend much deeper than the eye could see.

In antiquity there did exist in the work of Hippocrates and others significant pragmatic observation and acute identification of disease syndromes by description. This early work did not bear immediate fruition, but went into relative obscurity during the Middle Ages. We have since gone far beyond what the ancients knew and observed; today there is a remarkably detailed picture of the growth and physiology of the human animal, although the process of discovery is yet incomplete.

The inheritance of the individual is complex, be it privileged or quite the contrary. He has what is given him by his parents in their socioeconomic niche and according to the people they are. Through them, in addition to his cultural debt is his genetic inheritance, what makes him be man at all and, within variable boundaries, what gives

him his biological specificity. He has also the total ambient surround in which he lives, including physical and social factors, such as slavery, freedom, war, peace, prosperity, poverty, and so forth. The overall matrix is well-nigh infinite in scope.

We tend to look upon the infant as relatively simple, and rightly so, for he is, relative to the phenomenon that is an adult human. Yet the infant objectively is already immensely complex. Pushing things back to the very beginning, when sperm and ovum meet in the darkness of a mother's body, a fantastic complexity is found even in the fertilized egg. The system present in the initial product of conception is more complicated and more subtle in its capabilities for communication and expression than any of the systems that man has devised to his own manufacture—although, to be sure, the networks of communications with which man is now surrounding himself and by which he is extirpating distance around the globe are perhaps achieving a distantly comparable degree of complexity and capability for instant adaptation.

In the fertilized egg, there are forty-six chromosomes, twenty-three having been provided by the gamete of each parent. Each chromosome contains hundreds of genes, which go together to make up a "code" which, as long as the appropriate environment is maintained and the proper raw materials are provided, determines the development of the individual within what yet remains a wide range of variability.

This coding system is not constituted as a unitary data bank from which information goes out to all distant stations in the organism. Rather, the code system is replicated in each of the billions of cells in the body, forming thereby an interdependent network of organized and organizing matter in which mutual feedback is as necessary as output in shaping the outcome of the process. The system is so subtle in its expressivity that an individual's eyes, the length and shape of his nose, and other facial characteristics may so closely mirror those of one or other of his parents that he is immediately recognized as his or her offspring. This is so familiar to us that we are not surprised by it when it happens; however, the

nicety of the dynamic communications that occur here is staggering to the imagination. There is no doubt today but what all of this extraordinarily refined and highly specific formation and development is going on controlled by laws that, although they may not be fully understood at this point in time, nonetheless operate in context with and in continuity with the general phenomenon of biochemical process.

The original fertilized egg does not immediately develop into a small human being, identifiable as such. What happens is that a small cluster of cells emerges which soon evolves into a blastula. The blastula is a cell-structure in the midst of which a cavity is formed, in which the embryo begins to take form on a stalk. The wall tissue of the blastula then goes on to form placenta and fetal membranes, while the embryo continues its own evolution.

Though we are not individually aware of it, what occurs *in utero* is indeed a very busy and very hectic sort of process.

Once the organism is out of the womb and living its semi-independence, interrelation with the environment becomes increasingly contributory to development. With respect to what occurs during early life *in utero,* the picture is somewhat different. Catastrophic environmental factors can, of course, affect the growing fetus. However, as long as the basic life-support systems provided by the mother are generally within the range of average, which is in fact by far the most common occurrence, the development of the fetus is much more heavily determined by the genetic direction intrinsic to it than it is by the minor environmental variants which do occur.

One remarkable thing about the fetus is the extreme degree of future-directedness to be observed in it: the systems which are being developed are not meant to be primarily adaptive for life *in utero,* although that, of course, is the only life yet experienced by the developing organism. Rather, they are clearly directed towards existence of the individual independently in the outside world. There is a complex series of systems which is soon established and even *in utero* much identifiable intersystem communication and

resonance, in addition to much that at this juncture cannot be specifically identified, yet must be hypothesized. The outstanding determinations which occur are anticipatory of the service to which they will be put in the world outside the womb.

To generalize beyond what occurs specifically *in utero,* the organism overall is a process in organized matter which has potential for adaptation, operating within the confines of certain ill-defined maxima and minima relative to time, size and specific morphology, and unique individuality in achievement and performance. Many aspects of the organism have a certain time-developmental-specificity to them, although there may be considerable variance from average norms across individuals in the species.

This is not a simple system but a system of systems, each one remarkable in its own complexity and also in its interdigitation with the whole. And all systems grow in man in particular to support what we refer to as the "individual," or the "personality"—what was described when we picked up man at the emergence of significant written literature: Odysseus. The Greeks, of course, knew about the vulnerability of man and of his susceptibility to disease and ultimately to old age. They did not, however, know much about the underlying systems which support the development and ultimate functioning of the organism.

Consciousness of the underlying support systems is not necessarily helpful as far as overall function is concerned; indeed. the overall system may in fact be successful to the extent that the "individual," the significant "personality" which the organism supports is able to "forget" the underlying patterning and to function as a total human in the environment. It doesn't do humans any particular good to know the full pattern of sub-systems which support their mentality and psychological functioning, unless they happen to have some specific professional reason to be interested in this. Man characteristically functions in terms of acquaintance with what is advantageous or disadvantageous to him. He perceives danger mostly as he has discovered it in experience, with little

appreciation of the multi-leveled vulnerability to which he is exposed by his own complexity.

The patterns of possible malfunction are variable from individual to individual and are also manifestations of ill-defined maxima and minima. It is frequently surprising, clinically, how much pathology the overall organism is capable of sustaining in the presence of marginal maintenance of the essential vital functions. Yet there still is manifested in the life history of the organism a broadly determined pattern beginning in immaturity, moving to maturity and ultimately to senescence and death.

This is the life span of an individual, a contingent reality, capable of being interrupted at any point in its progress. At any time, the supporting life systems can be disturbed to such an extent that basic integrated functioning is no longer possible, and the individual by that very fact ceases to exist.

We are not interested here in giving a complete exposition of human physiology, but it is necessary for our purposes to construct an overview.

The animal embryo—and that includes the human—begins almost immediately to differentiate, spatially and in specificity of organs. While it is helpful pedagogically to study "systems," it should be recognized that there is functional overlap and that no system is completely and entirely limited to its major function.

The general structure of man is determined for the most part by the bony skeleton, without which, of course, he would collapse on the floor as a rather misshapen bag of various entrails. The central structural unit, the torso, is structured by spine, thorax, and pelvis. Of the appendages, the head is largely the communications center while the chief purpose of the limbs is to contribute to the motility of the organism, there being few if any absolutely vital functions which have the arms and legs as their seat of operation.

A monocellular organism diffuses metabolic products directly between itself and its environment. An animal like man has so many cells that if this were to occur in him, there would have to be tremendous surfaces exposed, and the environment would have to

be amicable for the exchange of substances. The first of these conditions would require that man be a large amorphous blob; the second, that he sit someplace bathed in nutrient fluid, which would cut down on his getting much done. A more acceptable answer, the one found by nature, has been to fold into his body membranes whose surface area is much multiplied over their apparent surface by a large number of pockets, invaginations, and foldings. Man is a marvelous example of efficiency in packaging.

The gastro-intestinal tract is in essence a tube that runs from one end to the other, in which occurs primarily the assimilation of nutrients from the environment. The chemistry here is fantastic in its complexity and equally fantastic from the point of view of the simplicity with which it generally operates. Other important organs, such as the pancreas and the liver, originally come into being as out-pocketings from the primitive tube, but they grow with their specific structure and establish themselves apart, connected by tubes with the intestinal tract itself.

It is possible to look upon heart, lungs, vascular system and kidneys as a system with different parts, which has as its chief objects: 1) exchange of gases which are needed for the oxidation process and 2) transport throughout the body of important chemicals, either waste products or building blocks in metabolism. Simply put, the kidney is a scrubber for the system.

The endocrine system controls the rate and coordination of many important functions, such as metabolism, growth, sexuality, and total body response to stress.

The chief communication system, however, and the level of highest organization is in man to be found, as in other higher animals, in the central nervous system; but, in man, the complexity of this system is beyond that of any other living being which we know.

Our own age is a period of exploding knowledge concerning the nature and operation of the human brain. We have achieved a highly specific knowledge of brain nuclei and tracts. We now know in detail where primary motor and sensory function occur and how

these functions are communicated; where basic functions relative to fundamental life parameters occur; where the centers are for moderating and coordinating man's actions into the smooth phenomenon that they represent; and even where the psychological processes of consciousness, thought, and emotion are generally mediated.

The mind-brain problem will assume central significance in these essays: we will here reorient ourselves in terms of historical perspective.

An extreme position is that man's consciousness only incidentally is in the body, that he is spirit which happens to be captured within the compass of this physical reality. but that he inhabits the body only by some sort of mischance, and the body is not in any real way relative to human operation. This is an extreme statement of Platonic dualism.

This is a relatively primitive idea. A much mitigated form of this is that there is in man a level of psychological functioning which relative to its origins depends upon brain operation, but on higher levels achieves such freedom from material functioning that direct specificity in central nervous system—representation is lost: in this theory, the comprehending consciousness of man operates with partial independence from brain specificity; meaning in consciousness is arbitrarily assigned to brain configuration. Man's capacity to generalize is extensive, and it is problematical whether psychological function requires complete correlation with brain state. When, for instance, I understand an abstract concept such as "liberty" or "good," I am understanding something that is applicable in analogous situations, without any real change in essential nature of the concepts: there is no question about the fact that I am able to do this: the question is whether this freedom of mental function means that psyche has escaped specific material configuration. Given the fact that material configurations must be definite, it is difficult to imagine, at least, how one specific configuration could in some sense be so widely applicable to

situations in some respect similar. yet widely varying in their nature and phenomenology.

The other position, of course, is that there is a specific and naturally evolving brain state for each psychic state. In this way of looking at things, the brain correlates of consciousness must be supposed to receive some sort of specific assignation of meaning in a continuous process, as the total organism reacts to, computes, and organizes experience.

We do not have an empirical answer for this problem at this time. However, as a heuristic principle, it is valuable to assume that the truth lies in the direction of completely specific correlation. The more one thinks in terms of psychological operation which frees itself from the brain, the less likely one is going to be to perceive the specifics of brain operation that occur, to be interested in pursuing research and investigation.

With respect to the overall developing patterns of human knowledge and thought, more harm has been done historically by overlooking the possibilities of further empirical discovery
than by the opposite. At the present time, fascinating horizons are continuing to be researched in the areas of specific brain function and neuronal and protein configuration: we cannot know at this point how far this research is going to go, but it is imperative not artificially to place boundaries.

We are here viewing man's brain as an essential organ-function system; there is in human living a price to be paid for having developed this kind of consciousness. The tragedies that occur in such a system are infinitely more poignant than those that occur in insensate nature. Not only is the system sensitively vulnerable: in its function. also, it can equally as well be turned towards destructive and inhumane ends as towards productivity. However, although the negative dimensions of the phenomenon are evident, it is only by his specific consciousness that man does anything worthwhile or specifically human. We are not done with the problem of man's brain, but we must here pursue the overview.

Sexuality is a basic life system, unique in that from a biological-physiological point of view, it is aimed at the ongoing species-process and not at the direct life expression of the individual. Sexuality does not immediately support or make possible the life of the individual in which it is found: what it allows is for him to propagate his kind. Now, quite paradoxically to this, there is no other life system which so extensively and so conclusively inserts itself into the psychological operation of man. The other life systems, too, impinge upon our psychological functioning: our brains, our hearts, our intestines, and our limbs have their contribution to consciousness: they feed into the construct that is loosely referred to as self-image; however, none of them affects us so profoundly as our sexuality. Much that is specifically human arises out of this paradox: there is no greater joy than that which may be generated within the broad context of sexuality: unfortunately, the complexity of the phenomenon gives rise to possible malfunction, and there is also no other dimension of human living that causes as much unhappiness and misery as sexuality, in the range of its variable expression.

Other life systems show typical patterns of development—maturity-senescence-death; however, to a large extent, they provide qualitatively the same function for the organism throughout its life span. The circulatory system has from beginning to end the task of gaseous and chemical transport and exchange, and this function generally maintains a constancy of importance and pattern throughout life. So also with pulmonary, renal, gastrointestinal, and skeletal structural systems.

The same can be said, though to a lesser extent, about the communications systems of the body, the central nervous system and the hormonal-endocrine system. These, in different ways manifest greater stage specificity throughout life. However, the stage specificity of sexuality is more extensive and particularly unique.

Male and female in the human species exhibit differences, which in turn have been exaggerated and exploited by culture to the extent

that there is a tendency to think of the two sexes as radically different kinds of being; to a limited degree, this is true, as far as the developed psychophysical phenotype is concerned. The fact of sex does divide humanity into two rather strikingly different camps. However, this psychological and sociological variance belies the biological similarities that there are between humans. The fact is that male and female in humans are minor variations of the same theme: phenomenally and in their developed state, there may be marked differences between the two poles, yet biologically, much more is shared than is different.

The origins of sexuality are buried in the distant past. A paradox: sexuality in human life as it exists today is a complex, complicated and complicating factor; its origins, on the other hand, as life evolved, were simple and totally lacking in the psychological implications of sexuality as in fact we know it in man.

Although the origins of sexuality as far as direct evidence is concerned are lost in the past, we know where things began, and we know where we are now so, with some interpolation, we can attain understanding concerning what must have occurred in between. The current discussion constitutes a sketchy road map, the details of which will continue to be filled in as man continues to reconstruct the pattern of things and events which has brought him to his current state of grantedly limited perfection.

The beginnings of human sexuality are not to be found in the beginnings of humanity, but in the beginnings of higher life forms generally; the phenomenon of sex got into the biological stream long before man appeared.

About the beginnings of the total cosmos we will not concern ourselves here; this is a matter to which we will later return. Let us assume that existence of an earth, this particular planet revolving around the sun, on which there developed conditions satisfactory for the appearance of life.

First of all, simple chemical elements, followed by more complex molecules, built around the peculiar qualities of the carbon atom with its four equal atom-binding valences stretching out to

invite formation, under proper circumstances, of organic chains. Then, self-replicating molecules, which, in a protective chemical environment were able to incorporate other molecules from the ambient surround into their own structure. After which the gradual development of single-cell organisms, more complex than any simple molecules, which pass from generation to generation by achieving internal and external maturity and then dividing.

In brief form, that is a recapitulation of the origin of life, as we know it to be, up to the introduction of sexuality into the tapestry of life.

Now sexuality does not, perhaps to our psychological disappointment, introduce itself into the unfolding of the universe as a lovely female standing appealingly with limpid eye, moist lips, swelling breasts, and alluring line of curved hip, responded to and sought after by a strong and handsome male; that is a phenomenological development that comes far down the road indeed. In reality, male-and-female, as such, is not implicated initially at all.

What first appears is specialized reproductive function in a complex organism: this has less human appeal, considering that what we are talking about is a squiggly small form in some prehistoric pond in an atmosphere and environment which knew neither the lust of man nor the creative molding and artistic influence of his creative spirit.

The biological reason for the introduction of sexuality into the picture was not the chemistry which occurs when human male and female meet each other in a context of possible sexual liaison, but, rather, an inability, concurrent with progressive complexity, for the next generation to occur as a result of complete division of the generating organism.

Omnipotentiality is a characteristic by which undifferentiated cells in an organism are able to assume the form of specialized cells, should they be in the proper environment and should they be "requested" by the overall status of the organism so to do. This is characteristic of complicated life forms and is to be found, for

instance, in man, in the connective tissue system, at least to some degree.

When too-great specialization occurs in the formation of tissues, omnipotentiality can no longer be maintained; a particular cell has gone too far down the road to maintain the ability to go another way. As life forms progressed in complexity, their cell makeup lost omnipotentiality, due to necessary specialization.

In progressively complicated animals, the maturity which in lower forms heralded production of the next generation by division of the organism gave way to patterns of senescence from which the individual could not escape. With new complexity of organization, maturity in the individual became a disjunctive phenomenon from survival through division, and a new set of principles and rules was required for continued operation.

A by-product of increasing complexity was the incapability of the individual in a life stream to move on in any life-continuous sense into the next generation. The individual could no longer divide into two independent organisms, each one of which would carry on its own life cycle. The two reasons for this, simply, are: 1) that omnipotentiality had been lost with greater specialization within the organism and 2) division of the individual, because of extension of differentiated parts in space, had become a stereotaxic impossibility: the individual had become so interdependently complex that its division would result rather in its total extinction than in the survival of two viable members of the succeeding generation.

With increased biological complexity, the reproductive function was necessarily relegated to a sub-system within a total organism-evolutionary progress spelled out both the death sentence of the individual and also the appearance of sexuality.

The basic requirements relative to the introduction of sexuality were: 1) the segregation of part of the cellular material of an organism for the reproductive process, specifically, and 2) the investment in this tissue of the total potentiality residing within the

species for the reproduction and ultimate full growth of the following generation.

This does not of itself say bisexuality, the situation where genetic material is contributed to a single fertilized ovum from each of two parental sources. We cannot explain fully why it is that nature shows a bisexual mode for reproduction of all higher life forms. Presumably, in the progress of species, there was some advantage to be found in the concomitant genetic mixing; however, the exact laws and mechanisms are not clear. One clear result of bisexual reproduction is the establishment of definite genetic pools within groups of similar organisms, with the development of the evolving group as an observable phenomenon in itself, as distinct from the occurrence of evolution in an individual line.

Although the exact mechanisms require further study, bisexuality does preserve the continuity of a species in the reproductive tissue of individuals, and, also, there is overall capability of the system to respond to change. There is the capacity for variability and also for the maintenance of improved variables, once they have become established.

All higher life forms are in fact bisexual; this is a phenomenon running through all phyla and species. Incidentally, when man appears, it becomes a significant determinant of many psychological and sociological phenomena of his total complicated existence.

In man, sexuality is present, primarily in the sense that it is through genetic development and sexuality throughout the history of evolution that man is even in existence: this is the foundation for the development of the species and also, of course, for the production of each individual—the conception and growth of the individual in his mother's womb and his ultimate coming into the world by the mechanism of birth. So, in this sense, sexuality is absolutely fundamental, though relying on elements more fundamental still.

However, the picture is more complicated than this. Sexuality, which from a total biological point of view was a necessity

introduced to make the development of higher species possible, in fact comes to permeate the whole of human psychosocial existence.

From a clinical point of view, psychological disorder does not occur without some disturbance in sexuality; it is that fundamental to human existence. On the other hand, equating human maturity with adequacy in sexual function is in its own way an oversimplification of the complex process of being human.

Within limits, there is an age specificity in the development of sexuality in the human. Early in embryological life, the *analgen* of sexuality in male and female are morphologically identical. However, in response to the exquisitely fine demands made by the genetic system, these *analgen* are urged preferentially in the direction either of maleness or femaleness, a process which involves preferential development of one pattern of structure over the other, with a concomitant lack of development in the opposite sexual counterpart. In the case of normal development, by the time of birth, differentiation in sex has been long established. although there still is a clear-cut relative immaturity: the distinction in sexuality that exists physiologically and anatomically in the infant human is by no means enough to guarantee a sexually normal adult human after the passage of an appropriate number of years.

Quite the contrary. The human infant has to undergo much psycho-physiological development before being able to function with an appropriate adult sexuality. The psychological dimension of this somehow has to be provided by the atmosphere created by the adult population. This is never a simple phenomenon. Throughout history, there never has been a "right" way of getting this done: and ideal sexual development is just that. an idealization. Man has always had his sexuality with him of course, and he has always had the task of forming ideas and standards of sexual function. There is a psychologically necessary interaction here between expectations and moral rules that man forms in an effort to get his sexuality within some sort of reasonable, human context, and, on the other side, a counter-urge that is always observable, the tendency to reject sexual controls and establish greater freedom.

This is not just a phenomenon observable at the end of the twentieth century A.D.

In each human life, time passes, and the individual undergoes some pattern of physiological and social development. The minimum requirement as far as the species is concerned is that mature individuals in the species copulate at periods when they are mutually fertile to each other. The forces involved are such that there has never been any real danger that the minimum requirement would not be met. As we move towards the end of our millennium, it is rather evident that the problem is in the direction of overpopulation, rather than the opposite.

But, in man, the situation is still more complex, inasmuch as sexuality for man has to fit somehow into the overall pattern of his life and cannot be merely a mechanical function independent of his psychology and his society. It is within the human context that sexuality, its expression, and its productivity have to occur, and that is what constitutes man's ongoing sexual problem.

As time passed and as the potentialities of function increased in the biological stream that eventually was to produce humankind, an important phenomenon was increased freedom from physiological determination. In other animal forms, sexual expression and reproduction generally are more completely and mechanically controlled by hormonal systems and engrained central nervous system patterning. In man, not so: the actual pattern of his sexual behavior and expression is largely psychological in nature, although the raw material of sexuality is provided through organic development, under genetic impulse and control.

Relative to the observable phenomenon of overt human sexual behavior, the two forming polarities are, on the one hand, a need for stability and constancy in child-rearing and in human relationships between adults and, on the other, the counterbalancing urge, ever present, for freedom of sexual expression and escape from societal prohibition. The resultant of this conflict is the pattern of actual sexual behavior in any society or generation.

The effort here is to bring sexuality into focus in a general way against the larger backdrop of the totality of human development. Sexuality takes its place in human living as an organ system, yet, it is a unique system with many differences from the other biological systems that exist in the human species.

What emerges overall is a picture of man as a system of systems, in which all systems eventually become subservient to the personality of the individual. Man has a life history, a certain sequential pattern which is enacted differently in each generation and in each different environment in which he finds himself, but which yet exhibits some level of constancy in expression.

The individual exists as an organism dependent on his genetic heritage, the origins of which, as we have seen, are lost in the past, although it is possible to describe in general what must have occurred. In the here and now, man exhibits a definite organization and interdependence of parts. Also there is an organicity and a patterning to human living across time: the biological history of the individual, beginning with conception, developing through gestation, babyhood, and on into adult maturity; ultimately, senescence will follow, and then death.

However, the fulfillment of this biological pattern clearly is not a foregone conclusion. A concomitant dimension of any complicated system is that it stands as a challenge to the universe, which tends generally to reduce things to their simplest possible energy state. Given the complexity of the human organism and the complexity of his life pattern, he is also subject to great vulnerability. There are too many things that can interrupt the integrity of this process and call the individual to a shrieking halt at any moment in time. Whether it be a disease process, such as raging infection or cancer, or injury inflicted from the outside, the ultimate dissolution of the organism is a necessity, and its immediate dissolution at any given moment always a possibility.

But this is the biology of the phenomenon that is man, the sort of unity and sort of individual that he is, from the point of view of his animality. This is his individuality, as far as his body is

concerned as far as his relationship back into the material world is concerned: he is this pattern of organized matter, coming into being through these processes, as we have discussed. These things are common to man wherever he exists. The full individuality of the human is, of course, not defined by these factors but rather by his place in the unfolding of the general matrix of reality on earth, this hurtling speck of dust on a journey across the face of the universe, and it is in this measure of his individuality, his place in the matrix, that we are now interested.

Chapter V

INDIVIDUAL IN THE MATRIX

Man in matrix. There has been an ongoing pattern of change in culture: things in human history have never stood still. This is the matrix of human evolution. Into this matrix, each individual is born. Things are never quite the same when an individual dies as they were when first he came into the world. The individual has changed his viewpoint, of course, because of his maturing and growing old- or whatever measure of life fate ordains for him. But, as well, the world that he is observing has also undergone change, so that we are dealing with a complex flux. It is this complexity that we wish to attend to now.

As we look back through our history, we see, emerging from the mists of the past, man living in small groups, handing on his traditions from generation to generation by word of mouth, learning and preserving coping skills in order to survive in the environment, and, having come from oblivion, passing again into the empty void. We can only faintly discern the individual; we perceive our ancestors more as ill-defined members of a surviving group.

Change the time determinant, and man is living in fairly well stabilized cities, carrying on a complicated commerce. Utilizing the small symbols he had devised first of all probably to aid in the pursuit of that commerce, he begins to record feeling and thought. He turns, as we have seen, to the weaving of epic tale, the outpouring of the poetic spirit of man in a recounting of heroic events: the individual human as hero and as adventurer. This occurred, in our culture, as we have seen, towards the beginning of the third millennium ago.

Soon the philosophical explosion: the effort of man's mind to cope on an intellectual plane with what kind of being he must be; the effort, as we have seen, for intellect to understand and to express intellectuality and its implications. For hundreds of years. and through many different cultural patternings and developments, the essence of man's theoretical thinking focuses around this problem of his spirit. To be sure, technical knowledge, in terms of running communities, making laws, carrying on trade, and, to a point, manufacturing, itself develops and in various places achieves high degrees of sophistication .and complexity. These are not theoretical dimensions of the human experience: they are not attempts to answer the procedural questions of what things are, but practical solutions to the practical problems inherent in meeting the needs of an increasingly complicated society and in furthering, to the extent possible, the wealth and productivity of individuals and groups.

Throughout this early experience, as far as "scientific" knowledge is concerned, man in his individuality can be judged or studied only relative to abstract norms of being and behavior; there is no way to appreciate his specific personality development or the specificities of his individual experience.

The individual is dealt with, relative to his experience, not in the formal "science" of the day, but as we have seen, in literature, which continues as an ongoing and lasting tradition throughout culture. Here, in an intuitive way, the creative mind portrays human living in its particularity and, in so doing, captures frequently with great profundity and insight the psychological realities of being human. However, these efforts, great though they are, cannot be developed into any generalized understanding of the nature of the human psychological process as such, as it is shared from person to person and throughout the fabric of society.

We have already alluded to the fact that childhood, as a perceived and understood reality, simply did not exist for the educated mind. Occasionally, there were, as in Plato's *Republic,* discussions about education and the effect that it might have on the human spirit; but even that, the work of this fantastic mind, shows

little real insight into the developmental process by which the human animal passes from the amorphous consciousness of infancy into childhood and adolescent mentality.

Full reflective understanding comes only with relative maturity in the human. When adults came to reflect on their own humanity, what they first were in contact with was, quite naturally, their own adult minds. The individual, as individual, made sense only as a developed adult: the educated mind of man had no way either to get at the development of personality through childhood, or to comprehend how it might be that the maturational process might fail. Man could be understood when acting at his most human; however, the vistas of his real and potential irrationality were little understood.

By no means do we today have all the answers to all the questions about being human; one burden of this book is the very real dimension of mystery and uncertainty that still remains about human existence, as we will see. However, our focus here is also on what we have come to know, on the considerable horizons of insight into the full scope of human process that the developments of the last century or so have given us.

Coming to be as a human being is a psychobiological process that, whatever the ultimate nature of man, is as definite an empirical phenomenon as is anything else and as such can be so observed and studied.

The treatment here is not any formal theory about personality development. but rather an attempt to summarize the way that the total personality interrelates with the environment, the functioning of the individual as a psychobiological unit in the general context of human culture and history.

Evolution produced on earth an organism capable of the total sweep of human phenomena, including all species of human behavior that history has produced. The initial steps in the evolution of intelligent life are as far as empirical evidence is concerned lost in the murky fog of antiquity and have to be interpolated; however, within the span of our historical observation we are dealing with

units in the psychobiological stream which apparently have remained fairly constant, as far as general genetic and biological makeup is concerned; undoubtedly, there has been some genetic drift since ancient times, but there is no clear evidence that there is any great biological difference on a genetic level between us, for instance, and the soldiers who set sail with Agamemnon to storm the walls of windy Troy.

The overt characteristics of a society are contributed to most clearly by the thought and behavior of the adults alive fit any one time in the species; the process, however, is a constantly changing pattern, with individuals being born, progressing through childhood and adolescence. making their contribution as adults, and attaining finally the ripeness of old age-as fate decrees for the individual. It is through flow and counterflow between culture and the individuals which make it up that change and evolution occur.

To use an analogy, it is as though human life is a train going someplace that becomes determinant only as each section of track is laid down as a result of the complex decisions of engineer and passengers. As it continues in its progress, passengers are constantly boarding it through the process of generation, birth. and maturation and, likewise, leaving it as well, through death. What the ultimate destiny of the train is is a matter of speculation; much that is true about the process, however, is not speculation at all, but observation and empirical Fact.

Our problem: the investigation and description of the phenomenon of the individual organism, entering this environment on earth-the story. in other words, of the individual human, not merely as agent and adventurer on the stage of adult life, but rather as biosystem, as intelligence emerging from and in many ways reflecting back into the general background of the insensate material universe.

The development of modern science has contributed much to our understanding of human nature. Historically, this required the segregation of observational data from philosophico-theological considerations, the most significant contribution of our own times

to the emergent phenomenon of man. Knowledge about the development of his personality has been paralleled by increasing knowledge of other important dimensions of his biological life: his heart and his kidney, as well, and so forth; and the way in which as the organism develops and lives it may have its overall history modified or even terminated through infection, physical insult, or neoplasm. Although in these essays we are primarily interested in the psychology of man and the way in which this comes from and relates to the material world,' it is worthwhile to emphasize that the evolution of knowledge concerning the development of man's psychology has occurred hand in hand with an explosion of knowledge concerning the rest of the human organism.

In order for man to progress into modern time, he had to emerge from the mentality and cultural reality of the Middle Ages. This emergence was not without its pains and complexities. And, from a cultural point of view, it is by no means as though the outcome of the process has now become totally clear. We, too, are not at the goal of the human process, whatever that might be, but are ourselves participating in the evolution of things. and there is no either external or internal reason for us to suppose that the general position of modern opinion relative to reality is in fact more consistent than that which man exhibited, for instance, during the thirteenth century, although it has developed, become more complex, and provided sweeping dimensions of new insight into the human situation.

For the process of cultural evolution to continue, the medieval conception had to be challenged and grown beyond. The outstanding analyses that man made of himself during the Middle Ages were primarily in the areas of his spirituality, and this not in terms of empirical testing and observation, but according to the processes and norms of philosophy and theology, particularly as supported and protected by the church. In the medieval interpretation of intellect, the dependence of man's rational functioning on the body was recognized and analyzed according to then-current methods of study. Intellectuality and rationality were, for the medieval

schoolman, definitely and specifically based on knowledge of individual experience in sensory perception; human intellect was seen to be not a completely free power, but something profoundly influenced by feeling and emotion and depending on the functioning of the body.

However, these indisputable truths about human nature were viewed in their importance relative to an ultimate spiritual destiny for man and were not developed into a clinically useful body of observational science. Man's reliance and dependence on material specificity was recognized and incorporated into the general plan of theoretical knowledge about man, without its ever being developed into a workable tool, as far as understanding and working with individual human behavior and its possible aberrations were concerned.

There was a preponderant tendency to see aberrant human behavior in terms of the right-wrong dimension. In spite of the evolution of shrewd analyses of human personality, in terms of the relationships between different levels of functioning, the medieval tended to see variations from an abstract norm not as empirical phenomena somehow comprehensible in themselves and in their history, but as the results either of sin, at times of evil spirits, or of obscure natural causes, which could only be suspected without there being any means of getting at them or analyzing them.

Concurrent to this dimension of the official knowledge of the day, the individual who exhibited unusual behavior in his life was for the most part not particularly well cared for. We can be quite sure that psychosis and psychological disturbance was as much a phenomenon in medieval life as it is in our own times; yet. it was not one to which the society had much of an intelligent response. Concerned as man was about his immortal destiny and the relationship of current behavior to that destiny, there was not much that he could say when, for instance, rationality broke down and the individual became subject to delusions and hallucinations.

There were some institutions which were founded and operated along humanitarian lines, but these came into existence not in any

theoretical framework, but rather as a direct charitable response to immediately perceived human need; luckily, man has a saving tendency not to be totally restrained by the limitations of his theoretical positions.

Without doubt, the most bizarre and extreme discussion of aberrant behavior during the Middles Ages surrounded the phenomenon of witchcraft.

The horror of the witchcraft thing in medieval and Renaissance times was not its cruelty, exactly, since cruelty is constant throughout human history and culture. The horror of the witchcraft phenomenon is the way in which cruelty, capricious exercise of power, and raw inhumanity became the tools and handmaidens of the highest intellectual, religious, and philosophical thinking of the age.

The height and strength of this particular brand of madness is to be found nowhere more clearly than in the *Malleus Maleficarum,* authored by Heinrich Kramer and James Sprenger, two respected members of the Dominican order. This instrument (1st edition 1486) deserves to hold in the history of human composition some special distinction as one of the most absurd, yet terrifying documents that has been penned by the hand of man. It is, to be sure, an extension of ideas contained in the concept of the kingdom of God and those who are either for or against that kingdom.

The issue is not even whether there existed as a social phenomenon people who looked upon themselves. and who were looked upon by society, as practicing witches; historical evidence would indicate that indeed there were. It is difficult to attempt to assess the extent and social significance of practitioners of the black arts during those centuries. Anything secretive and of its nature hidden away from the direct observation of society tends to be poorly documented and difficult to evaluate objectively. If we had rosters and accurate minutes kept of coven meetings, the subject matters discussed and the rituals entered into, our job of evaluation would be a good deal easier. (Roberts' Rules of Parliamentary Procedure do produce some advantage.)

However, what occurs in the *Malleus* is the development of a machinery for oppression and terror that does not require any input into it from the outside to keep it going. Most of the unusual or abnormal behavior it describes as having to be stamped out through prayer, fasting, torture, and execution is quite clearly hysterical or psychopathological in nature, as opposed to supernatural or demonic in origin. Other parts are simply made up out of whole cloth, straightforwardly and without blush.

The assumptions then that are made concerning witchcraft, its nature, and significance are spun out with all the intricacy and horrid detail of Gothic imagination.

The upshot of the thing is that in the name of Him who taught meekness and honesty, love of fellowman and forbearance with each other under the fatherhood of God, hundreds, and even thousands, of poor, daft, and harmless individuals were submit- ted to a peremptory, barbaric sort of justice: the dungeon, the torture chamber, and-w hat must ultimately have at times been a grateful release-execution.

At best, in its art, its social structures, and its intellectualism, the Middle Ages as a period in human history which was brilliant, well-integrated, of soaring expression and idealism, a system which attempted on a high plane to come to grips with the intrinsic problems of man's spirituality and intellectuality; at worst, however, the period was cruel, narrow and inhumane in its thinking and characterized by utter barbarism.

In its finer elements, it is almost a pity, from an esthetic point of view, that the medieval synthesis was not adequate for man and could not have been maintained as a structure within which he could dwell: but, at the end, the internal corruption of the system became so great and the pressures for expansion beyond it so strong that the general societal structure was doomed; men had to move on.

One can point to many factors that pressed against practical confines: politics, economics, social structure. and so forth. But there is a ground swell in the alteration of societal patterns which is stronger than any of these, or stronger in fact than the sum of the

forces that are capable of being historically determined. Man changes his world and his customs; he does so in part in terms of factors that he can rationally identify. But usually the elements which he identifies with his reason are not the logical conclusions of his previous conceptualizations, but new perceptions he has had of the way the general drift of things is going on an irrational or subconscious level.

Things demanded change at the end of the Middle Ages; the human spirit knew not where it must go, but it knew ineluctably that it had to leave behind the mold of consciousness that built the medieval cathedrals.

This conflict and the torture it caused human spirit are nowhere more clearly exemplified than in the life and thinking of Paracelsus, a sixteenth-century physician and scientist. His writing is most uneven, as he strives on the one hand to deal with the thought which he received from the past and the allegiances that he felt obligated to in his culture; but, on the other hand, he was also imbued with the spirit of empiricism and insisted on following its behest. He writes in places of the need to view disturbed human behavior as having natural causes and a natural explanation; he can, however, elsewhere give credence to
the most outlandish ideas concerning the supernatural origin of bizarre phenomena and the entire scope of possession and witchcraft.

There is a struggle going on here; however, once the approach of empiricism had again been introduced into man's analysis of himself, in spite of some slowdowns and minor setbacks, the course for progress had been set, and the phenomenon of superstitious supernaturalism was doomed.

The development of an empirically-based approach to the study of human behavior was not rapid. Medical practitioners during the seventeenth and eighteenth centuries became increasingly aware that the maladies of their patients were often psychological in origin rather than purely organic, but these observations were not developed into comprehensive systems of study and analysis.

By the beginning of the nineteenth century, as in the work of Philippe Pinet, a very serious and very extensive attempt was being made to classify psychological disorders. By that time, supernaturalism was mostly out of the picture, although in certain schools of thinking moralism still continued to confuse issues. The tendency to categorize and to describe psychological disturbance generally continued at high pace.

This effort was concurrent with remarkable advances made in the basic medical sciences: the nineteenth century was not only a period of lastingly valid descriptions of behavioral disturbance, but also marked the first extensive advances in the study and understanding of the brain and nervous system. Particularly during the latter part of the century, the great heyday of pathology was entered into, with the perfection of staining techniques and the advanced use of the compound microscope. This is indeed a very short time ago, as far as our overall history is concerned. However, then, for the first time, thousands of human brains were sliced postmortem, and subjected to the closest of scrutiny on both the gross and microscopic level.

Neurology too as a distinct division of medicine came into being. Neurology involves the diagnosis of and classification of diseases of the nervous system into structural and etiological categories. It was during the latter part of the last century that the great classical syndromes in neurology were described and brought within the ken of rational understanding.

As might be expected, all this activity occasioned a restatement of the mind-brain problem. Attempts were made to relate behavioral pathology to brain pathology-this to the extent that in some schools, the assumption was made that there was no psychopathology without brain pathology. As far as drawing valid correlations was concerned, for the most part, this attempt was premature, although isolated brain disorders were definitely linked to psychological disturbances. (We have by no means arrived at the end of the trail of investigation as far as the behavior-brain problem is concerned. The work of our own century has shed light on the operation of the

brain, as physiological techniques and neurochemistry have made startling advances. Most of us operate in the context of an assumption that there is specificity of brain state correlative to each specific behavioral pattern. It is the expectation of most neurobehavioralists that the greatest advances to be made in further understanding human behavior are probably to be found within the laboratory of the biochemist rather than the office of the psychotherapist.)

By the end of the nineteenth century two very important achievements had been made as far as opening up a comprehensive understanding of human development and behavior was concerned.

First, there had been developed a generally satisfactory method of classifying mental illness. There currently exists through- out the world a generally accepted classification of psychological disorders; additions and revisions of this have been made, but the general pattern has been in existence now for several decades. Second, human psychology was opened up from the inside, so to speak, in a new way: in his work on neurosis, Freud gave a new direction to the study of human consciousness, a direction carried on by other psychoanalysts to a very rich interpretation of human experience.

Both of these thrusts, the descriptive and the analytic, have been the subject of intense work during our own century. Although it is not necessary that the final word in any of these areas will have been said at any given time, much of lasting value has been established concerning the ability to objectify the observation and evaluation of human behavior, and infinitely more is understood about the growth and development of individual personality, both "normal" and pathological.

Our picture of man is now by no means complete; nonetheless there is emergent a pattern of development that is detailed and in general well integrated. Where the picture is deficient, at least the horizons have been opened up, and it is possible to get some glimpse of those areas which must be the object for continuing research. What is developing before our eyes is a remarkably

complete science of the development of the individual in his niche in space-time. Chief dimensions of this picture are the scope of possible human behaviors, as capable of being observationally objectified; the experiential dimension which the individual undergoes in his subjectivity as a human; and the physiological development of underlying animal organism, and particularly of brain and central nervous system.

That is man in the matrix.

At a given point in time, a human infant enters the life stream. Typically, at the end of a pregnancy, a woman goes into labor, birth occurs, and-a newborn infant enters the world and begins the adventure which is human life. All the potentialities of being human lie somewhere within this small package: doctor, lawyer, merchant, thief.

Although human knowledge does not extend into foretelling the future, the amount of physiological knowledge that a well-trained modern pediatrician has concerning this complicated organism that lies there squalling is staggering, relative to what could possibly have been in anyone's mind, say, just a hundred years ago.

Our object here is not to give a highly technical description of the detail. but to state an overview concerning this small object, which depending on the nature of the biosystem of the family group into which it is born may in fact be either coldly received or, alternately, the object of immense wonder. As it lies newborn in the cradle. this young organism is not satisfactorily comprehensible merely in terms of its structure, physiology, and functioning; it is a product of a lengthy evolution through time, the gradual organization of the genetic process and the coming into being of all complicated life forms. The infant is a part of the material cosmos, yet it is organized far beyond the ordinary dimensions of that cosmos. Should the potentialities of the individual be relatively fully realized, he is capable of gluing into experience and reality on surprising levels; yet, at the same time, how fallible this process is and how open it is to weakness, injury, and disease. The picture is one of strength and weakness combined. The physical structure of

the human newborn, relative to its potential for ultimate development, is remarkably flexible. subtle. and open to widely divergent possibilities; it is also, within limits. remarkably hardy.

Relative to its future modes of operation, there is already a good deal that is "programmed" into the infant human body, although we cannot be certain of its exact limits and contents.

Immanuel Kant built an entire system of philosophy, for important procedural reasons, on the mind as pre-structured to think concerning the universe in specific ways, there being no necessary relationship between the needs of the mind and the external world of things in themselves. Ultimately, Kant's system has been generally discarded as being an inconsistent and in many ways unnecessary sort of structure. Yet this problem of how much in terms of content or structuring might be in the mind in some latent sense, prior to the emergence of patterns of developing consciousness, continues to puzzle us.

In medical psychology, the problem of inborn or performed dimensions of psychological experience is treated in the work of Jung, who saw man as controlled not only by the individual unconscious. the sum of experiences which the individual had buried into the tomb of memory, but also by the universal or racial unconscious. the residue transmitted somehow genetically of racial experience throughout the ages.

It is tempting to see man as carrying in some formed fashion within his psyche the content-remains of his evolution out of the material backdrop.

There are some definite primitive patterns of behavior which involve perceptional mechanisms. even in the newly born infant. The newborn infant is able to perceive through all the sensory modalities present in adults, although the context of this perception is much more amorphous. The newborn is able to respond to pain and sound. It is able to respond to some level of unformed perception relative to general well-being and to the internal needs of the body, as represented by hunger and the requirement for food.

It is impossible either to get directly inside the mind of the neonate lying before us, or to recall our own experience at that age. So. we can only know the quality of this primitive experience by analogy-and also, by negation, in which we deny to the experience the specific organization that is characteristic of our own perceptional experiences as adults; for, it is clear that the experience of infants is not similar to this.

Satisfactory generalization about the development of the individual in the ongoing matrix is not easy. The external environment is well nigh infinite in its complexity, and it is to this environment that the individual human coming into the world is exposed. Likewise, there is a near infinite variability of possible response in the individual, dependent on the specifics of his unique personality development. Not only is the phenomenon of man complex; worse, from the point of view of adequate characterization, human behavior in its higher psychological reaches apparently is indeterminate, and so incapable of exhaustive causal investigation. Man, operating at optimum, pro- duces free behavior by consciously selecting from various avail- able options: on this level determination is a psychological product of the act of choice itself.

However, in spite of the difficulty, some attempt at generalization is a necessity, inasmuch as it involves the entire object here of our search: man in the matrix.

There is an interplay between the individual and the environment, an interplay which begins, as far as external, separate life is concerned, when air first enters the lungs of the human infant; it ends when the organization of his being physiologically, chemically, and anatomically, is no longer sufficient to sustain the life function, and the individual succumbs to the sentence of death under which all higher life forms live. This interplay occurs generally within certain limits; however, the potentialities of future activity and response are frequently so extensive as to preclude the possibility of valid prediction.

Conflict exists in the interaction between each individual human with his endowments and the complete environment; the physical environment where the individual lives, as well as the psychologico-cultural locus. Life is never a generalized thing, but always the creation of an individual story, the saga, be it brutish or noble, of this human at this time.

It is characteristic of all life forms to exert some sort of change on their environment. With many animals, the pattern of the change that they effect may itself be a repeating one, a drama that is re-enacted from generation to generation, fairly stable biological ecosystems having in many instances lasted over long periods of time.

In contrast, the human animal not only interacts with his environment in terms of his needs, but is increasingly contributory to change in it-not always in a positive way, as we are increasingly aware. Man partially plans the changes that he brings about, but often what emerges as an aggregate result of his actions has not been consciously intended, but appears as by-product to his overt purposes.

The history of man is a very particular history, and we are in tensely in the midst of one of its most explosive periods. There is an abstract dimension to the question "What is man?" One important answer, however, to the question of humanity is to be found in his actual history in place and in time as the human drama unfolds: the answer is from one point of view the immense, yet finite, total of all human experience in each of its manifestations. To capture that complex reality is of course impossible. It is far too detailed and there are far too many gaps.

An individual's life is a history, a part of the total experience of this animal species on this earth. But first, the individual has to cope with the material universe around him in order to survive. The basics for survival are much the same from place to place: food, shelter, maintenance of the environment within tolerable limits. and not having oneself too badly mauled physically. The psychosocial needs of the individual are both more variable and more

complicated. There is no such thing as a "simple" human society; psychological organization in human life and the mode of interaction between human intelligence and the environment in which it finds itself are always more complex than the life pattern of any other animal.

"Primitive" societies can go on for extensive periods of time without significant change. Although uncomplicated relative to societies as differentiated as our own, primitive cultures are still highly intricate, providing some pattern of answer for all levels of human existence: constructs which deal with food gathering, coping with the elements and the physical surroundings, handling social and sexual relationships, and some pattern of eschatological explanation, ideas about the origin of things and their ultimate destiny.

In cosmic or even biological time, our own culture is not far removed from the patterns found in the few primitive societies that remain in the world today. What is specifically characteristic of our society is the intense rate of change which it has manifested. It is only in the past few centuries that man has reached the ends of the earth; since now man can get to any spot in a matter of hours, even the ends of the earth are not far away. This accelerating rate of change has altered the characteristics of human adaptation, without changing the patterns of the basic biological and psychological needs and the requirements of the individual-or of society either, as far as that is concerned. Where the individual grows up into this ongoing churning matrix and the way in which he relates to it and expresses himself in it, with greater or less passivity or effectiveness, become in fact the life history of the individual.

Current psychological analysis generally has emphasized the emotional dimension in human living in normal and pathological patterns of adaptation. With less than fully conscious realization, man has perceived the importance of coming more effectively to grips with the specifics of his animality. A practical cause for the focus on emotions has been that modern psychology sprang initially from the attempt to cope with pathological states, which have their

origin much more in man's animality than in errors of reason. The emphasis on the non-rational element in man is of supreme importance, yet at times intellect seems to be left out of the picture as an adaptive mechanism.

Although the solution of the Oedipal situation may be meaningful in the development of the individual in society, the identification of such inter-psychic structuring is not enough to explain the evolution of either individual or social man from the background of matter and his higher levels of interaction with the environment.

Man has a need to get along in society and also to be structured by it. At the same time, he also needs *to* establish a greater or lesser degree of freedom from the determinations which he finds in society, and to establish his own idiosyncratic patterns of adaptation. The extent to which an individual becomes capable of evolving a lifestyle that is not completely determined by the social environment in which he grows up is some sort of measure of his maturity. So, although the foundations of human personality are animal in origin and require modulation through interpersonal experience, the superstructure of man's functioning has still the potentiality of achieving individualized creativity. Man's tendency to enlarge on the social tradition, to come into conflict with it, and to reinterpret reality and experience in terms of his own higher aspirations constitutes the keen edge of progress.

In point of historical fact, the story of our race would have been much more stable, much less exciting, and probably much less destructive, too, had not man as individual had an intrinsic need to comprehend experience and *to* push his ability to cope with reality beyond the general levels countenanced by the acceptance of the social group. The interplay between feeling requirement and reality orientation constitutes much of the tension in the human experience. In the extreme, when man finds it impossible to tolerate the requirements of reality, he undergoes psychological breakdown and may seriously distort his experience. On less pathological levels, man's tendency towards prejudice and bias is constituted by the

difficulty that the human mind has in accepting and assimilating objective truths which are beyond that for which he is emotionally prepared.

Part of the deficiency of modern psychology lies precisely in a procedural difficulty that it has in understanding its own processes in terms of the ongoing spiritual and philosophical traditions of mankind. A paradox of the modern psychological movement is that it is largely the product of human drive for adequacy in truth: at the same time, the one dimension of human functioning which it specifically is least capable of dealing with is man's general drive for adequacy in truth or his higher levels of intellectual operation.

In human operation no distinct boundary exists between emotion and knowledge. There are, however, meaningful polarities in his experience, and this is why since the dawn of theoretical thinking man has tended conceptually to divide his experience into cognition and appetite. Human personality, utilizing the potentialities of the organism of which it is an epiphenomenon, through the complex process of interacting with a material and social environment, develops cognitional and feeling dimensions which go together to structure the matrix of consciousness.

The life history of the individual is sequential in time, and in each individual is characterized by flexibility within limits which are uniquely characteristic. Man develops response patterns by which he operates and functions; at the same time, for survival, and even more so for progress, he must maintain flexibility to embrace new experience and to create new psychological con- structs which, although dependent on the past, are not totally determined by it. This is one of the most important characteristics of man, yet one of the most difficult ones to deal with, and one that has been generally given shortest shrift by modern psychology-the existential moment at which man in his experience stands at interface between the past and the future.

There is almost certainly a physical basis for man's limited flexibility. Our developing knowledge of the human brain strongly suggests that the possible response patterns of the individual at any

given point in his life are determined not only by experiential factors. but also by the way in which these factors have become "programmed" into the central nervous system. The limitations of man relative to possible alternative responses have a definite, though at this time not fully definable, physical and material reality.

Notwithstanding such limitations, it is a characteristic ability of man, as distinct from any other animal, to react with his environment by "seeing" new relationships with his mind· and by being able to move ahead in his actions and decisions on the basis of these relationships.

At times, the principles of human intellectual adaptation are fully conscious and available to the individual directly inside his own experience, for reflection within himself, or for communication to other human beings through the symbolization of language and other artificial symbolic systems. However, only a relatively small proportion of human intellectual behavior functions in this fully conscious fashion. Intelligent behavior is largely intuitive, in the sense that man acts with levels of practical comprehension which are not readily available to reflective expression. *Intuitive* here is used in a behavioral, not a philosophical sense. Typically man moves ahead on the basis of a loose coordination of subtly perceived suggestions from the environment, which have potential behavioral conclusions, but which never arise fully into consciousness, in the sense that the individual experiencing them in acting is able to give an accurate or a satisfactory verbal explanation of his own action. This is intelligence operating not in the level of abstract theory, but in the matrix of every day.

The extent to which the individual is encouraged and at the same time limited by his specific locus in the matrix of human consciousness cannot be precisely defined. One human being is born in an Alaskan igloo north of the Arctic Circle; another on a tropical Pacific island. both of these loci until fairly recently being outside the general stream of human culture and progress, yet

divergent in their nature and having the potentiality for quite divergent influence on individual and social living.

The world of culture and psychology is even more variable than the geographical phenomenon and varies not only from place to place and from time to time, but also within itself, within the structure of society and even the structure of the individual family unit into which a human infant comes.

The cultural phenomenon exists only as a result of the psychological phenomena of individual human beings, yet it achieves a larger solidarity and a quasi-independence all of its own, which somehow exceeds the qualities of individual human experience. It is possible to characterize in general the culture of a particular society and time; in this sense, culture is a set of comments, attitudes, ideas, and behavioral patterns, as well as the physical substrate which accompanies and supports these things, relative to individuals, and the way in which as a group they interrelate with the entire existential matrix: the internal world of psychology, the external world of material reality, and the ongoing and ever-changing phenomenon of culture itself.

In the context of this system the individual develops his personality, either succumbing to the stresses that life entails or learning to live in a passive, quasi-parasitic fashion relative to where he finds himself in the matrix or achieving a state of hyper-adaptation, and in fact creating some measure of significant change in the matrix, and, by so doing, becoming a more active factor in the ongoing phenomenon of developing consciousness on earth.

Within the individual there exists a hierarchy of needs; personality, even at its most flexible, demands structure. It is a dangerous situation when the advance edge of experience is too shakily related to concrete reality. The individual must achieve a level of internal consistency that is more basic than the consistency of his formal reasoning. The logic of the organism must be reality-based before the logic of intellect can be effective.

The picture that is emerging today is the way in which the development of the human organism is a unitary yet many- leveled process.

On the most basic integrative level, the brain must function in a grossly normal manner. If there is brain damage, mental retardation or deficiency is manifested. Limitations are imposed which no amount of motivation or application will erase.

The majority of clinical psychiatric practice, however is concerned not with instances of gross brain pathology, but rather with cases in which the damage or deficiency resides specifically on the level of higher integrational integrity; it is assumed that there is some level of brain dysfunction here, but our ability to identify this is still relatively bumbling and inefficient. In this sense psychiatry today is an imperfect science, and one which is forced to practice clinically on the basis of what knowledge is available to it at a given time in the overall matrix.

An extensive job has been done of defining descriptively the general dimensions and parameters of basic human operational integrity. Man adequately functioning on this level shows, first of all, a general accuracy of sensorium. He knows where he is, who he is, and at what place he is in time, usually with a high degree of accuracy. Memory function generally is intact, and an individual is able without too much hindrance to use and bring into exercise the range of whatever effective intelligence nature and experience have endowed him with. He is able to recognize, identify, and evaluate at least the important reality factors in his immediate environment. Emotionally, his affective state is generally under his control and is in the main broadly appropriate, in an overall human sense, for the situation in which he finds himself at a given time.

Beyond this, on an individual's highest planes of psychological functioning, he is able to manifest logicality in his thought processes and is able to make realistic judgments and deal in a practical and appropriately direct fashion with the ongoing stream of the life process.

These matters of human functioning are relatively obvious, once they are stated. Man has intuitively if not formally recognized these dimensions of behavior as being important in human functioning throughout his entire history. However, it has taken man a long time indeed to progress beyond abstract considerations of human nature and to get parameters such as these into the arena of precise observation.

It is precisely on the basis of these parameters of human behavior that clinical mental illness is evaluated; the development of human culture has in large part left it to our own age to get to a position where we could deal rationally and objectively with such pragmatic phenomenology-as contrasted for instance with the largely hysterical and completely irrational formulations of the *Malleus Maleficarum*. That document, unfortunately characteristic of its age, came into existence and had its painful effect a mere four hundred years ago.

Psychiatry frequently evaluates "reality factors" and "reality testing." *Reality* as here used has very little, if anything, to do with theoretical statements of the universe or "objective" or "ultimate" truths. This *reality* is quite pragmatic and refers to the things and events that make up a person's life and surround him- his material environment, interpersonal relationships. and one's own needs, ideas, and feelings. The question "what constitutes the nature of reality itself?" is not a psychiatric one. Observationally, the psychiatrist learns to recognize and cope with reality distortion: the importance of this as far as progress is concerned is the objectivity that it represents in the study of human nature. But the definition of reality itself is not an empirical problem.

ln the interests of achieving an overview, this chapter has ranged over several topics, all of them centering on a picture of a man in the matrix. The focus of this picture has been on the formation and development of the individual organism bio- logically and psychologically at a particular place in an evolutionary stream. The analysis relies heavily on modern insights from medicine and allied sciences.

It has been emphasized, however, that this overview is itself a developmental phenomenon, relying on progress within our own culture for its production. Some historical highlights have been described which have contributed to man's changing view of himself.

The relationship between man's nervous system and his intelligent consciousness has been stressed, with attention given to our expanding structural and functional knowledge of the human brain, and the conviction generally prevalent today that there is a high degree of specificity between brain state and state of consciousness. The importance of continuing research in the area has been suggested.

In brief summary, the vista has probed into the relation of the individual to his culture, human development, neuroscience, and the evolutionary and intellectual process which has produced over vast rime not only the phenomenon of man himself, but also our ability to see him in so complex a fashion.

We are not at end point in this process; we have come to understand more about the appearance of the individual in the matrix, but there remains much that is obscure.

Given the continuance of our culture, the assault on the relationship between brain and consciousness will continue. Our knowledge of the impact of environment on the individual in his development and function will also continue to increase.

But there are more profound obscurities in the total process which may prove to be of more significance for man than these specialized areas of discovery.

Empirical investigation, which has produced so much that is important in man's evolving understanding of himself, may improve in measuring intellectual function, but gives no promise of disclosing the internal nature of intelligence as a phenomenon in the universe. Itself the product of intellect, neuropsychological science appears now at least to be unable to improve markedly our understanding of man operating at the boundary between his previous achievements and the future into which we plunge so

rapidly. Yet this may prove racially to be the most significant dimension of human self-understanding.

History is not a dead issue: there is still much to be learned from it, not so much in terms of fact as in terms of increasing our qualitative understanding of intelligence grappling with experience from generation to generation: at times led by evidence, at time reacting through emotional bias, building systems only to reject them, and then becoming ensnared in the limitations of its own productions once again-yet through the ongoing process apparently achieving a more complete and valid view of the total universe.

More and more we thrust ourselves into the stream of our own evolution: as the force of this process increases, it becomes increasingly important to understand not only the mechanics of the process, but also the force that is bringing it about—the consciousness of man itself.

Chapter VI

A CONFUSION OF THOUGHT

This book is an investigation into the thought function of man, and particularly of Western man. The content of this chapter is an instance of the Emperor's new clothes. It is very frankly an attempt to blow the whistle on some smugness in thinking and to draw attention to some very basic confusions, historical and present. This is done out of no desire as such to criticize, but rather as a necessary requirement for describing some things that I think it is very important to establish concerning the current status of man's spiritual and intellectual contact with his environment.

In our time, we have certainly not eradicated human misery and suffering from the face of our planet. We have not found a way to humanize humanity in any exhaustive sense. Here in America, within our own country, we have age-old problems of inequity and social disadvantage; and to these problems we have and are adding our current problems of environmental pollution and ecological contamination.

We have by no means turned the face of the earth into paradise.

However, it is also equally clear that we are hurtling ahead through a period of change that is unequalled in the history of the entire race, as far as knowledge and potential mastery of the material environment are concerned. Corporately, we are busy ripping the mask away from the natural world. Although there remain mysteries in the universe, the general map we have is certainly elaborated with an astounding range and completeness.

With respect to ourselves, we find that we occupy an intermediate stage in the observable flux of the universe. Beyond

us on the one side is the macrocosm of planets, galaxies, and the entire physical universe. On the other side lies the increasingly diminutive microcosm of organ systems, cellular systems, biochemical systems, and atomic and subatomic systems which on the final level become coterminal and tangential to the background of the material universe· and the general oceans of energy.

The knowledge of this universe. its extent both in space and in time, and our own place within it, again, not only in space and on such a stage of complexity, but also within the vast womb of time—this extensive knowledge, as far as hard content is concerned, is largely the product of the investigations of the human mind over the last one or two hundred years, although the centuries preceding stood as necessary foundations to the current explosion of consciousness.

In short, to a hitherto unimagined extent, we have become increasingly aware of ourselves and our place in the material universe, both with respect to our appearance on the scene as evolved from matter operating within certain confining dimensions on planet earth and also in relation to the general unfolding of the material universe from an original matter-energy state, now several billions of years ago.

The entire road map of man on the material level relative to the universe which has produced him has not been thoroughly elaborated in detail; however. there is little doubt remaining but what most of the major features have been sketched in, and there are many vistas available into what lies around in various areas on a scale of lesser dimensions.

We are dealing with and perceiving an unprecedented knowledge which man has concerning himself and the environment with which and to which he relates. And, concomitant with this knowledge, man clearly has unprecedented power to do a range of things, many of which would have seemed impossible to the educated mind of just a few decades ago.

It is bootless to ask whether or not scientific knowledge is "true." The proof of the pudding is in the eating, and man's

movement into the vast world of interpretation and understanding of physical phenomena has been effective and successful beyond the operation of any accidental process. Modern empirical method is true because it works. When I turn on my radio set and get the station downtown or, for that matter, when I turn it on and by relay get the voices of men talking from the moon, something is afoot here other than that a bunch of stuff has been poured into a square box with knobs on the front end of it. The thing works.

As a practical matter, this explosion of knowledge today is a direct result of the natural flow of human history. Although over relatively larger gaps of time progress in human knowledge appears incredible, in fact its development is a singularly organic phenomenon. Over shorter spans, once the fund of knowledge has advanced to a place where further discovery is possible, there is a certain inevitableness and necessity about the further discovery. Although at different times throughout recorded history advances in knowledge have apparently moved at different paces. at least to date the overwhelming conclusion from human experience would be that on this planet of ours advance is occurring: there is a necessity, even if it has rested on things which are apparently accidental, for man to forge ahead into new dimensions of his knowledge and mastery of his universe. When doors have been opened, it has proved inevitable but what man should be found to enter in.

Quite evidently, this thrust for advance is not uniform, not is it always altruistic or "pure," in the sense of being a quest of truth for truth's sake.

Of equal, if not greater, importance in terms of motivation is the matter merely of human greed and thrust towards self-aggrandizement. For, although many pure discoveries have been made without recompense to their discoverers, scientific and technological advance have been intimately tied in with economic and social development, there being no clear demarcation between the two areas. It has been profitable to individuals and society as

well to exploit man's increasing knowledge of his material universe.

It has become a commonplace that on different levels in human psychology, there may occur a marked difference between what man most genuinely is doing and what he thinks he's doing. Man's systems of mixed and frequently clouded motivations have been the object of a great deal of study in our times. As in individual psychology, so in the general scene: man has forged ahead with a definite conscious content, while much of his actual motivation has been buried and is not easily retrievable. As science has progressed, man's thinking about the universe has increased in lucidity, although his thinking about the internal process of his discovery has frequently been confused.

As far as doing the process of science is concerned, it makes little difference what the basic assumptions or theories are in the minds of those who are engaging their efforts in this sort of venture, the theories, that is, which directly concern the process of scientific investigation itself. Much more important is the ability to understand the techniques of science and to put them into operation in a particular context. However, as far as the overall picture of human adaptation is concerned and the way in which man understands and interacts with his universe on a general scale, the theories concerning scientific investigation may in fact be quite important. For these things involve fundamental views of humanity and human nature and ultimately relate into social and humane problems and the entire problem area of the orientation of individuals and society towards human life on this planet.

The exact importance of the hypotheses and assumptions which underlie the approach of man *to* the problems of everyday cannot be exactly assessed or calculated; these elements do, however, characterize and qualify the pattern of human adaptation, in the life of an individual or the flow of an entire culture. Basic assumptions and hypotheses are basic contributors to human ethos.

There is a tendency that goes back at least to the time of Socrates and his arguments with the Sophists; to draw a distinction between

thought areas that are "hard" and "practical," and, on the other side, thinking that is "soft," "mushy," or "merely speculative." This distinction, which has been present in some fashion throughout human cultural history, finds a typical modern expression in William James's well-known essays on *Pragmatism*. James related patterns of thinking to basic temperament in philosophers. He distinguished between the "rationalist," who tends to deal in abstract and eternal principles, and the "empiricist," who tends rather to deal with facts, as he says, "in all their crude variety." He divided two types of mental makeup into 1) the tender-minded and 2) the tough-minded.

James quite clearly thought these two positions irreconcilable:

> You want a system that will combine both things, the scientific loyalty to facts and willingness to take account of them, the spirit of adaptation and accommodation, in short, but also the old confidence in human values and the resultant spontaneity, whether of the religious or of the romantic type. And this is then your dilemma: you find the two parts of your *quaesitum* hopelessly separated. You find empiricism within humanism and irreligion: or else you find a rationalistic philosophy that indeed may call itself religious, but that keeps out of all definite touch with concrete facts and joys and sorrows.[1]

This was the view of things from the top in 1906, when James delivered this lecture at Columbia University.

This difference between abstract, general considerations and hard, empirical fact has been noted throughout history; if we want to characterize our age, we have a strong inclination to accept empirical fact as the norm of knowledge, identifying that as what

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[1] William James, *Pragmatism,* reprinted, Meridian Books, World Publishing Company, Cleveland and New York, 1st printing, 1955, pp. 26-7.

we “really know,” and relegating more ethereal truths or ideas to the areas of “opinion” or “faith.” The first classification of things generally is felt to be demonstrable knowledge, while the second is accepted usually as comprising subjective ideas or articles of faith.

A generally more recent and still rather frequent approach to an evaluation of these soft-headed” ideas is a linguistic one, in which statements by which these ideas are expressed tend generally to be viewed as mistakes in grammar or linguistic usage. According to this sort of analysis. individuals are liable to be led into thinking that these non-empirical problems are “real” problems because the sentence structure or grammar in which they are couched has generally the same appearance as that which is in fact used to deal with genuinely “real” problems. According to this approach, such questions as “Where does the soul go when it leaves the body?” are mistakenly thought to be real problems because of a similarity in form or grammar between the words of the question and the words, for instance, “Where does the bus go when it leaves the station?”

A reliance on a pre-eminence of empirical or of logico-mathematical truth is a characteristic of our current age. And, as has been pointed out. there is no question about the efficacy of this approach, seeing the degree to which knowledge thereby gleaned has altered our understanding of the universe and our ability to work with and command the powers that surround us in the material world.

If in fact this approach to knowledge has produced such rich harvests, why quarrel with it or why attempt to fit it into any other sort of picture? There is in fact no quarrel with empirical or mathematico-logical knowledge; much of what is contained in these essays relies directly on these dimensions of knowledge. However. it is a problem to decide how this knowledge fits into human life and. for instance, whether its horizons are in fact coextensive with human knowledge and with consciousness itself. The belief of this author is that if knowledge and consciousness are in fact made to be coterminal with logic and empirical knowledge. a distortion has

been introduced into the matrix of reality and an important objective and historical mistake has been made.

At this point, we are not talking about a behavioral science (psychology), but rather an attempt to assess the meaning or nature of man's development, and the relating back into his ongoing cultural stream, the advances in thinking and in discovery that he has made as a result of his scientific and technological advances.

We have recognized here the force and efficacy, and therefore the truth, of the empirical approach towards investigation and discovery which has so strongly characterized our own time and the century or two immediately preceding it.

The current investigation, by which I signify the entire scientific movement. has attempted to limit knowledge to "hard" phenomena; though functionally successful, this has introduced important skewing into our thinking, and distortion.

It is a strong focus of presupposition in our thinking today that "truth" is in general contained in two dimensions of experience or. perhaps more precisely, two species of mental formulation: 1) statements which on the conceptual level somehow are contained in themselves, or are tautological, as in mathematics or logic, and 2) statements which are empirical in nature, i.e., can be referred back to specific observational experience. Reduced to some brevity, this is the same as saying: Truth is contained either in form A or form B, where A represents logico-mathematical truth and B represents empirical observation.

Our purpose here definitely is not to play word games, nor to get involved in the intricacies of conceptualistic argumentation. We are much more directly interested in attempting to grapple with the facts of man's existence in and his adaptation to his world. The kind of formulation as here stated has played a definite part in man's plunge into the empirical, scientific breakthrough, and as such has had its pragmatic value. There is a difference between the action-value of a position and its intellectual consistency. both with itself and with the overall existential matrix.

But, in brief, to attempt to look at the thing, the statement that truth is either of form A or of form B, as described above, which is practically a commonplace, intellectually, runs into the important systematic problem that as an entire statement. it itself is neither of form A nor of form B, and so does not fall within its own scope of definition of "truth." Therefore, by its own standards. it is not true.

This is not an insignificant cavil but in fact is quite important.

For brevity, let me characterize the modern thrust of intellect as "scientific." The thrust has been effective, in moving investigation and discovery ahead. It has succeeded in ducking ultimate issues and in dealing directly with the phenomenological world, unhindered by *a priori* constraint.

This utility does not make the approach correct.

To summarize briefly, the statement "Modern science alone yields solid truth" is immediately and without going further embroiled in internal contradiction, since the statement itself fails to meet its own criterion; this is not a statement of modern science, but rather a statement about the general matrix of knowledge, which is pre-scientific and non-empirical. A general matrix of knowledge and consciousness is implied, in which structuring statements can be made. Within the general matrix, a definition of "truth" is given which operates within a segment of the matrix, but is not applicable to the entire matrix itself. This is the basic weakness of the empiricist's position.

Incidentally, this consideration provides us with a glimpse into some of the internal requirements for any possible valid and satisfactory epistemology.

Epistemology is a theory about knowledge, but as such it also has the reflex quality of being itself a form of knowledge. An epistemology is a generalized theory about the process of human knowing, and as such should fulfill its own requirements.

A prerequisite for any valid epistemology is that it be self-critiquing. In brief. what it says about knowing should be internally applicable to itself: an explanation of human knowing should

describe and specify the human process and should also give some clue to and be consonant with its own development.

A theory of knowledge or thinking which presents thinking in such fashion as to make the generation of the theory an impossibility is by that very fact false.

Frequently, because of its value and because of its power, the empirical approach has a strong tendency to shade over into the general attitude that empirical knowledge is "all we really know." However, what this generates in effect, is a correlative inability to talk very much about the basic matrix of consciousness—the mind—or to deal with the general problem of reality or our knowledge of the real, in spite of the fact that important dimensions of this sort of knowing are implied when man makes any sub-statements about his experience, as, for instance, when he defines scientific knowledge as being the only "truth."

At the risk of losing some readers, who at this point might just as well put this book down, let me refer to the general areas that I am talking about as being "metaphysical," without attempting at this point strictly to define the term; historically, the term has been used frequently enough in this general area of thinking. And let me state that it is my conclusion here, the reasons for which we will soon see, that the anti-metaphysical trend in "modern" thinking has been a profound confusion, although quite probably as a cultural phenomenon a necessary one.

What we have witnessed, for some very real reasons, is a strong tendency to attempt somehow to reduce truth to its behavioral components or, in the matter of mathematical thinking, to internal logical consistency.

What cannot adequately be dealt with inside a behavioral, empirical, or logical context is the more fundamental fact that "truth" basically has to do with the satisfactoriness of a mind-state, in its knowing process, relative to objective reality, whatever such recognition might involve.

Let me footnote this rather abstract set of considerations with the handling of the concept of "reality" in psychiatry, a subject to

which we have previously referred. The concept of reality testing in psychiatry arises out of a phenomenologically based dealing with reality and experience. It is not a theoretical construct so much as a practical, working tool.

Mental illness, almost by definition, involves some distortion of the functional matrix that is man and, hence, some distortion in consciousness of reality. In the clinically less serious forms of mental disturbance, there exist at least some strange emphases on specific portions of the matrix; a skewing, at least, of reality according to the internal psychological needs of the individual. With the major psychological disturbances with which psychiatry deals, there occurs major distortion: either serious misidentification of reality factors or actual extinction of segments of the reality matrix or the creation in disturbed consciousness of elements which simply are not there from an objective point of view.

There is a range of events or realities which tend to get distorted in mental illness. These distortions can occur on practically any level of cognitional experience. Immediate sensory experience can be disturbed, as in the case of illusions or hallucinations. Social events and significance inside the context of interpersonal relationship can be skewed or positively distorted as, for instance, when an individual begins to think that people are talking about him or are organized to plot against him, when in fact they are not. Also, the most general realities can be disturbed, as when, for instance, an individual, in rather classic fashion, can start thinking that he is God Himself or Jesus Christ or Napoleon or some other important personage in human history.

Now, in the clinical context, as the evaluating, diagnosing mind of the psychiatrist attempts to cope with phenomena of these sorts, the distortions have to be perceived and identified. The psychiatrist identifies reality distortion and reality congruence, without, as a matter of fact, ever getting around to establishing a formal definition of what he means by reality.

Note, in this context, that reality testing and reality distortion as concepts are not purely limited to immediate sensory experience,

but also may involve much broader ideas. A person who is mentally ill may have some quite non-empirical thoughts about the universe in general. Psychiatry would tend systematically to reject these kinds of ideas as being unrealistic if, for instance, they appeared to be generally preposterous in terms of the ordinary cultural experience of the group in which the individual is found or, if they seem to be espoused mostly because of the internal, idiosyncratic need of the individual.

If, on the other hand, an individual expresses ideas which generally are fairly congruent with the culture in which he is found—as, for instance, in certain sorts of religious ideas, which in fact have no direct experiential evidence—psychiatry shrugs its shoulders and does not pass judgment on the reality testing involved. In fact, psychiatry frequently in a pragmatic sense will recognize the personal strength or structuring value which an individual may reap from a reasonable espousal of the religious ideation or teaching of an established group.

When psychiatry leaves this functional level and extrapolates itself beyond the clinical sphere, it no longer is operating in the arena of its specific expertise and simply becomes another philosophy. When psychiatry takes this step, it thrusts itself into the general matrix and has to compete on that level with other generalized approaches to human consciousness and experience. Properly speaking, psychiatry is a science-art dealing with concrete situations in actual human living, and not an ultimate theory about existence and consciousness themselves, although it may give important hints about the nature of things in these areas.

This freedom from obligation to a theoretical formulation has been quite necessary for behavioral science and empirical method, enabling them to plunge ahead and make the discoveries towards which they so powerfully point.

In advancing the horizons of empiricism, the scientist typically has not worried too much about the solidity of his general epistemological position; he has been far too busy discovering the

truth that is before him. In order to understand clearly how this came about, a little historical investigation would be in order.

Let us go back, first of all, to the thought of David Hume, who wrote roughly two centuries ago and serves as a good example of human consciousness poised between an earlier metaphysics and a developing empiricism.

David Hume was an educated eighteenth-century gentleman. He was a man of affairs and active in public service. He wrote well, producing in addition to his philosophical works an important *History of England*.

A champion of empiricism, he has been influential in the development of theory of knowledge. He has been credited generally with disposing of the idea of causality, thereby freeing us from the metaphysical speculations of the philosophers.

Hume's theories about human knowledge were prompted by a two-pronged realization: 1) that the traditional philosophy—or "ultimate science"—that he was taught was a sterile exercise that produced little usable knowledge and 2) that empirical method was beginning to bear fruit and gave promise of more. Faced with these convictions, Hume attempted a reasonable solution: to apply a simple empirical method to the problem of human understanding, so as to clear the field for all time concerning the problems of man's possible knowledge.

In actuality, Hume grossly underestimated the task to which he set himself and produced a very confused bit of thinking and theory, which, however, is typically modern.

Hume's philosophy is elaborated more on the basis of a perceived need to shift the emphasis in formal human thinking than on perceived evidentiary data. He was disgusted with some of the things he had been taught, and felt that the focus and style of thinking had to be shifted. His theories were evolved in the context of a perceived conflict between traditional metaphysics and the new investigative science. He was understandably impressed by Newton's work and felt that his style of thought and investigation should be emulated throughout the sciences. He specifically refers

to his work as an attempt to apply Newtonian technique in what he refers to as moral philosophy (in the linguistic manner of the day, moral was opposed to natural philosophy, the latter being investigative science and the former what we generally refer to today simply as philosophy).

Hume's essential doctrine held that in any strict sense, human knowledge is limited to sensory impressions in experience. He does give a significant place to mathematics, although he feels that in the process of complicated mathematical procedures, it is possible for the mind to fall into error. Other kinds of knowledge, in Hume's opinion, simply were not knowledge at all, but rather matters of feeling, opinion, or sentiment. We find thus in Hume an explicit development of the tendency in thought that came to structure the specific quality of modern scientific thinking that human knowledge, at least in any very scientific way, is restricted to the data of sensory experience and to a degree to the areas in thought, such as mathematics and logic, where the validity of the system is based to large extent on the congruence between mental concepts.

In the evolution of human thinking, this was a drift that had to occur: having come as far as he had, man had to move into the area suggested by his growing appreciation of scientific method. Hume was attempting to establish on an abstract plane the character of this drift and to give it a validity based on solid reasoning. As it turned out, Hume's style of thinking is culturally important because it did aid a necessary shift in human thinking, rather than because of its internal consistency. In fact, the effort turns out to be quite a confused one and one ultimately that is quite unacceptable as far as its objectivity or overall accuracy are concerned.

The cornerstone of Hume's thinking was in fact the need to shift away from the emphasis of the prevailing traditional philosophy, so as to leave the way clear for the development of empiricism. It is hard to substantiate from Hume's writings that he had, as a matter of fact, a very penetrating knowledge of scholastic philosophy. He recognized that the doctrine of causality was important, but he did not display a very deep understanding of what the schoolmen had

been talking about. But he did both perceive the general drift that the human mind was taking during his lifetime and make his own personal contribution to that drift.

Hume appropriately picked out as the Achilles heel in scholastic metaphysics the analysis of causality; he correctly saw that if that body of doctrine fell, the entire edifice of metaphysical thought would crumble. So what Hume attempted to do was to develop a theory according to which the human mind as it finds itself in the world does not in fact perceive any internal nexus or bond between events, but, rather, sees only that certain events regularly follow other events which precede them, so as to engender in our minds the feeling or opinion that the former is the "cause" of the latter. According to Hume's doctrine, the only thing that we know relative to the operation of things in the external world is what he referred to as "constant conjunction." As far as our knowledge of the world is concerned, in brief, what we know is that certain *B's* follow certain *A's,* but not that the *B's* are in fact in any internal causal sense the result of the *A's*.

Hume thought that if this were established, the metaphysical empire would no longer be valid, and on this point he was correct. This is a difficult doctrine to maintain, however, and Hume himself did not do too good a job of doing so.

There are two entirely different considerations: 1) procedural or operational validity, by which I mean whether or not a philosophical approach is valuable in terms of getting between here and there in human experience and 2) its correctness or objective validity, by which merely I mean whether or not a particular doctrine is true, not to put too fine a term on it. In the light of this distinction, Hume's doctrine falls not because it had no usefulness, which it did, but rather because it is internally inconsistent and ultimately unacceptable in terms of its being a statement of truth. Hume's core mistake is that although he makes the claim that we do not perceive the internal nexus between events, it is only a claim, advanced for polemical purposes, and one in which Hume himself does not really believe. For, after stating his explicit theory about

constant conjunction, he then turns right around and talks as though internal causal nexus really does exist, although, to be sure, on a not altogether obvious plane. But, the matter is this: Hume apparently turns his back on real knowledge of causality; in fact, the relinquishment is only verbal, and the causal interpretation of things is one from which in fact Hume does not depart.

What Hume succeeded in doing was not in fact showing up man's conviction about causality to be false but rather helping to bury consideration of this aspect of thought from the general purview of scientific investigation: he helped drive abstract speculation about causality underground.

In an evolutionary sense, this driving of metaphysical speculation underground was necessary. Man had to do this in order to establish the necessary beachheads from which to launch the attack on the mysteries of the physical universe. The conscious processes by which man achieved this submersion were ultimately inconsistent and confused. Man moved in this direction not so much because he clearly saw what was going on, but because in the process of the collective unconscious, he felt an urge in fact more powerful and more driving than what could be inferred from the content of his conscious thought processes.

Hypothesis: the essentials of metaphysical thinking were in fact driven underground and submerged; they have, however, nowhere been more effectively disposed of than in Hume, and Hume didn't do a very good job of it.

If this in fact is so, why was the course of affairs so sloppy? This involves again some summary historical perspectives.

As man emerged from the obscurity of his own early history, he coped in a formal way with what was first the contents of his conscious thinking—his personality, the material world around him, and his own efforts to cope as an individual and survive therein.

Following this, his next major thrust was to develop gradually a system of essentially metaphysical insights into the universe, a

process that began with the Greeks and culminated during the high Middle Ages.

A serious attempt was made in Europe to develop this metaphysical system into a basis for an entire civilization, to embody its insights about human nature and human responsibility into an order of law and government, and, finally, to establish a general order of things which would sustain individual man and society until the work of the material universe was complete and time had run its course. In the specific doctrine of Christian thinking. the medievalists expected that they were analyzing and establishing things pretty much as they would then be for man until the second coming of Christ.

There was an intensely positive dimension to this attempt, whatever its ultimate satisfactoriness. At the same time, there were some glaring deficiencies. In their enthusiasm for the system as it had been developed, the authorities equated the general system with complete and inviolable truth. They fell into the understandable delusion that what they had discovered was enough and attempted in essence to dead-end investigation after truth by identifying a body of acceptable doctrine and by labeling the malcontents and those who disagreed as " heretics." For the most part, heretics didn't get very nice treatment during the Middle Ages.

This set of processes had considerable success for quite a while, but the insistent consciousness of man could not tolerate the situation indefinitely.

Man realized that he had to move ahead in his thinking much more clearly than he realized the exact reasons why or what sort of epistemological implications were entailed. He realized where he had to move, much more than he had insight into how to get there. He submerged metaphysics, without destroying it. This is a cleavage, a dichotomy which exists without adequate solution in our thinking to this day.

For valid reasons, there has continued to manifest itself a strong bias in our culture against metaphysical thinking. This is a bias without question so strong that many of the ablest of minds have

been caught in the confusion. By no means does this confusion necessarily negate effectiveness of achievement; quite the contrary. It is important in the fabric of how knowledge coheres generally; before we're done with our experience on earth, we will need a better resolution of the quite real problems that exist.

The investigating scientist generally is so engrossed in the pattern and in the mechanics of his discovery that the basic epistemological problems fall quite appropriately outside of his concern. But. for example, to refer the matter to the point on which the empirically-oriented mind thought metaphysics foundered: the mind of the scientist most certainly is operating in some sort of causal context. The scientist is after the way things are constituted, what the objective situation really is, and how the universe in its various manifestations really does operate. The professional convictions of science impinge on measurement and factual description. The circumspect scientist readily admits that his convictions about ultimates are indeed his personal opinions or beliefs. His perception is—and quite appropriately—that matters of this level are not susceptible of scientific investigation or discovery.

However, that is like saying that the manufacturer of motor cars really does not have to know the road maps of the country where they are going to be driven. And, in identifying certain limitations in scientific thinking, we cannot thereby let the generalized thinker off so easily: the general nature and cohesiveness of human experience is the dimension of professional philosophy, and if the professional philosopher ends up getting sucked into the confusion, he can somewhat more appropriately be taken to task. If professional philosophy makes mistakes, in the matter of general considerations, the mistake is imputable to it in its specific area of expertise, and that is something different.

Bertrand Russell was one of the leading minds of the twentieth century. In the early part of this century, when he was yet a young

man, he wrote a little book called *The Problems of Philosophy*.[2] This is not a long book, but it is a very interesting one because of ideas that it advances and the remarkable number of basic questions that it raises. One can never get the problems of philosophy totally into focus, simply because of the changes that occur with time; one can merely attempt to summarize and evaluate the situation as it has occurred up to present time and as it now exists. In his little book, Russell did a superb job of drawing attention to some of the cardinal interests of the philosophical tradition past and present.

Our interest here is in watching a brilliant and typically modern mind attempting to deal with the problem of scientific knowledge, which we have been discussing, versus the metaphysical tradition. There is a place in this little book where Russell deals with what he refers to as the "Laws of Thought." He enumerates these as follows: 1) *the law of identity:* "whatever is, is"; 2) *the law of contradiction:* "nothing can both be and not be"; 3) *the law of excluded middle:* "everything must either be or not be" (p.72).

What Russell says about these laws is of immense importance: "the name 'laws of thought' is also misleading, for what is important is not the fact that we think in accordance with them; in other words, the fact that when we think in accordance with them we think *truly*." (p. 73). Russell recognizes the importance of these principles and gives us a provocative forecast: "but this is a large question, to which we must return at a later stage" (p. 73); unfortunately. he never really gets back to that later stage.

Although Russell recognizes these as self-evident logical principles, he also sees that they are not merely tautologies, but somehow true about the world and prior to specific knowledges. The important thing for our consideration here is the fact that Russell properly makes a recognition concerning this basic dimension of perceiving the world, but does not handle the

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[2] Bertrand Russell, *The Problems of Philosophy,* Oxford University Press, London, New York and Toronto, 1st Edition 1912, reset and reprinted, 1946.

perception later on within the rest of his explanation. The truth of the matter is that these principles strike into the basic fabric of metaphysics, and ultimately of causality, as it was studied in Hume. As did Hume, Russell perceives that there is an area which really operates in metaphysics, but instead of these things being worked into the theory, they are, as metaphysics was generally, suppressed and driven below the surface of conscious thinking. When Russell at the end of the book expresses his final theory, he goes one hundred and eighty degrees opposite to according to these basic insights some special function inside knowledge: "thus our intuitive knowledge, which is the source of all our other knowledge of truths, is of two sorts: pure empirical knowledge, which tells us of the existence and some of the properties of particular things with which we are acquainted, and pure *a priori* knowledge, which gives us connections between universals, and enables us to draw inferences from the particular fact given in empirical knowledge" (p. 149). And, in the next paragraph: "Philosophical knowledge, if what has been said above is true, does not differ essentially from scientific knowledge; there is no special source of wisdom which is open to philosophy but not to science, and the results obtained by philosophy are not radically different from those obtained from science" (p. 149).

The mistake which Russell makes here is simply that he on the one hand recognizes the specific realm of metaphysics and then, when he comes to expressing formal theory, neglects and forgets this recognition. In his system as he formulates it, he ends up denying to philosophy any particular order of wisdom, but this denial is based on the very serious oversight mentioned which he is guilty of.

But this is where we have been before, the modern mind seeing knowledge largely in terms of: 1) empirical fact, and 2) logic-mathematical congruence.

The first principles, although originally recognized, go underground, as did metaphysics for the most part in our culture. We are still in the throes of an anti-metaphysical mentality,

although we live in a very real world and do know many things about existence itself and about the causal fabric of our overall surround.

James, Hume, and Russell have been mentioned in this chapter not in the sense of providing any complete schema for the history of modern philosophy, but because they are quite representative of formal philosophical thinking as it has occurred in our culture over the last few centuries and are all "hung up" over the same basic difficulty: how to cope with the disjunctive realms of recognition and knowledge that are implied in the complex matrix of human experience. Generally, metaphysics and science are seen as antithetical to each other, and when a vote is taken. science generally comes up on the winning end. The historical reasons for this I hope are evident by this time: what it comes down to is the simple fact that the vested interests which controlled metaphysics attempted to dead-end human knowledge there, a thing which man in general could not tolerate, although he did not in fact realize at the time just how to go about expressing his intolerance.

The truth is that we may be witnessing a passing quarrel, the chief energy of which is comprehensible in terms of the emergence of progress through evolution, rather than in the exact content of apparent disagreement.

What we have been analyzing here is the parry and thrust in human thought, as it has occurred in cultural evolution. For an overall view of the world. metaphysics and science may in fact prove to be complementary to each other, each operating in its own sphere, yet contributing its peculiar portion of intelligence, neither impinging upon the area of the other in any way that the one could either prove or disprove the basic approach, processes, or conclusions of the other.

At least, this is the hypothesis which structures the last chapter, which is called, as is this entire work, simply: "Man at Millennium."

Chapter VII

MAN AT MILLENNIUM

To this point, we have been climbing up a mountain: the mountain of man's physical as well as mental and cultural evolution. We have been interested, as we have been making the ascent. primarily in the ground which we have had to cover. There have been brambles along the way, sharp ascents, and dangerous chasms in human thinking, which we have done our best to avoid. At times, the ascent has been difficult and perhaps tedious. But now we are at a spot where there is a small plateau and where we are able to take time out for a rest, surveying what lies ahead, and also the panorama that is below. As we began our journey, what we could see were the things around us and to an extent the mountain up ahead, but we had little sense indeed of how the terrain fit together as a whole. As we have ascended in our struggle, we have had glimpses out through the trees, but we have been too busy ever to establish a vantage point that brings the entire panorama under its gaze. We are now at that point. We have come finally to the place in our fighting upward where it is time to stop and take stock not only where we have been, but also where we are at this moment, and to the extent possible, we should now make an attempt to study the lay of the land between us and the final mountaintop.

Perhaps it is only now that we are able to get our overall journey into some sort of unified perspective. We see below the village which we left; instead of being composed of houses and streets, it is now a white dot below in the valley, on the edge of its lake. From a distance, we could only make out the mountain peak as a solitary, lonely titan. Now, as we gaze upward, we can get some idea of the

specifics of the terrain and where it is that we must now guide our paths as we continue towards the final realization of our journey.

To this point, we have made some attempt to maintain relatively sober balance, in terms of array and analysis of scientific and of historical fact. What I have said so far has been meant as a factual account. It has not been complete, but has aimed rather at providing certain perspectives into the overall history of experience. To the extent that I have been capable, I have been reporting things as in fact they have occurred here on earth, our planet. This, I trust, has not been fantasy, but has in fact been the locus in time and space of our experience, culminating in present time.

Grantedly, in analyzing culture and its evolution, I have been looking at it mostly through the eyes of a Westerner, mostly studying his own culture in its current manifestations and its roots throughout history.

But now, with such biases and limitations as there are to this thinking, it falls upon us to attempt to put all this together and to evolve a picture of things which seems to be the point of convergence towards which all this writing to date has been directed. We certainly cannot take a point of view which is purely scientific in nature. Were we so to do, our gaze would soon be lost in the details which might draw our attention, and, while that is most appropriate in certain circumstances, it is definitely not what we are about here.

This last chapter gets highly speculative. It is offered not as a matter of fact, but as hypothesis. It is even a wild hypothesis, but, nonetheless, it is offered in all seriousness. It is not offered as a substitute for any particular kind of knowledge or expertise about specific areas, as is necessary in ecology, medicine, nuclear science, and so forth. Rather, it is generalized thinking, an attempt to put the data of human culture into an essential pattern. Thus, while it is recognized that this sort of consideration is not valuable for all times or all places, it is nonetheless offered without apology.

This is a summary, an extrapolation into the future of trends that I think have already become established in the actual evolving

history of our species. As such, it constitutes a prediction. It is not anticipated, to be sure, that history will evolve itself exactly as is stated herein; in fact, I can accept it that the entire extrapolation is unwarranted. However, if someone is to convince me of that, I admit frankly that I am going to have to hear his specific argumentation, to which I would hope I would attempt to keep my mind open.

It has always been a tendency for man to attempt to pierce the veil of the future and to discern what is the outcome of the vital process of the race on earth. Historically, such attempts have been found wanting generally and have pretty consistently been written off as excessively fanciful and lacking in any real foundation. There is the possibility that *perhaps* we are in a somewhat privileged position at this point in the evolution of our culture. Attempts at prediction of the future in the past have in fact been hampered by a lack of knowledge of the world around us and, specifically, of the evolutionary process which has evolved ourselves. Generally, there has been a tendency on the part of man to view human nature in a static way. It has frequently been anticipated in apocalyptic writing that there would be an end point of the universe, an outcome of the whole process going on around us. Generally, this has been considered as a sort of magical event, something which would happen to the universe from the outside: it may be, on the contrary, that these visions of the future have been some premonition of a process which is occurring naturally. from within, as the end point of quite natural processes in the appearance of higher life forms on earth and their ultimate evolution through time and according to the intrinsic laws of nature.

Man's hope for millennial achievement is usually, and quite understandably, rather cynically explained as his attempt to reject his individual and possibly racial mortality. Generally, we have developed a fear and an aversion for magical events and have disciplined ourselves to operate more and more in terms of hard, demonstrable fact.

Given the intelligence of man and his imagination on the one hand and the difficulties and disappointments of current existence on the other, it is certainly natural to want to imagine a fairyland where man would be able to play, unhindered; on the other hand, part of growing up has been the process of training ourselves to distinguish between fantasy and fact and to adhere to the latter in terms of our adult behavior.

In itself, the universal hope that man has for the emergence or appearance of a better world is certainly no proof of anything except the ability of man to fantasize and the pain of current existence as we know it.

At the same time, it is meaningful to look at the pattern of the evolution of intellect in the universe and to attempt to see what its nature has been and, if possible, to get some sense of the direction of its thrust.

In earlier chapters, we have attempted to see where through time we have been, in terms of our evolution from the elements and the development of our cultural history. We have also made some attempt in general fashion to judge and identify where we are now. Much more tentatively, offering a synthetic hypothesis in thought, we now direct attention to where we are going: the portion of the climb up the mountain that yet remains.

Whether or not things are exactly as stated in this chapter, or will be, I nonetheless advance it as a proposition that should be given serious consideration: is there a possibility that we are in fact far enough along this road of evolution that we can discern in some realistic sense the possible end point or outcome of the process?

Is it at least possible that man's typical millennial thinking throughout the ages has in fact represented a premonition of things that may in fact become quite actual in realization?

There is no doubt whatsoever about the fact that we are engaged in a ballgame in human experience on earth, the rules of which we have very rapidly been changing: further, there is, in a way that has never been true before, a general consciousness among aware

people of the accelerated rate of change to which we are subjecting ourselves.

Some of the change, indeed, is unwanted by-product of conscious goals. Typically, either individually or as societal groups, we have set about to gain certain ends, and, in implementing the means towards these ends, we have established conditions that were in fact well outside the range of our conscious anticipation. In many ways, including our current concern over ecological matters, we are coming to a time in our culture when there is an increased need for conscious control of negatively oriented and destructive forces in human nature—if we do not do this, there is every indication that human life will be increasingly dehumanized or, worse, there is a very real possibility that we may destroy ourselves, which is in fact the exact point at which we began this series of essays.

There is no doubt but what we are seriously obligated to do our best to cope with the immediate and practical problems of our time: overpopulation, unequal distribution of human goods, pollution, hate and war, racism and persecution of minorities, and so forth.

But, too, it is a question quite seriously to be entertained whether or not there is the possibility of the occurrence of a major breakthrough as far as intelligence and spiritual experience is concerned: the possibility of radically, not just incidentally, altering the pattern of human existence. It is, in fact, precisely in this spirit that this synthetic hypothesis is advanced: not as a belief or a credo, either societal or personal, but purely as stimulus for thought and as a challenge to our own patterns of thinking about ourselves.

The fulcrum in the discussion here is the present hard fact of the emergence of intellect from the backdrop of matter in the universe. If what is proposed here is a bit fanciful, it is only fair to recognize that we ourselves are rather fanciful creatures, in our potentialities, although in our actuality, we are frequently dreadfully bogged down, crestfallen, and pitiable in our limitations and sufferings.

Let us try once more to focus upon the reality of things by stepping outside our immediate context. As we see ourselves now, it has become increasingly clear that we are the product of organic

evolution from matter: intellect, a function of organized matter relying on the forces of atoms, molecules, the genetic system, biological development, and, ultimately, evolution in culture over the past few millennia. What is developing in general is a picture of the pattern in natural process which has produced ourselves: the picture of our cosmic genealogy, not as instantaneously created by magical explosion into the world, but rather as evolved organically and by steady steps from the background of matter.

For the purposes of trying to get things into focus, let us suppose a contradictory sort of experience. Let us in imagination drop back in time a few million years to an era when different life forms reigned on our planet, and back beyond that to the place where there were no life forms at all. If we could study the world at that time and could then compare to that picture the knowledge that we have of ourselves such as, for instance, we have been considering in these essays, there would be only one conclusion possible: for matter to produce out of its own internal potentialities the organization required to evolve man would be, in fact, a most preposterous extrapolation, a monstrous sort of improbability—yet, folks, here we are!

Let us not write off possible solutions to the general equation as being fanciful; if we understand ourselves in any sort of objectivity, we realize that we are already quite surprising creatures.

The question, granted that intelligent consciousness has advanced as far as it has, is: what, if any, is the *ultimate* destiny of intellect and consciousness in the universe? If we are a preposterous extrapolation from the past, what might possibly be the patterning of the extrapolation which reality is going to make in the future, taking us now as starting point? —provided of course that we do not fabricate our own version of Armageddon.

To give another dimension to our consideration here: each age has had its apocalyptic souls, who have looked for millennium as a magical occurrence. A cliché: "Repent, the end of the world is near!" Or, we are acquainted with the mildly humorous phenomenon of a religious sect going out on Easter morning to the

top of some hill in the countryside, expecting a definitive "happening" to occur. This chapter certainly is not written in a failure to recognize the proclivity, for thoroughly obvious psychological reasons, towards this sort of solution to the overall human problem. It certainly would be nice if we could find a simple way to create perfection out of what seems to be the incredible mess in which we find ourselves.

Our hypothesis: we may in fact be headed somewhere definitive, but the typical clichés or premonitions are not where the action is. Again, a constraint to identify this chapter as synthetic speculation, not advanced as fact or dogma, but hopefully as a goad to our own thinking.

In the last chapter, we summarized the emergence of two major thrusts in human culture: the metaphysical and the physical, or empirical. Our postulate is that these thrusts are not in fact antithetical, but rather complementary to each other, although with a quite complicated relationship.

For the individual, time may seem slow, and change may appear to occur by small increments. This is a phenomenon due to the way that man tends to view his experience. As we have seen before, relative to cosmic time, human cultural development has in fact been occurring at breakneck speed: over a few thousands of years, man has moved from the bronze age of Homer into the atomic age of the astronauts. This a matter of hard historical fact.

One distinction we have been attempting to make, and to which we now return, is the distinction between the lateral thrust of man in current time, during any generation or age, and the predominant thrust of progress in time through culture forward.

Through the Middle Ages in our culture, man's chief "scientific" concerns had been metaphysical in nature: considerations concerning human consciousness and the nature of the world in its broadest dimensions. As we have seen, metaphysics, after reaching its high point in the Middle Ages, submerged, apparently necessarily, without, as has been suggested, genuinely being destroyed.

From earliest literature down into our own times, man has had some sense that the current phenomenology in which he exists and which spawns him in his individuality is somehow incomplete; man has had a tendency to extrapolate his experience into some sort of spirituality, some "world beyond." Fairly close to the beginning of our written culture, we find among the Greeks Plato wrestling with the contradictions inherent in this world of experience and postulating the existence of a more real reality in some preeminent realm outside and beyond what man currently is engaged in. I am not altogether sure that this should be written off as completely delusional thinking. While in fact there is a defensive mechanism involved in man's coming to this sort of conclusion, it is still meaningful to attempt to investigate how in some general sense there could be a universe which might generate such a preposterous questioner as man.

The problem of course comes from man's own conceptualizing mind. There remains a metaphysical question that is basic to human experience: does man, in achieving generalized consciousness, reach, in some sense a reality that is more lasting, more real, and more ultimately significant than the world of changing phenomena? Or, at the antithetical position, is the universe basically physical, and human consciousness and organization a sort of pitiable mistake? Is man lured into some stretching after the eternal and the infinite, only to be dashed to the rocks in the thwarting and destruction of his expectations, as his body returns to the state of disorganized matter from which by some chain, however long it might be, it had originally evolved?

To summarize the same thing another way: is the universe at core spirit in nature, and the phenomenal world somehow derivative, and, for man, the ladder by which somehow he re-ascends to quintessential reality?

For Plato, there was a universe of subsistent qualitative forms, or Ideas, in which the things of change participate, but which in fact are ultimately real and much more real than the data of the phenomenological world. Whatever else is true, this was a clear

attempt on Plato's part to cope and come to grips with the sense of contingency he experienced in his world; he was moved in his thinking by a strong urge to find something ultimate and necessary in the passing phantasmagoria of his daily experience.

During the Middle Ages, in the monasteries and universities of Europe, this insight which Plato had into his world was developed into an analysis of the real world which emphasized not the eternal aspect of the *quality* of things, but rather, and I believe more importantly, the *existential* reality dimension of the actually existing world.

A hypothesis: this experience, which began with the Greeks and evolved through the experience of man in the Middle Ages, achieved in fact a cluster of tremendously powerful insights into the world which continue to have internal objective cogency, both within the system itself as system, and also relative to actual daily experience. As we have attempted briefly to summarize in our inspections into Hume and Russell, these insights have never been explained away. They do require some explanation other than merely passing them off as being too general or not sufficiently factual: they deal in fact with the matrix of reality which underlies all particular experience. These insights plug into experience where Hume manifests a covert recognition of real causality and where Russell recognizes, although he does not subsequently recognize the recognition, the real nature of the basic laws of thought or the ways in which in experience man is presented with intelligibilities about reality itself, which are applicable to all manifestations of reality and are implicitly contained in any cohesive and objectively consistent matrix of consciousness.

At the core of this cluster of insights, there are to be found objective dimensions of reality and spirit which fall outside the purview of any specific factual analysis.

The basic pattern of metaphysical insight: a world does exist, and we are in it. We perceive not only the qualities of this world, but its reality—its existence—and find contradictions inside limited reality which point beyond immediate experience to another and

more basic dimension of the universe. Material reality is seen as existing contingently, not necessarily. As far as the intrinsic characteristics of any given quantity of matter are concerned, that quantity of matter either could be replicated any number of times or might even not exist at all: there is an inability to find intrinsic necessity in material being—yet it is *real*.

The argument continues relative to the reality of things. Matter, as anything must, acts according to *what* it is—a cause can act only in efficacy of its mode of being. Matter represents a limited mode of being which can cause according to the specifics of its constitution, but cannot cause anything to exist—including itself. Existence is an unqualified attribute of anything real, and itself is a dimension of reality which cannot be caused by any specific material force or operation. Any matter is a specific mode of existence which—and this is the point—actually *exists*. The specificity of matter is from its own nature—its existence must be from a reality mode which is competent to effect or bring about existence.

This competent source of existence in the phenomenological world must be subsistent existence, an energy state the nature of which is reality itself: infinite reality—subsistent energy (being). This mode of existence cannot be material in the sense in which we experience matter. It must be conscious, not in the ordinary human sense of consciousness, as in wakefulness or sleeping, but in a super-eminent, preemptive sense. In the formulation, it is this infinite dimension of reality, and not any simple anthropomorphic representation, that man throughout all ages and all cultures has referred to as God—not, certainly, an old man sitting on the throne with a gray beard, but infinite energy, without form or limitation, eternal, self-causing, subsistent reality, a reality underlying and supporting the world with which we are in experiential contact.

Concerning the universe. this seems to be the core metaphysical insight. In man, the microcosm, in the higher operations of intelligence, is noted a measure of freedom from ordinary material operation. Matter, as such. is limited to time and place. with a

certain form. weight, impenetrability, and so forth. Spirit, on the other hand, is realization, consciousness, possession of truth, and grasp of concept content, all of which are phenomena basically "other" than the manifestations of matter, in any ordinary sense.

Be it clear: I am presenting here what I think is the core intelligibility of the "medieval synthesis."

These operations mentioned, in man, are non-material, in the ordinary sense; the argument is that man on his highest levels of functioning acts independently of matter. The principle invoked here is that there is a correlation between the mode of existence in any being and its mode of operation: if in fact the mind of man. or intelligence, is capable of operating without matter, it has therefore the possibility of existing without matter.

Referring back into Biblical terminology. it is in this sense that man was made "to the image and likeness of God—this not in the sense of any bodily configuration, but rather in the exercise of spiritual function; God, without matter and infinite himself, infinite existence—man in his highest functions somehow mirroring this lack of materiality, this basically spiritual contact with reality.

Let me note in passing: we are omitting in this entire conversation the person and life history of Jesus either in itself or as it affected medieval Christianity. The life of Jesus represents a mixture of history and myth which can only confuse the line of thought with which we are here concerned. This is not to degrade the importance of the life of Jesus on the pattern of later civilization. It is merely to attempt to establish lines of thought which have their validity in basically distinct context, whatever it may have been that Jesus was.

Now for some summary statements about the medieval insight—synthesis: it was at base functional and metaphysical, concluding that man's operation and existence was in fact dependent on his existence as a rational animal, but not, at least in the higher operations of his function, on any particular physical realities. It was an attempt to drive conclusions about the human spirit to their ultimate. The resultant interpretation of man was an attempt to

answer real problems concerning man, for which no other adequate account has since been given, in any other terms. It is certainly not as though we have a "scientific" explanation for the intrinsic qualities of intelligent consciousness or for the implications of a possible universe—like our actual one—which would have the capacity of evolving intellect from itself. This metaphysical synthesis was driven underground by empirical science, which was and has been frequently opposed by those who had the control of the metaphysical synthesis, so to speak, in their hands. However. the problems for which the metaphysical synthesis was at first constructed and elaborated remain in experience, as much as they ever were: somehow, this is an interest to which man must one day return. Perhaps this time is not so terribly far in the future.

Was the metaphysical synthesis driven underground, as far as the mainstream of our culture was concerned, not because basically it misidentified or failed to understand the spirit of man and his intelligence, but because, once it achieved and mastered its basic insights, it had nowhere else to go? It had become so obsessed with the possible independence of the human spirit from the material world that it made such independence the primary fact in a system of "science" and ethics.

In so doing, it made some very serious mistakes and misunderstandings concerning the total reality of the human situation. In brief, it saw this intelligence, this consciousness of man, as being magically infused into the world by an external divinity, as opposed to being an evolutionary outgrowth of the intrinsic capabilities of the original manifestation.

It misunderstood the past of man by accepting in a literal sense the Biblical story of man's origin; it accepted that man had been individually created and brought holus bolus into a universe which had previously been created. The long history of evolution from relatively simple molecules all the way up through lower organisms and higher life forms, each step being taken according to strict natural laws, was simply not comprehended. The medievalists were

concentrating on the result of a long process and in so doing failed to perceive or understand the process.

So much for man's past. With respect to the current present, the metaphysicians made the mistake of seeing human consciousness as only "incidentally" linked to his body, as opposed to the highly specific ways in which in fact the myriad manifestations of consciousness are the epiphenomenon to, and completely reliant on, the substrate of the chemical, neurohumoral, and neuronal systems of the brain. They had no real insight into the organizational process that occurs in the central nervous system, initially directed by the genetic system within the fertilized ovum and as later influenced, moderated, and "programmed" by an intensely dynamic interaction with both the internal processes of consciousness and the external reality with which we are in contact and in which we live.

With respect to the future, the medieval mind anticipated the occurrence of millennial fulfillments as an event thrust into the world from outside: the time at which Jesus, in his role as king of the universe, would return in the heavens to herald the beginning of the new, spiritualized world order.

As things worked out historically, the difficulty with the medieval synthesis was, as far as man living in society was concerned, that it answered everything, in fact answered too much, and ultimately spelled out the road map for its own drastic revision by attempting finally to reject and to suppress the efforts of man further to expand the arena of his knowledge.

The medieval synthesis was worked out in the medieval monasteries and universities, as the summary product of centuries of scholarship and study. It occurred in the context of the preservation and contemplation of the literary masterpieces of classical antiquity. For this to occur, a great deal of segregation of human life from the ordinary responsibilities of a rather harsh society had to come into being and, in fact, did, in the monastic and clerical institutions which yet have left their physical remains standing throughout Europe. Leisure was required—a busied leisure, to be sure—for the mind to absorb and digest the heritage

of the past, relative to the more immediate phenomenology of the present.

The creation of the medieval synthesis was an intensely dynamic and inventive corporate operation. It never really achieved absolute unity either in comprehension or acceptance; that is not to be wondered at—it is simply a basic characteristic of corporate human behavior.

A problem arose as the synthesis was taken over by organized and hierarchized religion as its special possession and treasure, for which it, organized religion, was interpreted as the divinely appointed guardian. The basic philosophical synthesis was translated into a body of religious dogma which came to be viewed as essentially stable and immutable, which did not in fact brook expansion or alteration of perspective, and which, in the last analysis. came in grossly distorted ways to misidentify incidental aspects of human outlook with some that were essential.

Consider, if you will, the notorious case of Galileo, which is so well-known that it will not be entered into in detail here. Let us simply identify that as he began to tap himself into the power of scientific method and to announce obvious conclusions about the world, he was, in fact, persecuted and quite shabbily treated, instead of being recognized and honored for what he was: every bit as much a discoverer and a devotee of truth as Albertus Magnus or Thomas Aquinas ever was, though in a different range and order of human investigation.

Officialdom of the day felt threatened in their grasp on supposed truth and, unquestionably more importantly, on their political power and wealth. The incidental of geocentricity was identified as being in fact intrinsic and important for the wholeness and integrality of the medieval synthesis: it was felt that for the synthesis to hold together, the earth had to remain in theory the center of the universe. Whether or not the account is a matter of historical apocrypha, the entire spirit of the ludicrous pantomime which subsequently took place is in fact aptly contained in the

reported muttering of Galileo as he offered an enforced obeisance: *"Eppur si muove!"* (Whatever, it moves!)

In this context, medieval metaphysics went underground not because of its being basically incorrect, but because those who were responsible for its preservation attempted in fact to dead-end human knowledge, which over the long haul has never proved to be a very profitable or reasonable species of undertaking. The overall system, instead of serving as springboard for further investigation of the universe, came to be entropic and self-limiting: it became more and more elaborate in its detail and in its internal evolution, without ever really grasping, beyond its heyday, intrinsically important new perspectives on reality and man's place in the universe. The minutiae could be argued about or against. but it became the accepted rule of the game that the major format of insight should remain inviolate and should not be expanded. In brief, the church and for the most part university philosophy as well came to view the insights of the medieval synthesis as a complete explanation for the universe, a body of knowledge which was expected to remain constant until the world should be completed in its history, until the millennium should be fulfilled in the second coming of Christ.

We have commented earlier on the sense of identity that this body of knowledge did in fact impart to European culture, a sense of identity which lasted as an important force in experience and investigation for literally centuries. Even the physical scientists (in the modern sense) at the beginning of their discoveries did not question the overall validity of the metaphysical matrix and, in fact, found the psychological stability of their own lives therein. The early scientists did not in fact as a body reject the general medieval acceptance of the world and universe: while they began to open up new horizons philosophically, mathematically, and physically, such men as Galileo, Kepler, Bacon, Paracelsus, Descartes, and Newton continued to feel in their general attitude about the universe that at least on a spiritual plane, in the realm of metaphysics, the world was fairly well as it had been described by the earlier philosophers.

The medieval mind saw itself as the critical phenomenon in the observable universe—and it saw itself as a manifestation in the observable universe of an imitative mode of existence which had in some very real sense infinite existence and intelligence as its initial model. It is not altogether clear that intelligence—generalized consciousness—is not in fact, will not prove to be, the final "hooker" in the universe. The medieval mind may have been right about seeing intelligence as the most significant manifestation of reality around; the mistake, however, may have been in seeing mind as something of a sport, a freak, a magical intrusion into the universe—as much an inexplicable and monstrous wonder as any denizen of a medieval bestiary. The failure—and it is a comprehensible one—in the understanding of man was seeing him as created essentially as man into a universe, instead of evolving from it and being organically and etiologically contiguous with the rest of the world.

The medievalists made the same mistake that has been made by other cultures, that of believing that man had initially existed in a happier, more blessed state, from which as a result somehow of his own folly or weakness, he had fallen. The Adam and Eve story was accepted literally, as a historical account of man's existing in a state of natural harmony with himself and with his world, which he himself in his original sin messed up and destroyed, leaving himself in a state of spiritual poverty and material vulnerability.

That kind of magic simply has not occurred on our earth: the original sin myth is nothing more nor less than an allegorical recognition of the difficulty that human intelligence has had in fact in emerging from the material matrix and in attempting to fight the battle that is internal to human nature between mind and the less generalized, less intellectualized animality which is in fact the origin of and substrate for human consciousness.

The final stance, then, of the medieval synthesis, and this is the reason it became for the most part suppressed, was that in effect it came to attempt to remove man, as far as the mode of understanding him was concerned, from the context of his actual origin and to

assign to him a magical slot in the universe: this was a mistake which if allowed to continue would have run the process of evolution into a *cul-de-sac*. It would have brought about the shackling of that very spirit which it had originally been invented to explain and to understand.

Again, concerning the outcome of the universe. there was implied in the medieval outlook the expectation of a magical "happening" which was to occur as we have said from the outside. Man's job was interpreted as working out his spiritual destiny within the framework of the church and its doctrine, fulfilling whatever place in society he had been assigned. In the fullness of time, things would be reestablished in a new order in some manner of divine cataclysm.

ln sum, the medieval world had profound insight into the implications of existence at all, but it eventuated as a massive oversimplification of things. It was in its own way a neat world, at least as far as core theory was concerned: it provided answers for just about everything, answers, however, which by our standards would by no means be accepted as complete or adequate.

In its own way, in spite of the cruelty and the harshness of the times, there is much that is beautiful and attractive about the medieval world. In a romantic sense, it is almost too bad that the medieval synthesis wasn't enough and couldn't have been perfected in terms of its manifestations. Certainly, as far as organic continuity with the landscape is concerned, medieval architecture has much to say for itself, relative to the excrescences of modern technology with which we have cluttered up our physical environment. However, medieval culture made a final mistake: it attempted to define its truth as ultimate, instead of constituting an evolutionary step in the unfolding of a greater history of the race. Itself evolved as a step in man's struggle to find himself, the medieval synthesis ended up solidified in static form. It attempted to bring to a halt the process which in fact had generated it.

This is a reality perceived by early modern man, usually in less than fully conscious ways. Man had to move ahead, and, in order to

do so. he had in some effective way to get around the obstacles presented to him by his own heritage. In his vaguely perceived need to continue the fact of human intellectual evolution, man was left with no alternative but to suppress from the mainstream of human intellectuality the medieval synthesis, because this synthesis itself would in the last analysis not tolerate being related to in any other way.

The light of modern times dawned with the waxing realization that there were other dimensions to truth than metaphysical speculation: other truths about the cosmos, about mathematics, and about the physical and chemical organization of matter. Generally. it came to be perceived that there were natural explanations for much that during the medieval centuries had been considered as magical and supernatural. Once this door had been effectively opened, man the discoverer had to venture into the beyond: the movement was not so much the result of conscious choice on the part of individuals as the urgent expression of the racial subconscious. In the process, man turned his back on metaphysics, not because of its being intrinsically wrong, but because of its making the mistake of placing itself as an obstacle in man's path to his necessary progress.

What occurred was not merely the manifestation of individual discovery, but rather an alteration in the drift of expression of collective unconsciousness—man's sensing in a subliminal way that the time was ripe for something else—as is evidenced by the fact that science as a phenomenon occurred as a process of gathering impetus not in any one place or as the product of any one mind, but in fact throughout European culture as a whole.

In the conflict between modern science and the older metaphysics. a rift occurred in human experience which is still profoundly present in our culture. Hypothesis: metaphysics and natural science are not in fact antithetical to each other, but are attempts to deal with reality on basically different levels: the explanation of human culture as an ongoing phenomenon is not so much to be found in a rejection of the essentials of metaphysical

insight so much as it is to be found in the convergence of these different levels of insight into the universe in synthesis.

The picture that modern science generally has developed for us is one of cosmos which has achieved its current manifestation according to dynamic principles internal to it, probably initiating from an original cataclysm which took place some ten or so billions of years ago. Our earth was the product of a long but intrinsically orderly process of cosmic evolution from the initial phenomenology of energy and matter: on our earth, conditions necessary for the evolution of life became established. Over time, via the genetic ladder and biological stream, higher consciousness has gone through the cultural evolution which in large part has been the specific subject matter of these essays.

Man has come to see himself as consciousness sustained at a certain level of organization in the material universe. Initially, he perceived bodies, including his own, as simple solids possessing mass, form, momentum, and so forth. Cultural evolution and the explosion of human knowledge had to occur for man to be able to penetrate in back of surface appearance to an understanding of the actual nature of matter in all its complexities: both in itself and, as we have seen, as a substrate for human life and consciousness, which, as we are doing here, ultimately is capable of reflecting back through the entire process.

Consciousness, then, here is seen not merely in its spirituality and self-internal lucidity, but as a function of higher levels of vital organization—a potential dynamism from within the matrix of matter rather than an imposition from the outside. Consciousness is a new phenomenological manifestation in the universe, which occurs given a highly specific and highly organic level of organization in matter: rather than being completely distinct from the material universe, it is in fact an epiphenomenon to specific organizational patterns in matter.

The immensely important change that this has generated is that man as he focuses science more directly on himself has come to see himself not as a quasi-magical freak, as he appeared to the medieval

mind, but as a purely natural phenomenon, explicable in terms of levels of increasing complexity in the organization of matter—not as resulting from a direct creation by an omnipotent divinity, but rather as originating from potentials which were initially contained in the matrix of matter in its primary manifestation.

Again, in spite of the importance of man's lateral thrust into his universe and world, into his concerns for everyday in economics, politics, ecological science, and so forth, our interest here is in the vertical dimension: man's reaching into the future, the continuing important thrust of his cultural progress. Our interest is in the destiny of human evolution, the ways in which, as knowledge progresses, man more and more contributes to the ongoing process of evolution not in a subconscious way, but in a directly realized way. In the past, vertical thrust in human progress for the most part occurred as a subconscious by-product to human operation and function: the final reality of the contribution of our friend Odysseus was terribly important, but it lay, in fact, fairly well outside the pale of his consciously realized goals. Not to put too fine a term on it, what he was interested in doing was getting back to Ithaca, claiming his property and land, re-establishing the relationship with his dear son Telemachus. and bedding down his faithful wife Penelope. These are certainly comprehensible and worthy human goals, but the ultimate thrust of the human experience exemplified in Odysseus has a much broader sweep and ultimate significance.

Again, human consciousness has come to be appreciated as a function of or epiphenomenon to the dynamic organization of the immensely complex brain of man. As brain science progresses, there is an increasingly complete emergent picture of two different dimensions to what in fact is an identical phenomenon: human consciousness. Brain and behavior are in fact seen as one manifestation, which we, because of the way we approach the problem, have tended to see as much more distinct than they actually are. At present, it is still necessary for us to attempt to understand and interpret human life through these two different dimensions: 1) the experiential or psychological and 2) the

measurable, the chemical, the anatomical, and the neurological. There cannot be any doubt, however, that as we continue to understand better the dynamic coding that occurs within the brain, as these processes become to be more completely delineated in their specificity, we will come much more comprehensively to understand the various states of consciousness as being a specific dimension in conscious brain states. To drop down into the immediately practical world—what we have been considering here is theoretical—modern psychiatry parallels the general pattern of evolution in the rest of science and culture, in that it has come to see the manifestations of human psychopathology as natural phenomena, as opposed to magical states or the results of possession by evil spirits.

Very rapidly to characterize the advances made in psychiatry, during the years that the medieval synthesis was being established, interpretation of aberrant human behavior tended to be speculative. mystical, magical. and founded in supernatural interpretation, as we have seen in some earlier considerations concerning witchcraft. Early modern psychiatry manifested a growing insistence on the importance of natural factors in psychopathological states. The nineteenth century was, as far as its major contribution was concerned, largely descriptive and taxonomic in its approach, as man struggled to get the phenomenology of mental disturbance into some comprehensible framework. During the early twentieth century, the important thrust in psychiatric investigation was into the internal analysis, from the psychological point of view, of the development of personality first in its psychopathological manifestations and then in the patterns of normal development. This analytical process was focused first of all on the individual as such, and later extended into human psychology as it manifests itself inside the family, from individual to individual, and, finally, relative to the more comprehensive matrix of society itself. This analytic process is, of course, not at an end, nor by any means dead; however, current investigation in psychiatry has come to be more and more correlative with progress in brain science. Crude though

in many ways it is, the largest single breakthrough in twentieth century psychiatry has been the introduction of the use of the tranquilizers in the treatment of human psychoses. The effect that these substances have on an abnormally functioning human brain and the concomitant explosion of knowledge about neuronal and neuro-humeral brain manifestations, are more important, relative to the number of human lives beneficially affected, than all prior discoveries or alterations in orientation towards mental illness.

Out of this emerges a more complicated picture, a new realization that in pathological conditions we are in fact dealing with pathological brain states. This is not in the sense of the brain psychiatry of the nineteenth century, which sought to find its evidence—as indeed it had to, since that was the locus and scope of science at the time—at the postmortem table or under the microscope. Attempts to correlate brain abnormality with psychotic manifestations on this level have for the most part been unsatisfactory, except, of course, for such extraordinarily important discoveries as the attribution of the manifestations of central nervous system syphilis to infection by an organism. Rather, psychopathology is increasingly understood in terms of disturbances in higher level integration and coordination in the immensely complex cognitional-emotional-neuronal-physical-chemical matrix that is this marvelous brain which resides between our ears. It is increasingly clear that the integrative state of the brain at any given time, from a purely physiological point of view, limits the patterns and possibilities which are available for human expression. This is not necessarily to say that the *etiology* of psychiatric disturbance is physical; quite the contrary, for just as with the progress of modern science the mind-body distinction blurs, so also the problem of the psychological versus the physiological etiology of psychopathology becomes an increasingly complex and less distinct one.

Man emerges as a self-programming, consciously symbolizing and feeling physiologic system, in which the physical state is worked out and established only in experience: in what we have

referred to as the so-called "functional" psychiatric disorders, there are abnormal brain states, on the higher integrative levels. These may well result from continued exposure of the overall organism to certain important sorts of stress, the subjection of the overall organism, the psycho-physiologic unit, to maladaptive experience.

Most psychiatrists today operate in the context of the conviction that the most important of future psychiatric discoveries are probably going to come not through further insights into the psychodynamics of man, but rather from more extensive and more specific discoveries concerning the operation of man's brain, with a resulting greater specificity in identification and treatment of the abnormal brain states which underlie or at least are parallel with psychopathological functioning, and a better and continuingly more rational combination of these dimensions with the psychotherapies, milieu management, and so forth.

What is being discussed here might be interpreted—it frequently is—as fairly well putting the quietus to the human conceit of his spirituality, inasmuch as it emphasizes the extreme closeness of the relationship between his consciousness and his brain. But—and this may be the final anomaly here—quite the opposite may, in paradoxical fashion, prove to be the truth.

In fact, we may at this point begin to be able to perceive the possible convergence of the various species of human experience: the ethical struggle, the metaphysical effort, and man's increasing knowledge of the material universe, including his own origin and nature as a phenomenon of organized matter—which is what leads us into the final vistas of these essays.

One final time, let us recharacterize the sweep of human history. Our elder brother Odysseus was limited in his coping with reality to dealing with things as they appeared to be on the level of gross observation: ships, the sea and sky, the animals and people with whom he came in contact. Spirit was seen as the world of the gods, who were essentially super-beings, superhumans who interacted with the world and with human life in a magical and frequently capricious manner.

The Greek philosophers developed the perception of a more ultimate and generalized reality than we ordinarily perceive in material experience; however, there was no way that the Greeks could utilize this insight practically: matter was still the limiting factor, and there was no way in which man could use matter in other than the obvious ways. The mystical uses of numbers and mathematics by the Pythagoreans, for instance, may have given some structure to human psychology, but in the long run were not effective ways of interacting with a basically stubborn material universe.

During the centuries of the medieval synthesis, man came to see the most ultimate dimension of reality as spiritual, subsistent and infinite consciousness and existence. As far as dealing directly with the material universe was concerned, man's attempts at the alteration of elements were unsuccessful: however weird, human involvement in alchemy and in the black arts did in fact serve as some sort of premonition for ways of interacting with the material universe which did in fact, and quite literally, lie ahead. These were early abortive attempts in practice to blur the boundaries between matter and spirit; they were, however, doomed to failure because of the inadequacies of currently extant knowledge.

Following the practical rejection of metaphysics, modern science has made stupendous breakthroughs relative to our abilities to interact with the material universe. Matter is no longer seen as the apparent reality of gross bodies, but rather as composed of much smaller functional units which on some level are interconvertible between matter states and energy states, as we have to make the distinction in our understanding. Through our instrumentation, we have quite successfully been turning matter back on itself and by doing so have come to unlock many of its inner secrets. We in fact use this knowledge to play back and forth between the visible and the non-visible universe in ways which absolutely would have blown the minds of thinkers such as Hume and Newton, who lived so short a time ago on our earth and in our society.

Relative to knowledge and function, we have increasingly advanced our freedom from the limitations which matter seems to impose upon our existence.

It is not incidental that we are learning in sweeping fashion to impose symbolization systems and message-carrying matrices on the material universe with increasing flexibility. We have succeeded in expanding our systems of symbolization, which began, to simplify a bit, with the invention of the two dozen squiggles which make up our alphabet, well outside the material world as it is available to us in immediate experience. I suspect it will not prove merely to be incidental that as I am composing these thoughts my hi-fi in the background is reproducing for me the greatest musical expression of the best orchestras and musical artists alive today. As this dimension of our science progresses, there seems to be no intrinsic limitation, or at least we certainly haven't found it, to the ways in which we can impose retrievable symbolization on the material and even the non-material—in the ordinary sense—universe. The existence of many hundreds of human-generated symbolized disturbances of the ether which surround me as I sit here and which can be retrieved if only I have the appropriate radio receiver, is a phenomenon a great deal more wonderful than we ordinarily allow ourselves to realize. The final implications of these marvels are certainly yet to be seen.

At this point, we are prepared to plunge into the systematic hypothesis to which this entire book has been developing. As far back in our culture as we can study human thinking and feeling, man has had, concomitant with his perception of the material universe, a sense of the spiritual, the eternal, "behind," as it were, the phenomena of sensible experience. In the medieval synthesis, man came to recognize clearly that the ultimate reality in existence is spiritual and infinite. Man, in sharing spiritual operation, was seen as establishing a transcendent relation to infinite existence and ultimate spirit. However, medieval man made the mistake of expecting that the resolution of the tension in the universe and in human nature relative to it would come through some form of

supernatural or magical intervention, a divine intrusion from the exterior. This had the effect of dead-ending knowledge in the rigidities of ecclesiastical doctrine. In the development of modern science, through an understanding of the material universe, man has arrived at the general outlines of an explanation of himself as related to and evolving from the ultimate material matrix. He has come to understand consciousness (intellect) as arising from matter, but evolving through time and through culture into an increasing independence from matter.

Hypothesis: the convergent end point of these various processes is man's increasing participation in non-material, ultimate reality, not by the occurrence of violence to the system from the outside, but rather by his working into it in an organic fashion , evolving in accordance with the internal potentialities of the overall material universe into spirituality.

We had better approach that again.

Man enjoys a great deal of freedom these days, at least in restricted areas. We are able to get around the world in incredibly brief time and can now even make it up to the moon. In the extent of our knowledge, we are wandering up and down the entire material universe. Through our various methods of symbolization and our various processes for sustaining symbolization, we are achieving fantastic generalization of thought and mastery over space and time. This state of affairs, ourselves today, is a stupendous extrapolation from the state of the pre-vital universe, yet we are fairly well convinced that all this has taken place according to the process of evolution, relying on the intrinsic potentialities of matter originating from the initial "big bang."

Again, hypothesis: the end point of the human process, the emergence of intellect in the universe, is in fact freedom of spirit from matter, not through processes outside of nature, but as a result of man's mastering the science of the laws of consciousness relative to matter and gradually improving the manifestation of the phenomenon of consciousness until, in fact, it can "cut loose" from the ordinary state which we are used to in our own existence and

which has emerged as the result of evolutionary process. Again: human consciousness appearing in an organic way out of the backdrop of the material universe, but ultimately working itself out of the backdrop into a generalized existence in spirit and in consciousness.

l know this solution is not very acceptable to most people.

It is not acceptable generally to the materialist, since it ultimately validates the spiritualistic hypothesis that consciousness can exist independently and without matter.

On the other hand, it is not acceptable generally to the spiritualist, either, since it validates the materialistic hypothesis that man is "simply" a product of natural evolution from the matrix of the material universe.

One might conclude that this as a convergent end point therefore simply isn't acceptable to anybody; I at least suspect the opposite: this very crosscut through bias, although it proves nothing, may in fact be a hint that this solution may have something going for it. In a perverse way, it may eventuate that the convergent end point may in fact cut across all fundamental biases and transcendently and concurrently validate and yet invalidate the most important basic hypotheses that man has structured concerning his universe.

But that is looking at it rather from the outside. Intrinsically, how might this process occur, or, stated otherwise, why might we at least suspect the validity of this as being the ultimate solution to human consciousness?

As our insight into nature and life progresses, consciousness emerges as an epiphenomenon to an increasing organization of matter, subject to the potentialities of the genetic code and developmental process. This occurs in the species through evolution, and in the individual, through his own growth and development, following fertilization of the individual ovum. Consciousness—intelligence—is a function which occurs relative to the dynamic operation-structure of the brain, with its complicated input-, internally coordinating-, and output- modalities.

Hypothesis: that brain is a dynamic, self-programming system, in which there is a highly specific and definite correlation between brain-state and consciousness-state.

An extrapolation of the principles involved into the general road map of future evolution: an in-depth knowledge of the mind-brain relationship: a development of a generalized theory of the way that consciousness relates to material substrate: the creation of an artificial substrate which is capable then of sustaining consciousness: participation of human consciousness in experience relying upon other and artificial substrates as the sustaining organization for its continued operation: improvement of the system, increased flexibility, use of more and more generalized patterning: end point—freedom from matter entirely.

This is a bit mind-boggling. It seems preposterous. Yet, is it any more preposterous, relative to where we are now, than where we are now is to the way the universe was in its pre-vital state, in its existence as an inanimate and insensate womb from which our consciousness was to evolve? Of course, it is not. The prospect of inert matter "looking forward" to our current state of generalized consciousness is much more crazy, much more absurd than the prospect of ourselves looking from our current level of mastery of matter to the apparent end point of the process, which is. in our hypothesis: freedom of consciousness from matter without its destruction.

At any rate, to restate the hypothesis: intelligence attaining freedom from matter—and continuing its existence—not by magical intervention from outside, but through mastery of its relation to the matter which had first spawned it by means of the evolutionary process.

Without arguing for the absolute validity of this as the actual pattern of the universe. let us at any rate take a look at it to see what kind of conclusions might go along with it. There is no doubt but what this would be quite effective in terms of clearing up much of the contradiction and mess that exists in our cultural past.

From time immemorial, as we have repeatedly seen, man has had the premonition of the reality, even the preeminent reality of a spiritual world, outside of, behind, and more ultimate than the phenomenological world which we see.

One way of explaining this, of course, is simply to state that it is an extrapolation from life, a defense against the fear of death. That part of it is true, in terms of providing a psychological explanation, but it doesn't elucidate the phenomenon: this provides no insight into the qualitative level of the operation which is inherent in man's stretching towards transcendence.

The Greek philosophers postulated an ultimate reality behind the visible universe; they speculated quite seriously that human consciousness, in its grasp of truth and unchanging concepts, might itself in some sense share in eternity and immortality, might share an experience beyond the material universe.

At its best, the medieval mind was immersed in metaphysics. The medieval ideal was built on an other-worldliness and strove to develop perfection of the spirit. While the theory may not all have been true in an exact literal fashion, it possessed a great deal of cultural truth in a developmental, evolutionary sense. Sifting out the incidental from the essential, the quintessence of the medieval synthesis: infinite spirit—from infinite spirit, a material world from which and in which finite spirit evolves and lives—progressing through this life to a higher consciousness—a return to infinite spirit not in extinction, but in an altered state of existence—ultimately: a spiritualized universe.

Hypothesis: the medieval synthesis may have been correct about important elements in the general scheme of things, but due to lack of detailed knowledge of the material universe from which man had come, it may have erroneously supposed that the ultimate evolution of things was to occur by external decree and intervention from the outside.

Through modern science: knowledge of the material universe, with a concomitant suppression of metaphysics, not because

incorrect, but because of its anti-evolutionary attempt to dead-end human knowledge.

Hypothesis concerning the orientation of man to the ultimate truth of the structure of the universe: on the one hand, a progressive thrust throughout evolution towards ultimate grasp of the absolute state of affairs; against this, a number of various anti-philosophies, including the Epicurean synthesis, Hume's supposed destruction of human knowledge of causality, and, in our example, Russell's recognition of the intrinsic "Laws of 'thought.'" Anti-philosophies have made their hay not through internal insights, but by expressing the reluctance that man has to evolve into his future; or, to reflect it back into an earlier thought-context: anti-philosophies are an expression of "original sin" : the difficulty, as we have seen, in discussing our "first parents," of intelligence or intellect evolving and emerging from matter.

Hypothesis: after all, the early premonitions of man, his metaphysical insights, and finally his scientific insight into the world and technology—are not antithetical to each other—but convergent in the process of man's overall evolution out of the inert womb of the material universe into the realm of a spiritualized consciousness, independent from matter for existence and continuance.

Spirit: mastery over matter, not in some mystical, magical sense, but through exhaustive knowledge of the material universe through science: through technology, even, to the phenomenon of breaking free from matter.

To wind the thing up, membership in the Federation of Intergalactic Biosystems—human consciousness joining in the general consciousness of a universe—even, in a very literal sense, man being rejoined through the processes of nature with his God (pure energy).

Man at Millennium.

It has frequently in these pages been noted that change has been occurring with exponentially increased rapidity. The author quite honestly admits that this is a bit spooky and admits that his thinking

closely parallels apocalyptic or millennial thinking which has been present in all ages in our culture. But, given the exponentiality of rate of change and given the fact that it might just now be beginning to become evident what the *process* of millennial realization might be, it becomes meaningful to ask in a circumspect way whether we might just be high enough up this mountain that we can get a fairly good glimpse of the ascent to the summit, as we mentioned in the early part of this chapter.

If this is possibly so, the crux of the matter lies in man's mastery of the intrinsic laws by which consciousness has existed as epiphenomenon to organization in matter—and then extrapolating that process until the relationship of dependence has been obliterated.

Now, assuming this is so—and at this point we are surely talking merely imagination and pleasant fantasy—I rather enjoy thinking of consciousness deciding to establish the world as an ongoing museum and to preserve what is of interest and beauty in it as having been the cradle of intelligence emerging from matter, finally mastering its dependence on matter, yet reserving a kind of warm love for the locus of its origin and birth.

One thing I have attempted to emphasize from time to time: the laterality of human involvement, as well as man's persistent thrust into the future. This book has structured itself into a cosmic hypothesis. It is not, however, the intention that man be content to contemplate possibilities, at expense of failing to interact with his very problems with which he is faced today. These problems, simply, have not been the chief emphasis of the development of thought in these pages.

The author is well aware of the horrors of war today and of the specificities of man's inhumanities to man, not to speak of the individual ways in which man is done in and hindered in the expression of his humanity by intrinsic limitations of the specific organism which is himself: in spite of this flight of fantasy we have been through, the author is painfully aware of the problems to which man, both in society and in the individual, is heir. I have spent far

too many hours and days on hospital wards to be oblivious to that dimension of things.

To cap the overall phenomenon with one final thought: we have been talking about racial evolution, about the development of man as a species possibly into a state of higher consciousness. The fate of individuals: 1) stepping stones to higher life forms that are to come later in the evolutionary process or 2) somehow is personal immortality for pre-millennial man in some sense a possibility? At this point, the last thing l intend is to state what I believe to be a scientific conclusion. It is merely an investigation into the reasonableness of an aspiration: more, frankly, an expression of hope than anything which is directly found in experience.

Time is not "real." It is a creation of finite mind in a changing material universe. "Time" and "duration" are artificial concepts. The material, phenomenal world exists only in the instantaneous present: neither the past nor the future has actual reality. Granted that this material world is ultimately inexplicable as being the source of its own actual existence and that it is dependent on infinite existence as the existential backdrop which sustains it: the eternal infinity of spirit is not a manifestation of existence in some infinite future, but rather the immediate backdrop of reality against which each moment in time manifests its limited existence.

Hypothesis: spirit, having been generated from matter, with the dissolution of the material organization, simply may fall into an infinite "now" without *duration,* which is an artificial concept, but with only timeless existence—when, in fact, this universe achieves the end point of its evolution and when intelligence once evolved from matter is capable of mastering finally its dependence on matter, is there a possibility that not in a magical, but rather in a quite natural way, *all* higher human consciousness—and in fact whatever higher consciousness there may be in the universe—may be retrievable, may have the actual capability of rejoining in the overall manifestation of consciousness in an increasingly spiritualized universe?

That is an appendage merely to the general theory, one which neither adds to nor subtracts from the intrinsic discussion. However, I would certainly have no objection to being able to talk things over with my elder brother Odysseus and with Plato and with Jesus and even, in spite of some disagreement, with Hume and Russell. God knows (hmmm. . .strange that I should use that figure of speech) that I would like to be able directly to experience once again the consciousness of my father and also of my little Christopher: eternal age forty-four earth-months.

Strange feelings, indeed, for an earth animal.

But, then, man is a bit of an unusual animal.

And that is enough of the story of the unfolding universe for now.

(*Continued from front flap*)

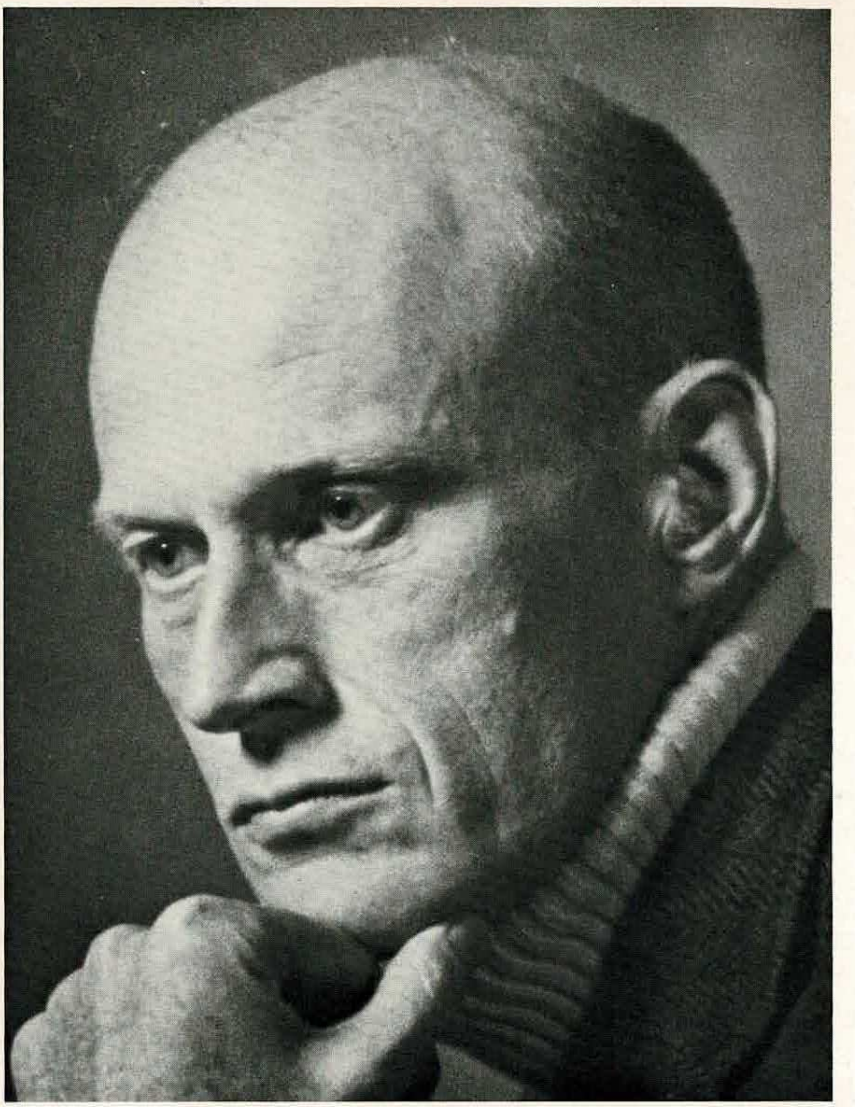
Rather than being a scientific exercise, these essays are, then, more an attempt at mental adventure, an effort again in man's ongoing quest to understand himself and the environment on earth and in the total universe that he calls home.

ABOUT THE AUTHOR

The son of a Midwest surgeon, Louis C. Martin graduated from St. Louis University *magna cum laude* in 1952, and in 1954 he took a master's degree in classical languages there. He earned an M.S. from Creighton University in physiology in 1960 and an M.D. from the University of Nebraska in 1962. After a year's internship at University Hospital in Omaha, he spent three years in psychiatric residency at the Nebraska Psychiatric Institute. His final training experience was at the C. G. Jung Institute in Zurich, Switzerland.

A diplomate of the American Board of Medical Examiners and also of the American Board of Neurology and Psychiatry, Dr. Martin currently serves as staff psychiatrist at the Lincoln Regional Center, and carries on a small private practise.

He is married to the former Jane Chaney and they live, with their son Matthew, and a new daughter, Julia, in Lincoln, Nebraska. *Man at Millennium* is the author's first published effort, but it is not intended to be his last.



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