DIVINE ILLUMINATION

AND REVELATION

The Augustinian Theory of Knowledge
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AND REVELATION

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INTRODUCTION

Explaining Christian Knowledge

Christian knowledge is based first and foremost on the claims that there is a God Who created all things and that God may be known by human beings. The Augustinian knowledge paradigm, which was for nearly 1000 years the foundation of Christian claims to knowledge, described the method by which Christians know of God. God is known through His Self-revelation and this occurs as Divine illumination of the individual intellect.

In the 13th century the Augustinian paradigm was rejected because of its inadequacies and this was later followed by the rejection of Christian knowledge. There has been a problem, for most of the second millennium, of how to explain the Christian case in a way which demonstrates its truth. A new explanation of the Augustinian paradigm is now offered in which the problems have been overcome and in which Christian claims regarding Divine Illumination and Revelation are shown to be true.

Western Culture has no Theory of Knowledge

Western culture, at the beginning of the 21st century, is in the throes of an epistemological crisis. The problem is that in every area of human knowledge there is no theory of objective reality, no agreed method for achieving knowledge and truth, and no body of objective knowledge.

Ideologies drive Cultural Behaviour

In the 20th century the dominant ideology has been Materialism, which has major difficulties as a theory of knowledge of reality, and has lost much of its credibility. The long term lack of a theory of knowledge and truth has led to scepticism concerning the possibility of discovering such a theory. Human behaviour is now driven by opinions and ideologies and not knowledge, and these inevitably lead to disagreements and disputes and ultimately to violence.

The general result of the ignorance of true reality and the mismanagement of the knowledge development process is the generation of an array of competing "solutions" to the problems of the culture. These "solutions" are defined as opinions. An opinion is a solution to a problem, or problem set, which is not based on a valid problem solving exercise and therefore does not amount to knowledge. Opinions greatly resemble knowledge in form, are often plausible, and can often be convincing when promoted skilfully. However, because they lack any formal justification of their truth and can never lead to agreement they are dangerous. They increase disputes and conflicts, and their effect on the body of knowledge is confusing and polluting. For a solution to be knowledge it must be able to call a valid theory of truth to warranty. Opinions cannot do this. Knowledge, by definition, is always true.

Ideologies are defined as formally and systematically expressed opinions. They often appear objectively as forms of philosophy based on reasoning. They recognise that the culture has no grasp of reality, no truth, and no knowledge, and they therefore substitute their own ideas in these areas. From this doubtful ground they devise concepts of society, human nature and morality according to their lights, and then base their behaviours on the result. As History shows the outcome is, not infrequently, the destruction of large numbers of human beings and their cultural and environmental supports. Ideological "solutions" are tomorrow's problems.

Ideological systems have no valid theories of truth or method and are speculations. Because they are not tied firmly to reality they cannot be properly criticised. It is always open to the defenders of ideological
systems to deny the validity of any model of reality ascribed to the ideology or used to evaluate it. Political considerations often replace truth and morality as the factors governing ideological behaviours, and ideological systems defend themselves from criticism by substituting their own ideas of "truth" and "morality", devised to suit political needs.

**The Fragmentation of Western Culture**

The consequences of the widespread mismanagement of the problem solving process are a large set of competing opinions, masquerading as solutions to the problems of the culture, and increasing disagreement and conflict. Each so-called solution is based on a unique misinterpretation of reality. Misinterpretations of reality, which are equivalent to ignorance of truth, account for the failures of cultures. An opinion-driven culture eventually grossly misinterprets reality. It deals with experience from a base of almost total illusion. Reality has little tolerance of foolishness and gross misinterpretations of reality lead to cultural disintegration and replacement.

According to M.V.C. Jeffreys, Western culture is in process of fragmentation. "We are well aware of the disintegration of thought and knowledge into an increasing number of different systems, each more or less self-contained, with its own language, and recognising no responsibility for knowing or caring about what is going on across its frontiers. The story of the Tower of Babel might have been a prophetic vision of the modern university; and the fragmentation which is spotlighted there affects the whole of society".

Different understandings of reality give different truths and different bodies of knowledge which lead to different purposes and patterns of behaviour. These systems of reality theory, truth concepts, knowledge, purposes, and behaviours amount to subcultures. Where they depart fundamentally from the original culture, they become cultures in their own right. Western culture is now an agglomeration of conflicting subcultures, competing with rival alternative cultures for the domination of the group.

The relativists have claimed that there is no absolute truth and all claims to knowledge of reality are merely interpretations relative to human purposes. All ideologies are therefore of equal value, amounting to mere fictions, which are no more than a convenience for those who assert them. From this the relativist infers that everybody has the right to create for himself his own ideology, based on his own conception of reality and truth, and to attempt to enforce it with all the energy of which he is capable. This is the ultimate in cultural fragmentation. Should it occur, it amounts to a struggle of all against all, to be settled, in the absence of an agreed understanding of truth, by force. Cultures, of course, cannot survive such a meltdown.

Cultures and societies collapse when people no longer believe in them strongly enough to fight for them. In the second half of the 20th century two major empires, the Soviet Union and the British Empire, vanished, not because they were defeated in war, but because people lost faith in them. The consequences of the collapse of Western culture, if it occurs, must be catastrophic. When Roman culture collapsed six centuries of social disorder followed.

**Ignorance places Public Order and Democracy at risk**

The effects of the absence of knowledge on behaviour at both the public or objective and personal or subjective levels may easily be observed. In approaching the observation and analysis of the behaviour of individuals, organisations, and governments it may be remembered that the evaluation of the behaviour is simultaneously the evaluation of the understanding that drives it. Where that behaviour is undesirable then the understanding is wrong. If the understanding is wrong its model of reality is wrong. Wrong behaviour is a symptom of delusion based on a false model of reality.
There is confusion and disagreement among members of the culture about what they should know and how they should behave, and there is a widespread acceptance of ideologies based on assumptions, as the substitute for knowledge.

If the formula EXPERIENCE...> UNDERSTANDING...> BEHAVIOUR is considered, the solving of the problems of experience results in understanding which governs behaviour. The lack of the correct understanding, which is knowledge, leads to unpredictable and undesirable behaviours. The effects on individual behaviour are of two kinds, which are:

1. People don't know how to behave correctly, and this leads to confusion, anti-social behaviour, and apathy. Disorder in society is a problem of ignorance. Parents are confused and the teaching of the young is no longer based on knowledge. Ignorance places public order at risk.

2. People substitute opinion, ideology, and cultism, for knowledge. They are forced to select their motivating ideas from whatever is offered to them. The opportunity is thereby created for dangerous and incompetent politicians to lead them into calamities of which the 20th century has many examples. Ignorance places democracy and peace at risk.

The absence of knowledge affects human behaviour by reducing, distorting, and irrationalising the choices made by individuals.

**Ignorance is a Primary Cause of Violence**

The lack of knowledge and truth also affects the behaviour of states. Human disagreements may be settled by argument or by combat. Where there is no theory of truth no argument may be seen to be true and all intellectual arguments must therefore fail. Where there are no valid rational arguments the only arbiter left in human affairs is the appeal to force. When force is the only effective argument the world belongs to the strong and the ruthless. This is the situation in the world today, as the record of escalating violence shows. Modern means of mass destruction make the problem of knowledge urgent.

**A New Theory of Knowledge is Needed**

Western culture needs to be reconstructed from its epistemological foundations upwards. According to Richard Tarnas, a more rational cultural vision is necessary which gives a new world view with principles and ideals fundamentally different from those that have driven the modern world through its violent history. A theory of knowledge is the prerequisite to the implementation of that vision.

The new theory of knowledge must draw together the old absolutes, religion, cultural philosophy, and science into one compatible framework. This new and unified matrix for Western culture must also discern some pattern in human experience which will make sense of human existence, and which will impart meaning, purpose, and direction both to individual lives and to the development of the culture. This sense of purpose will shape the search for knowledge. The corpus of knowledge can only be secured in the absolute and the knowledge methodology must therefore give absolute objective knowledge of ultimate reality.

The Augustinian epistemology is the only theory that can meet the conditions for knowledge. The way has therefore been opened for Christianity to restate its claim to knowledge based on the Augustinian paradigm.

**The Thesis**

Neo-Augustinian knowledge theory sees all knowledge as the gift of God. The Gospel of St. John states the teaching of Jesus that "The Holy Spirit, whom the Father will send in my name, will teach you
“everything”. (John 14:26). As developed by St. Augustine, Christian knowledge theory was based on Divine illumination of the intellect.

The Teaching System of God

The teaching system of the Holy Spirit is set out in diagram 1. The system is designed to develop souls which is synonymous with intellectual development. The Holy Spirit teaches by experience. The Spirit gives the problems of experience and also gives the solutions to the problems in the form of understandings. The combination of problems and solutions is necessary to intellectual development since the intellect must understand the problem before it can understand the solution. The Cosmos, which is the creation of the Holy Spirit, is a source of the problems of experience, and the Creative Source, otherwise called the Interior Master, the Light of Reason, and the Inner Light, which is a function of the Spirit, is the origin of the solutions or understandings.

THE SYSTEM OF THE HOLY SPIRIT
Diagram 1

The forms are: 

HOLY SPIRIT = REALITY ---> EXPERIENCE ---> PROBLEMS
HOLY SPIRIT ---> CREATIVE SOURCE ---> SOLUTIONS

The Holy Spirit, which is reality, gives experience which appears to the intellect in the form of problems. HOLY SPIRIT ---> CREATIVE SOURCE ---> SOLUTIONS The Holy Spirit, through the system of the Creative Source, gives the solutions to the problems upon simple requisition.

In the problem solving process the problems of experience, as understood by the individual, are processed psychologically to achieve understanding and knowledge. This process is the interaction between the individual, as the problem-solver, and the Holy Spirit as the giver of understanding. The solving of the problems of experience results in understanding, or in greater understanding where some understanding already exists. This process accounts for all human understanding, both of spiritual and secular matters.
The Intellectual Path to God

The study of the psychological processes which result in knowledge shows that human intellects have a direct path to the Holy Spirit, seen as the Teacher, and may know the answer to any problem that can be defined and understood. The Holy Spirit, as the Teacher, gives knowledge of God through the same creative processes by which all understanding and knowledge is imparted to individuals.

The Methodology of Knowledge

Since the Holy Spirit teaches through experience Christian knowledge theory starts with the study of experience. Science is, of course, the study of experience with the aim of arriving at knowledge of reality. Materialist science restricted the field of experience to the physical only, but Christian science theory removes that limitation. All experience, the ideal, cultural, moral, and religious, as well as the physical, may be studied.

Scientific Epistemology

A fresh approach is outlined to the problems of knowledge based on scientific methods. The aim is to define theories of absolute reality, truth and knowledge which can be applied, not only to science, but also to philosophy and religion, and which will therefore re-establish the foundations of a re-integrated Western culture.

Scientific epistemology is the application of scientific methodology to the study of the problems of knowledge and it is a better problem solving tool than traditional or philosophical epistemology. Scientific epistemology is firmly based on experience and is open to criticism and correction. The problem solving methodology is based on the rule that correct solutions follow from correct understandings of the problems. The first step in every difficulty is to identify the real problem and to do the necessary investigation and analysis of the facts as given in experience.

The psychological explanation of knowledge must necessarily include an account of the human intellect which shows how intellectual illumination occurs. Scientific Psychology has been unable to give a general explanation of the functioning of the human psyche. In materialist thinking psychological conditions are merely states taken by matter and are of no urgent interest. In order to understand Augustinian epistemology, however, a psychology of knowledge is a requisite. Scientific epistemology follows David Hume's claim that the scientific understanding of the mind is prior to every other science.

The Structure of the Text

The first part of the text defines the Theory of Subjective Knowledge. It is concerned with the scientific investigation of the processes of knowledge within the subjective mind. From this study a scientific epistemology is derived. This is the scientific understanding of the human intellect in its operations on experience in pursuit of all types of knowledge.

It takes the forms of a theory of knowledge based on the solving of the problems of experience, and a theory of the structure and functions of the human intellect. It shows how the intellect processes experience to achieve knowledge of the intellectual, physical, cultural, moral, and spiritual realities. Scientific epistemology is therefore the foundation of all human knowledge, scientific, theological, and philosophical.

The second part defines the Theory of Innovation of Ideas. It is concerned with how knowledge, as the true solutions to problems of experience, is formed. Karl Popper has denied that new knowledge is the result of logical processes of the mind. Popper's claim is that knowledge is the result of certain psychological processes, and this is followed. The scientific investigation of these processes shows them to be the interaction of the intellect with a source of unlimited creativity, which is a definition of
God. Augustine calls this creative entity the Interior Master and it is otherwise called the Teacher, the Light of Reason, and the Inner Light. Analysis of the psychological processes leads to the discovery of the rules for the creation of true solutions which are knowledge, and the reasons both for false solutions and failure to reach any solution.

The third part defines the Theory of Reality and Truth. It shows that knowledge of God, as ultimate and fundamental reality, can be achieved by the correct operation of the scientific problem solving method. In effect, God gives knowledge of Himself through the psychological processes in response to intellectual inquiries. Christian claims regarding revelation are therefore substantiated. Fundamental reality, which is the bridge between the ultimate reality of the Infinite God and created reality, is defined. Fundamental reality, as the "theory of everything", is the basis of the rational scientific system of knowledge.

The Augustinian Knowledge Theory leads to Peace and Progress

All attempts of Western Culture to progress peacefully and rationally by intellectual argument must rest on absolute knowledge and truth. That truth is given by the Augustinian paradigm and its theoretical definition is offered here.
SECTION ONE

EXPERIENCE AND KNOWLEDGE OF REALITY

Knowledge is a product of the processes of thought, but there has been little understanding of the way in which the subjective mind achieves knowledge. The Western philosophical tradition has seen the processes of the mind to be logical, but this approach has always been fraught with problems and the Postmodernists have, on good grounds, denied its validity. Karl Popper has suggested that knowledge is produced by certain psychological processes. The understanding of these processes of the mind is fundamental to any theory of knowledge.

The nature of the human mind has been the subject of long-running philosophical disputes. Materialists see the mind as a state of matter. For them the “brain” and the “mind” are different ways of looking at the same entity. Rene Descartes is credited with the first statement, within the Western tradition, of the separate natures of mind and matter, and Karl Popper has more recently restated the theory.

In this epistemological project the investigation of the human mind is pursued independently of the brain. Compatibility with Cognitive Psychology is maintained by an approach based on the study of observable behaviour. This is supplemented by the study of experience. Experience gives the problems and behaviour represents the response. The mental actions that relate the problems and the behavioural solutions may be inferred, where inference is a problem solving activity. Speech is an observable behaviour and the individual's explanation of his understanding of particular experience and his reasons for selecting particular behaviours in response to the experience are valid and valuable evidences to support the inferences.

Hume's Empirical Approach

Psychology and subjective epistemology have a common interest in the functioning of the human psyche. The interest of subjective epistemology is limited to the question of how knowledge is achieved. David Hume (1711-1776) proposed to investigate the nature of mental processes to discover how the intellect reached knowledge. This was to be carried out using the experimental method employed so successfully in physics by Isaac Newton. The study would result in a “science of man” which would be the only solid foundation for all other sciences.
Experience and Knowledge of Reality

Hume's own investigation of mental entities and processes has been heavily criticised and is now discredited. Hume's programme is taken up, with the substitution of scientific methodology for Hume's method of reasoning. Hume's epistemological project, as amended, is a scientific investigation of how experience is processed within the human intellect to produce knowledge. The investigation of the human mind is broken down into more basic studies concerned with how the problems of experience are reduced to knowledge, how this knowledge is retained, more or less permanently, by the individual, and how retained knowledge is deployed to deal with the reality of experience. These questions are discussed in the three parts of this section. The results of the studies provide the foundation for a scientific theory of epistemology.

Thinking is Problem Solving Behaviour

Mental behaviour is usually called thinking. Thinking is often associated by psychologists with problem solving. In successful thinking the individual moves from the awareness of a problem to the achievement of the solution. Problems occur in the experience of the individual. The form for problem solving is given by:-

PROBLEM OF EXPERIENCE ---> THINKING ---> SOLUTION

The solution determines the mental and physical behaviours of the individual with regard to the problem. Mental and physical behaviours are parts of the same behavioural program. The form is:

PROBLEM ---> SOLUTION ---> MENTAL AND PHYSICAL BEHAVIOURS

Further experience tells the individual if those behaviours were successful and therefore appropriate. Inappropriate and unsuccessful behaviours bring the validity of the thinking process into question.

To successfully manipulate reality to achieve specific ends the behaviours must be correct. To achieve correct behaviours the individual must understand reality through the careful observation and analysis of experience. The thinking process that leads to the solution must be based on a valid problem solving method that takes all relevant experience into consideration. The correct solution to the problem of experience is called knowledge. The form is then:

PROBLEM OF EXPERIENCE ---> PROBLEM SOLVING METHOD ---> KNOWLEDGE ---> CORRECT BEHAVIOURS

Knowledge is therefore the consequence of the correct execution of the problem solving method applied to the problems of experience.

Section 1.1.2

Divine Illumination and Revelation
The Problems of Experience

PART ONE

THE PROBLEMS OF EXPERIENCE

The study of subjective knowledge is concerned with how individuals gain knowledge. Human beings come into the world understanding almost nothing and yet within a short period of time every child has acquired some understanding of its environment and by the end of its life may be very knowledgeable indeed. The process by which the intellect develops is based on experience. The world of experience exhibits order and this order may be learned through observation. Everyday living and experiencing in the world leads to understanding.

The worlds of the Inuit, the Somali herdsman, the Polynesian fisherman, and the New Yorker, all seem so radically different that their experiences may appear to have little in common. However, the basic experiences of human beings do not differ. All human beings learn the rudiments of space and time, they learn how to analyse their environments, and to use a general purpose language to communicate information about their world. They learn to recognise people, human relationships and the conventions of social behaviour. They learn the explanations given by their cultures for the existence of people in the world, and the history of their own group which gives them their identity. The technology of the modern world is a superstructure built upon this basic set of experiences.

The unit of experience is the problem. New experience is not understood simply by observation but occupies that intermediate area between the known and the unknown. It is recognised intellectually as new experience but has not been assimilated into the class of experiences which are understood. It therefore constitutes a problem to the individual intellect. The problems of experience beset human beings throughout their lives. The living of each day brings its quota of new problems. The solving of problems has the benefit that the individual gains solutions in the form of understandings. Knowledge is the true understanding of the problem of experience, and the behaviour, both mental and physical, that follows from knowledge is that most likely to achieve the objectives of the individual.
CHAPTER ONE

THE THEORY OF EXPERIENCE

The point of departure is Aquinas's argument that knowledge starts with experience. St. Thomas took the senses and sense impressions to be the starting point for knowledge. From the point of view of the conscious intellect there is no awareness of sensory data or of any category of events of experience such that those data or events can be distinguished from understanding. St. Thomas recognised that raw sense data was not the stuff of thought and proposed a psychological process whereby sense data became understandable in itself and then intelligible to the intellect as a part of the understanding of reality.

The conscious intellect can deal only with understandings and experience of reality always takes the form of understanding within the intellect. Individuals either understand the events of experience or they understand that they have a problem of understanding an experience in a way that would allow them respond with correct behaviours, both mental and physical. The set of understandings may therefore be divided into two subsets which are:

1. understandings of the existence of problems of experience, and
2. understandings of solutions to problems of experience.

The Classes of Experience

Human experience covers all sensory, aesthetic, feeling, emotional, intellectual, moral and spiritual events which appear to intellects. Perceptions of the physical world appear to the intellect as understandings related to its model of physical reality. Physical feelings represent emotional reactions to perceived physical events and are intellectual rather than physical in origin. Emotions such as love, happiness, fear, and depression may be triggered by external events but their expression lies in the spiritual nucleus of the human entity. All these forms of experience appear as intellectual experience. Individuals understand that they are experiencing physical, emotional, and spiritual events but their real experience is one of understanding. Pain, as an experience, is non-existent to the unconscious intellect since it is not understood. It is meaningful only to the conscious understanding.
Analysis of experience in the intellect reveals differences which allow classification. Experience may be arranged into five classes:

1. Physical experience is the earliest and commonest form met with by the human intellect.
2. Cultural experience in the forms of social training and education are part of a child's upbringing and the culture forms the medium for human interaction.
3. Moral experience, in the forms of behavioural training and the learning of respect for others, is also an early factor in intellectual development. Morality is a first consideration in dealings with other people.
4. Religious or spiritual experience is met with in childhood but its depth and quality are the result of study in later years.
5. Intellectual or ideal experience is superficial in most intellects, and is mainly the province of philosophers, psychologists, and theologians. The world of ideas may be seen as one of the components of the understanding of human nature.

Events of experience may have multiple subunderstandings within the intellect. The visual experience of a victim of murder may give rise to a simple biological understanding that a life process has ceased due to a certain cause. Seen against a normative model of individual human life it may be understood as a premature and unnecessary termination of a valuable life process. Viewed from a model of social order it may be understood as a contravention of law. Looked at as a reconstruction of the events of the termination of the life it may give rise to emotional reactions of horror, outrage, and anger. Seen as an event affecting family and friends it may be understood as a permanent loss and a matter for grief and sorrow. Upon moral reflection it may be seen as an evil. All experiences are not understood in the same ways by all individuals.

**Reality as the Source of Experience**

The human individual has only a set of experiences to work with. Treating these experiences as problems he arrives at the solutions to those problems which are understandings of the experiences. Reality is the explanation for the origin of experience. Since he has experiences of physical, intellectual, spiritual, moral, and social events, he may come, through the problem solving method, into understandings of the realities which gave rise to those experiences. Reality is therefore more than the physical environment.
Experience and Knowledge of Reality

The cultural subreality is explained as the set of objective knowledge, both formal and informal, and theoretical and applied, resulting from the solutions of problems common to all members of a group. Ideal reality is the reality of the rationalist tradition, as described by Rene Descartes.
There are few responsible individuals who would deny the fact of morality. Moral experience is a consequence of living a life and moral considerations are primary in all behavioural decision making. The moral universe has been recognised from antiquity and Confucius defined his understanding of it several hundred years before the beginning of the Christian era. Moral experience translates to moral knowledge when processed by normal problem solving methods. Religion recognises and explains the supernatural reality and the relationship of humanity to this reality.

Scientific epistemological theory sees five subdivisions of reality, adding to the physical subreality, the universe of intellects and thought, the human created reality which is the culture, the moral universe, and religious reality. Each of these subrealities, or natural environments, is valid in that true knowledge of them can be obtained by the correct application of the methods of knowledge.

These five subrealities account for the totality of human experience. They form parts of a more fundamental reality which links the universe of experience with the ultimate or supernatural. Knowledge is the correct understanding of any part of the five subdivisions of reality, and of the total or fundamental reality.
CHAPTER TWO

PROBLEM THEORY

Cultures as Sets of Problem Solutions

The relationship between experience, problems, the culture and the set of intellects is given by the thesis is that experience gives rise to problems, and the set of solutions to the problems of experience is what is called the culture. The label of culture may be applied both to the problem solutions of the group and to those of individuals. Here the word “intellect” is used to refer to the set of individual solutions, reserving the word “culture” to its group meaning.

Problems have their origin in the human situation of living as a group on a small planet in a three-dimensional universe. Some problems are common to mankind; others to groups in particular geographical regions. The problems that are common to the group give rise to common purposes and objectives, and from there to common solutions. These solutions constitute group understandings and the set of common solutions forms the culture.

The culture, in the form of particular solutions to particular problems, is taught to the young as the subject matter of education. The cultural solutions to problems, in the forms of objective knowledge and paradigms of behaviour, give the student intellect greater understanding of reality and enhanced power to achieve purposes.

Not all group problems have ready-made solutions. Those cultural problems which have not been solved as yet, or not solved satisfactorily, must be solved at the level of the individual intellect. These problems are reduced to understanding by the use of a valid problem solving procedure and may later be incorporated into the set of objective knowledge.

For any intellect experience may be direct or interpreted through cultural conventions. Conventionally interpreted experience is filtered by education within a culture and is subject to conventional problem understandings and solutions. While the individual is free to reject cultural interpretations of experience and cultural solutions to the
Experience and Knowledge of Reality

problems of experience there must be some significant motivation to do so. Commonly such interpretations are rejected on the grounds of alleged immorality.

There is a class of problems which are peculiar to people as individuals. They have no group equivalent and therefore no culturally normal solution. These subjective problems are also solved using a valid problem solving method, and the solutions are annexed to the intellect as subjective knowledge.

Personal experience is of two sorts. The first sort includes all those events of experience which the individual has met before, and which therefore he understands and can respond to with appropriate mental and physical behavioural sequences. The second includes all those events of experience which are new to the individual and therefore constitute problems. These problems are to be solved and thereby understood, and then to be responded to behaviourally in an appropriate way. The intellect in dealing with problems of experience achieves new and enhanced understandings.

People approach experience purposefully, seeing the events of experience as relevant or irrelevant to their objectives. The behaviours that are expressed in response to purpose-relevant experience have the aim of furthering those objectives. The variety of human purposes falls under one of two headings which are survival and self-fulfilment. The problems selected by the individual for solution are real problems. Real problems are those which bar the progress of the individual intellect towards the achievement of its purposes, and which the solution, as intellectual and physical behaviour, will overcome. While experience follows the observation of reality, problems of experience are a feature of cultures, both of the individual and the group, and not of reality itself. A problem arises only when the correct understanding and behaviours for dealing with reality are unknown.

Problems of experience fall into the categories given by the natural environments. A group culture or individual intellect, which has no purposes that fall within a given environment, cannot have a real problem within that segment of reality. A primitive culture has problems of survival and its primary environment is the physical. Its interest in other divisions of reality is minimal. A rational culture has problems of truth and morality and must extend its interest into the ideal and moral environments.
The Problems of Experience

At the subjective level the individual may or may not have understandings within every category of reality. Where there is understanding within a category there will also be a philosophy. The philosophy may see something of interest and significance within the category and the intellect may evolve a purpose, for example, to find out more. Conversely, the category may be viewed by the philosophy as non-significant and the individual may seek to promote this view as a purpose. For example, morality or religion may be little understood by an individual who may have no interest in those categories. He may reject any claims with regard to them and this behaviour is consistent with his experience and understanding, although it will be contradicted by those with knowledge in these categories.

Although problems may be commonly regarded as undesirable, intellectual problems are, by and large, beneficial. Problems are the means of intellectual development. The intellect reacts to the problems posed by experience which are the indicators of inadequacy of understanding. Understanding develops by the solution of problems which cease to exist when the intellect extends itself to include their solutions. The growth of individual intellects therefore proceeds from problems and the successful projects to solve them.

An obvious value of problems lies in cases of error of understanding. It is the sign of errors of understanding that anomalies will arise in consequence of attempts to act according to those understandings. Anomalies fall outside normal understanding and constitute problems. They are therefore the safeguard against the persistence of human error. The presence of problems of ignorance and error motivate changes in the understanding through creative problem-solving. As the understanding changes, so the appearance of reality and the quality of experience change.

Problems are Violations of Models of Reality

The individual analyses his experience and makes distinctions. These are related logically into a model of the segment of reality that he is observing. Where David Hume saw only “bundles of impressions” there are in fact logically structured models of reality. The individual may describe aspects of reality when not actually observing them by referring to his internal models.

The model of reality describes a natural subset of the field of experience in such a way that rules may be derived. These rules are predictive, and the ability to predict, to some extent, the processes of reality constitutes,
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in part, the individual's understanding of it. The operation of the individual intellect in any segment of the field of experience is based on what his model tells him, and the rules that govern its operation. Models enable the individual to interface with his environment in a way that permits him to influence that environment in the direction of his objectives. The extension of this is that the individual bases all behaviour on what his model of reality tells him is the case. It follows that if the model of reality is inadequate or wrong the consequences of behaviours based upon it are unlikely to be successful. The successful achievement of human objectives requires the detailed and accurate modelling of the set of environments.

All trained people have mental models and behavioural procedures which support their work, and they view their problems in the light of the understandings given by these models.

For example, a physician in making a diagnosis, will call to mind mental models of the human body, and of its parts and systems, and models of the malfunctions to which the body is liable. The problem is first defined by the symptoms described by the patient. The doctor endeavours to match the symptoms with the known symptoms of the various ailments, as given by the models. Where possible matches are found behavioural routines are operated to test for other confirmatory symptoms. The use of stethoscopes is a behaviour long associated with doctors. This is the problem investigation stage, which may proceed through a set of tests to eliminate all but the real cause. The model of the real problem, as learned in medical training, specifies those behaviours available to the physician to assist in the cure of his patient.

Problems are recognised as such because they violate the expectations of the intellect. The understanding either allows an event of experience as a normal type requiring a selection from a predetermined range of behaviours, both mental and physical, or it disallows the event as non-processable intellectually. The inbuilt model of reality is then incapable of predicting the origins and consequences of the event of experience. The nature of the problem is determined by the individual's subjective philosophical understanding, and constitutes a puzzle or counter-instance to the model of reality on which that philosophical understanding is based. The recognition of problems is related to the degree of sophistication of the model of reality. The more advanced intellect sees a greater variety of problems of greater complexity.

When models of reality fail there is a need for judgment regarding the nature of the cause. The model is in some way inadequate to its
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purpose. The problem may be minor and may be overcome by a modification of the model. On the other hand, a major change may have occurred in the environment making the model of reality and the understanding that explains it, obsolete. If problems must be solved, the individual's understanding of what constitutes a problem solving process must be invoked and applied.

The Understanding is formed by Problem solving

All knowledge disciplines are dependent for new knowledge on advances in subjective knowledge. All theorists and research workers are faced with problems in their work, and they must solve these problems correctly. This is true whether the knowledge worker is a philosopher, theologian, or scientist. The problems are recognised as such in light of the models of the field of knowledge. A worker with no models of the field of study is not qualified to engage in knowledge development.

For example, a linguist working on the problems of language, will have, as a minimum, models of the structures and application rules for one or more general purpose languages. In addition, he will have models of the various problems under investigation. Typically, if the problem is how languages are learned, the investigator will have a number of case studies, each modelling a particular state of affairs in the field of language-learning. The task is then to reduce the study models to one general model which explains the problem. This is achieved through the application of a problem solving method.

Problems are solved every day by everybody. Most problem solving is intuitive and informal but this does not prevent successful solutions. In important and complex matters the individual will attempt to structure the problem as best he can, as a basis for rational working. Problem investigation and analysis involves behaviour aimed at the better understanding of the problem as the precursor to problem solution and the determination of the best course of action. Better understanding follows from a more detailed model of the problem.

The areas where the problem of formal problem solving can be studied are science and technology, education and business. A survey of these areas will show that failures to reach correct solutions may be ascribed to errors like not understanding the reality in which the problem reveals itself, trying to solve the wrong problem, trying to solve a problem that was not properly understood, making assumptions which are not valid, and failing to test intermediate conclusions as well as end solutions. For example, a failure to understand the realities of the stock market may be

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the cause of financial losses which are seen as a problem. Ignorance of true reality implies that problem solving is carried out in a universe of illusions and the resulting “solutions” will have unpredictable consequences in the real world. A valid problem solving method will require procedures that will effectively prevent these errors. A valid problem solving method gives true solutions to real problems.

There is a problem solving method which, if carefully applied, will always give true solutions to the problems of the intellect. This method is based on the investigation of the problem, the achievement of problem understanding, and the requisitioning of the solution. The process of development of understanding commences with the real problems of the field of study and ends with the production of the solution in the form of an understanding, the formula being:

PROBLEM...> PROBLEM-SOLVING METHOD...> SOLUTION

A complete and correct understanding of the problem is necessary to correct problem solving. This is achieved by careful execution of the problem solving method. The solution of problems involves a learning process in which the investigator's understanding of the problem is continually widened and deepened. New ideas emerge in the individual intellect as a result of the probing of the problem, and the consideration of the experiences that follow. Problem-Solution theory shows how a problem is structured and carried to a solution, which is new understanding. The omission of any stage of the problem investigation reduces the problem solver's ability to understand the problem. If all the stages are omitted the problem-solver can only resort to that pseudo problem-solving process usually associated with armchair philosophy, opinion and other forms of non-factual speculation.

The result of the problem solving process is both an understanding of the problem solution and a new or modified model of reality. Better understandings are achieved through better models and the continual need to improve understanding results in increasing depth of environmental modelling. Models are subject to continual improvement in interaction with the flow of experience. Problems lie outside the horizon of understanding given by the existing set of models of reality and the aim of the intellect is to solve them and to assimilate their solutions into an existing more general model, or failing that, to include the new problem solution as an addition to the set or library of particular understandings. The set of understandings available to the intellect develops in range and power with each correct solution to problems of experience.
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The problem solving method is also the self-programming method and produces those procedures which are executed as intellectual and physical behaviour. These procedures form behavioural programs which are based on models of reality. The solution to a real problem, based on a model of reality and amounting to an executable procedure or program, is called an understanding. As an understanding it is annexed to the database of understandings which is the intellect.
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CHAPTER THREE

THE PROBLEM SOLVING METHOD

The intellect solves problems and, in thereby gaining knowledge, extends its power to deal with experience. There is a valid method for the solving of problems, which, if it is applied rigorously, will result in the development of knowledge. The problems of objective knowledge are solved at the subjective level and the problem solving method discussed here is applicable to both subjective and objective problem solving.

Problems should be distinguished from puzzles, as defined by Thomas Kuhn. The general solution model for a puzzle is already known. For example, the multiplication of 9975 x 93 is a puzzle for most individuals since they already know how to solve it. However, the multiplication would constitute a problem for an individual who has not learned a multiplication method.

Education allows the individual to move directly from the understanding of the problem to the understanding of the solution, but the problem must always be understood first. All knowledge is produced, in the first instance, by the problem solving method.

The Solving of Problems

The method for solving problems consists of a number of stages which are:-
* Problem Determination:
  Problem detection
  Problem identification
* Problem Understanding:
  Problem investigation
  Problem analysis
  Problem definition
* Solution Formation:
  Solution specification
  Solution creation
  Solution recognition
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In the real world the individual is rarely conscious of passing through specific stages of problem solving. However, no rational individual would consider himself as being in a position to attempt a solution without first being assured that his understanding of the problem was correct and complete. Each stage of the problem solving method is necessary to the full understanding of the problem.

The Stages of the Problem-solving Method

Problem detection

At some point an individual becomes aware of the possible existence of a problem. Generally some understanding is being violated. The awareness that a problem may exist may start simply as a feeling that something is wrong. Scanning of the events of experience may detect signals indicating problems. For example a bank employee may notice unusual customer credit card account activity. This may be perfectly legitimate but enquiries would need to be made to ensure that the credit card was not being misused. The outcome of the problem detection stage is confirmation that a problem exists.

Problem Identification

The awareness of the existence of a possible problem or problems does not necessarily include the ability to isolate the correct problem. The right problem needs to be identified. A prerequisite for identifying problems is a model or understanding of the overall situation in which the problem can reveal itself. A problem is only a problem when it runs counter to our expectations as given in our model of reality. Without such a model it is impossible to recognise the occurrence or nature of a problem. At the subjective level the model is supplied by the intellect. The intellect either understands the event of experience or it does not. Where failure to understand occurs a problem exists.

For example, the awareness that a patient has a high temperature does not identify the problem, but is only a symptom or signal of the problem. Two understandings are necessary here; the first to recognise the symptom as indicating a possible problem, and the second to tie the symptom to its cause. The first understanding is a common one; the second may require medical training. Medical knowledge supplies models of reality from which a diagnosis may be possible. Even for trained people identifying the real problem may require an investigation. The first attempts to identify the problem may all be
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wrong. Even the final identification of the problem may be incorrect. People are often aware of problems without being able to say exactly what the problem is, and a problem may stand unidentified indefinitely.

It is a form of error to treat a symptom of a problem as the real problem. In a business situation treating falling sales volumes, or rising production costs as problems may fail to get to an effective solution if the real problem is obsolescent products or out-of-date production facilities. Problem situations may be over-determined; this is to say, there is more than one factor or problem causing the problem situation. Solving only one of a set of contributory problems, if that is possible, rarely produces a valid or satisfactory solution.

The Process of Understanding the Problem

Once the problem has been correctly identified the next stage is to understand it. This involves the stages of investigation, analysis, and definition.

Problem Investigation

The task of understanding the problem involves finding out everything about the problem that is relevant to its appearance in experience. The investigation of problems involves a learning process in which the investigator's understanding of the problem is continually expanded and deepened.

The nature of the problem determines the investigation methods. In general, the scientific approach which involves breaking the problem down into manageable units is usually fruitful, providing the problem can later be reconstituted through a method of integration. For example, an investigation of an ailing commercial undertaking may be broken down into investigations of the various departments of the company, all of which may show symptoms of problems. An attempt to solve the many departmental problems would be the wrong approach if the true problem is the bad management of the enterprise as a whole.
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Problem Analysis

The factors that have a bearing on the problem must be understood in a way relevant to the purpose and objectives being pursued so that a valid structured problem definition may be formed in the understanding. The problem analysis results from insights formed during the investigation, although not necessarily prompted by any particular part of the investigation. It is aided by previous experience in dealing with similar problems. The problem structure may be logical, mathematical, or both. This model explains the occurrence of the problem in experience. For example, a mechanical problem may be traced to metal fatigue. The problem analysis shows how this fatigue occurs after a period of use.

Problem Definition

In the problem definition the problem solver sets out his understanding of the problem based on his problem model, and supported by the evidences obtained in the problem investigation. If this definition is correct the problem is now completely understood. The writing of the problem definition has the twin advantages of improving the precision of the problem solver's understanding, and improving the accuracy of the problem definition through the opportunity it gives for criticism.

The Solution Stage

In the solution stage the problem understanding is replaced by the solution understanding. The descriptions of the entities and processes involved in the problem situation have been produced by the problem investigation and definition phase. The problem is understood in terms of the old understanding of reality, but cannot be assimilated into that model. This follows from the definition of a problem. The requirement now is to understand them in a way that overcomes the problem. A new model of reality is therefore required to explain both the old understanding and the problem. This understanding is supplied by the solution.

Solution Specification

From the problem definition the problem-solver moves to a position of forming an understanding of what would count as a solution to the problem. The problem definition is a statement of fact and the solution specification is a question based on that statement. The solution specification sets out that which one wants to know, and is the bridge between the understanding of the problem and the solution. It
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establishes the criteria by which the solution is evaluated. Without the solution specification it is impossible to say if the solution answers the problem.

The meanings of the problem definition and the solution specification, as stages in the solution of a problem, are determined solely by the problem-solver's intellect. The solution specification is formed by the individual in furthering his purposes and constitutes a definition of an objective which is the achievement of the solution. The solution specification therefore imports the philosophy of the individual into the problem solving process. Different philosophies, based on opinions and ideologies, will interpret the same problem definition in different ways and will ask different questions.

The problem of social poverty can be well-defined by researchers and generally agreed, but the solution specification and solution may be very different for different individuals.

As the intellect is commonly inadequate, and to some degree confused and erroneous, the interpretation of the specification may be less than perfect. For example, all solution specifications in which the nature of Time is of the essence are not likely to be absolutely correct. The nature of Time is one of the least understood areas of physics. Solution specifications which employ the term "God", where that term has a substantial meaning within the intellect, are likely to result in an answer, all other things being equal. Where no meaning of any worth can be attached to the term within the intellect, the solution, if there is one, is likely to be confusing and even erroneous. The individual has to know what he is talking about.

Given that the solution specification is valid a solution will be returned.

The Relationship of Solution Specification to Solution

A specification is not a definition. The solution specification describes the conditions that the new understanding must satisfy. It may be compared to a specification of a new house which is no more that a page of requirements, where the definition is the set of plans produced by an architect.

The relationship between the meaning of the specification and the meaning of the solution is exact in the same way that an arithmetic equation is exact. The solution is precisely limited by the specification. On the other hand, a carefully considered solution specification may be almost open-ended in its knowledge requirements and may produce a solution which exceeds the boundaries of the problem. A solution
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specification which grossly exceeds the problem definition may produce a solution which cannot be tied back to the reality of known problems of experience, and being untestable against a known problem, may have an unknown truth status.

If the solution specification is badly drawn up so that it cannot be reduced to a valid meaning or understanding, no solution will follow. This is often the explanation for prolonged struggles to solve particular problems. As an example, the solution specification might require a solution to a problem of subnuclear physics, in terms of Newtonian mechanical concepts. The requirement could not be met and the result is that the transformation of the solution specification to a solution is aborted without a result. Generally failures to reach solutions are either the consequence of inadequate understandings of elements of the problem, or the insistence of the researcher that the solution must conform to some existing theory or ideological understanding when that is impossible.

The Emergence of the Solution

The solutions to problems are found within the intellect at some time subsequent to the process of problem solving. The appearance of a solution is an event of experience and is followed by the understanding of that solution. The act of understanding the solution happens when an individual says, "now I understand". The “I” grasps and assents to the new understanding. The understanding is annexed as an improvement to, or extension of, the intellect.

Problems may be particular or general, and solutions are likewise specific or generic. General solutions may be in the form of prototypes. An arithmetic problem requires a specific solution. The law governing the behaviour of bodies subjected to gravitational force is a prototypical solution in which certain variables are unknown. For the solution to be useful it must be related to a specific problem of a real body existing in physical reality by a set of informational data.

All class constructions are prototypical and are made specific by information. The term “body” may be applied to wide variety of objects. Prototypes may be related to virtual realities. A reality in which there are no impressing forces is virtual, and represents a rational construction for a purpose. An unspecified body free of impressed forces is a prototype existing in a virtual reality.
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A representative problem taken together with a prototypical solution is a model solution and amounts to a paradigm in Kuhnian terminology. Paradigms are not separated from real world states of affairs. As described by Kuhn, scientists articulate paradigms into other problem areas by abstracting the paradigm’s prototypical model and reapplying it to the new problem.

Prototypical solutions give the intellect the power to solve a range of problems. The problem solving method defined above is, itself, a prototypical solution.

The new solution or understanding, being new, is different from any understanding already incorporated into the problem understanding or solution specification. The new solution imports a new model of reality into the intellect. Where the new model replaces an older one the difference may be described in Kuhnian terms as a transformation of reality, where such transformations may be minor as well as major. The model of reality which was the basis of the problem understanding has changed in a manner that the problem no longer exists in its original form. The intellect which has annexed the new understanding may think of the problem area in an altogether different way.

The Expert Understanding

Once the problem solution method has been operated the problem-solver may then understand the general problem area or field of study. He may then ask supplementary questions, based on his understanding of the field. There may be no need to research the problem field over again even when new problems arise.

The formula then becomes
NEW PROBLEM...> NEW SOLUTION SPECIFICATION...> EXTENDED SOLUTION
where each new solution broadens and deepens the understanding of the expert in that field.

For example, a problem in the field of Economics may be new but its origins and probable consequences may be determined from an existing understanding of the field. The expert may correctly describe it and prescribe relevant and probably effective behaviours to deal with it without further empirical study. The problem in this case is, in Kuhnian terms, a puzzle, for which a prototypical solution or paradigm already exists in the intellect of the problem solver.
Specialists in any field who find they can arrive at solutions to problems without the necessity of applying any formal problem solving method may tend to think that they do not use a method, and that, therefore, methods are unnecessary. An attempt to solve a problem in an unfamiliar field would quickly prove the necessity of method.

**Intuitive Problem solving**

The stages of problem solving do not require consciously formal execution. Problems may be solved at the intuitive level by passing through the same stages as above. These stages may be seen as puzzlement, problem recognition, growth of problem understanding, questioning, and then solution. Intuitive problem solving is a common human activity applied to the myriad of problems that human beings overcome in the course of their lives. It is the method of problem solving used by infants in the first stages of building their intellects and it is simple and easy to apply. But problems which are correctly solved are always solved by the methodology defined above, whether formal or intuitive.

Complex problems may be solved either intuitively or formally, but generally the more complex the problem the more the formal method is likely to be successful compared with the intuitive. The solutions to the problems of objective knowledge have to face criticism and a record of the progression from problem identification through to solution is valuable evidence of truth. Problems in the field of knowledge should always be solved formally.

The problem solving method given above is the only road to new knowledge. This has always been the case for human knowledge and yet there is ample evidence of error and confusion in intellects and in the culture. The explanation is that the method has either been ignored or carelessly or cynically applied. The result is the generation of opinions and ideologies which masquerade as knowledge.

**The Problem Solving Method and the Scientific Method**

Objective knowledge is a development of subjective knowledge. In a situation where there are competing candidates for the status of objective knowledge some procedure must exist to determine the best theory. This procedure is science. Science lays down conditions that must be satisfied by all acceptable candidates for objective knowledge status. There is a relationship between the general problem solving method and the scientific method such that the latter is a more
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rigorously enforced case of the general method. Science is, therefore, the objective equivalent of the subjective way of reaching knowledge.

The Source of Problem Solutions

The problem definition and solution specification are transformed by the problem solving method into the new understanding or solution. The new solution is found in the intellect at some time subsequent to the attempt to solve the problem. The description of the psychological process in which the new understanding is created, in response to its requisition in the form of the solution specification, is given in the next section.
PART TWO

THE THEORY OF THE INTELLECT

The intellect is the compendium of all understandings achieved by the individual in his or her lifetime. Experience is the basis of the understanding and the intellect is the sum total of everything that has been learned by the individual from experience.

In this part the nature of the intellect and its workings are explored. Knowledge of the functioning of the intellect aids the understanding of the problem solving process. The intellect drives all mental and physical behaviour and it follows that observable behaviour is the indicator of the quality of the intellect. Intellectual quality is of social as well as personal importance. How an individual behaves in the community is a consequence of his intellectual achievement.

The Study of Intellects

The understanding of the process of knowledge acquisition must account for the formation and functioning of intellects and the psychological processes by which intellects acquire new understandings. The investigation of intellects has to face the problem of the difficulty of examining the arrangements of individual minds when introspection is ruled out as a method of procedure. In a behaviourist strategy one can start only with the facts of experience and behaviour. Following the approach of the cognitive psychologists the form and functions of cognitive constructs may be defined and conclusions may be drawn to support the thesis that subjective knowledge can be investigated by the analysis of behaviour, and can be explained as resulting from the processing of experience.
CHAPTER ONE

THE ACCOUNT OF THE INTELLECT

Human behaviour may be explained by the existence of an intellect which comprises a set of understandings. The intellect and the understanding are the basic theoretical constructs. Understandings are formed as the result of personal experience, and may be investigated through the problem solving method.

The formula is:
PROBLEM OF EXPERIENCE...> UNDERSTANDING...> BEHAVIOUR
The processing of the problems of experience gives solutions which are understandings, based on which intellectual and physical behaviours may be defined and selected. Understanding, as a problem solution, is therefore the cognitive construct which relates experience and behaviour.

The intellect is formed within the individual, starting from a state of virtually no understanding, and is self-created in response to experience. The intellect develops in more or less the same way for all individuals until the intellect achieves maturity, which is defined as self-management.

The intellect meets the individual's need to understand and act in the world, by giving the ability to explain past experience, deal with current experience, and to predict future experience in some limited way. A competent intellect is one which produces satisfaction and happiness in the individual. An incompetent intellect leads to confusion, frustration and self-defeat. Problems are the signal that the intellect is inadequate.

The self-managing intellect organises its behaviour to achieve its own purposes, and diversity of purposes causes intellectual differences. A typical purpose of the intellect is the improvement of its own ability to deal with experience by extending its understanding of reality. This requires the seeking of knowledge. The development of the mature intellect is no longer subject to the chance of experience but is under the control of the intellect itself. The fully developed intellect can determine its future by choosing the problems it solves and thereby changing both itself and its reality in chosen ways.

The Development of the New Intellect
The Theory of The Intellect

The theory of intellectual development explains how intellects develop from virtually nothing to a level of self-management and self-creation. The intellect develops through the extension and improvement of its constituent understandings and models of reality in response to experience. Experience may be in its preprocessed form of education.

**How the Intellect forms from nothing.**

In the world of computers there is a process called Booting which takes place every time a computer is restarted. In the start-up process the computer is transformed from an inactive state to a fully operating system. The problem of achieving operational status in computers is solved quite simply since the computer on restart will always bring into operation the software that gives it the required functionality. The human intellect has no such preprogrammed path into operational status.

The initial state of the human being is that of an intelligent self with no understanding at all. The intelligent self, at birth, is capable of distinguishing simple differences and remembering them. The intellect is founded on this capability. The working hypothesis that explains the ability to make distinctions at birth relies upon the baby's experience in the womb. The unborn infant can sense the mother's heartbeat and becomes familiar with the pattern of beat- no beat, event - no event, yes - no. This simple ability is enough to account for a primitive understanding structured on binary logic. It is possible that in its prenatal state the infant can distinguish combinations of events, giving event AND event, event AND NOT event, and event OR event, thus creating the rudiments of Boolean logic. This hypothesis postulates that the child enters the world with an intellect equipped with sufficient logical ability in the form of understandings, to make at least simple distinctions.

**The New Intellect and Experience**

The newborn infant is confronted by a reality in which there are few distinctions. He is aware of noise, light, and bodily feeling to some limited extent, and little more. The infant analyses the flow of experience and makes distinctions based on those experiences. He begins to create an ideal or mental model of the world that is differentiated. This is the beginning of the Personal Environment Model.
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which in successively modified forms remains the primary reality of the individual for life.

The first distinction is that the "I" is differentiated from the "not-I". All "I" experiences and their understandings define "me". All "not-I" experiences and their understandings are distinct from, and related to "me". Once that distinction is made it remains in the intellect throughout life as the fundamental form of organisation of the intellect and of reality.

External reality is broken down by sets of distinctions into environments, objects, and actions. Rooms, garden, and the neighbourhood take shape as different, but linked, environments which have space as the common factor. The form of linking is directional. Objects such as people, animals, chairs, tables, and toys have existences in space, and are separate from each other. They can be thought about as distinct from all other objects and as possessing characteristics in the form of distinctions. Actions, such as smiles, laughter, and speech are distinguished.

The infant learns that common distinction sets have names. An object is called a man. Another object is also called a man. He must see that this man is more like that man than either of them are like a toy, or animal. He sees that the man is one of a class of like things. He must create this, and every other class in his intellect as part of his learning of language. The naming of things is a creative act of the intellect. These class distinctions are understandings and language is a set of named understandings based on common classifications. Thus, identifying an object as a man is a process of recognition in which the object's distinctive characteristics are compared with standard sets of distinctions until a matching set is found.

The understanding of the class of “Men” is built up over some months or years to allow for men of all colours, sizes, and ages but to exclude women, children, and so on. A young child may make mistakes based on incomplete distinction sets. For example, if a chow dog has never previously been seen it may be classified as a lion, based on superficial similarities of colour, shape, mane, and size.

The child thinks in terms of classes of things and everything is described in terms of classes. Classes are rational constructions of the intellect and have no equivalent objects in cosmic reality. They are
The Theory of The Intellect

models constructed out of experience. These models are the normal models of understanding.

Things themselves do not create their class understandings in the intellect, and the understanding is not a copy of some other understanding, as a computer program may be a copy of another. The individual creates his own understanding and does it well or poorly.

Language is the basic form of organisation of the intellect. The child's intellectual processes become ordered from the time it acquires a working knowledge of a language. Children construct their understandings of how reality is, based on models in the form of distinction sets which are related to experience as observed, and which are named for communication purposes. Using their models of reality children become capable of thinking about and talking about places, objects, and actions not present to their senses.

According to Jean Piaget it is a mistake to suppose that a child acquires the notion of number and other mathematical concepts just from teaching. On the contrary he develops them himself, independently and spontaneously. He must first understand the problem and then the solution. The solution becomes meaningful only in the light of the problem understanding. Each understanding, as a model or distinction set, must be created within the child's intellect from the materials of experience given by the teacher. Mathematics is essentially constructed, or re-invented, by the child himself.

The child is engaging in a continuous process of problem solving in which every new event of experience constitutes a new problem. Problems must be structured by distinctions and solved. The problem solving method as such, cannot be complicated. It follows that a simple interest in the problem and a desire to understand is sufficient to produce an understanding. Further experience tests and perhaps modifies that understanding. The child develops from its own inner resources, not only basic logic, language and mathematics, but everything it understands. Real comprehension of an understanding or theory implies the reinvention of this understanding or theory by the subject. The intellect is the child's own creation.
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The Study of Cognitive Development.

Piaget has developed a theory to explain the development of understanding in children from birth to maturity. There are stages of development through which all children must pass in a definite order between birth and adulthood. In the same way that physical developments proceed through successive stages, so intellectual achievements tend to follow one another in a predictable order, the achievements of each stage preparing the ground for the next one.

The successive stages of development are characterised by an increasingly detailed and refined understanding of "reality". The child's intellect acquires new models of reality, and models are expanded to include more possibilities. More is understood, in the form of enhanced distinction sets, about all possibilities. The range and depth of modelling improves with each stage.

According to Piaget, the ability to coordinate means and ends marks the beginning of intelligent activity. The child begins to evolve a subjective philosophy by relating his self-understanding to his understanding of reality and forming purposes. The capacity to represent actions mentally results in intentional, goal-directed behaviour. The child's behaviour indicates that he understands the problem and its solution. The child is able to select behaviours which improve its chances of success. At this stage the child has the capacity to understand the situation based on a model of reality which has developed to the stage of being useful.

The model of reality acquires a future state and the individual is capable, by ten or eleven years of age, of pursuing goals some months distant in time. At sixteen the individual is able to construct models of possible future realities and to consider their practicability and desirability. This is a process whereby the individual develops intellectual resources which are not only adapted to the demands of reality in the form of experience but can influence and shape future states of reality.

The development of individual intellects has as its aim the improvement of the ability of the individual to function in the world. Intellectual development is evolution towards what the individual needs to know to achieve self-management and self-responsibility. The newly mature intellect can formulate those purposes and objectives which will support its independent existence within the culture, and it has the necessary understandings to select and execute those behaviours.
which will achieve those objectives. The individual will understand how to maintain himself and pursue his interests, and he will also understand how to avoid dangers and misfortunes generally.

In this analysis of intellectual development it is possible to see the structure of the intellect taking shape. On the simple logic that distinguishes "this" from "that" the intellect learns the rudiments of his sensible environment. For example, the preschool child develops understandings of time, space, physical objects, the self as a body, other people as bodies, language, and conventional behavioural procedures as separate modules based on a set of models of reality.

**Education and the Intellect**

The individual intellect develops within the culture. An intellect, in the course of its development, absorbs a large amount of cultural wisdom. The problems and solutions of the culture provide the environment which shapes the individual intellect. The experience of the individual as he lives his life and copes with his problems is always related to the culture. An individual who becomes separated from his culture is helpless, at least until he can acquire the rudiments of another culture.

Knowledge, which is itself the product of expert understandings, accelerates and controls the development of the growing intellect. It increases the power of the developing intellect to cope with extended environments. It provides the student intellect with intellectual structures as well as knowledge content, and also provides the immature intellect with criteria for judging what is and is not knowledge.

The process of learning, and the gaining of new understandings, proceeds from a basic or primitive level to the more advanced and there cannot be omissions of significant understandings from the progression. The intellect has a definite level of capability and power at any stage of its development. Students who have not completed their basic education may be disqualified from undertaking more advanced education because the strata of understanding necessary to support the advanced course are not present.

Educationalists understand this order of intellectual development and plan courses of study which fit the current need. Within the courses the order of lessons is similarly determined. In preparing his lessons the teacher is doing what a computer programmer does. The programmer translates the program specification into a code that the computer can
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process. In the teaching situation the lesson material, suitably communicated by the teacher, takes the form, within the student intellect, of a program to control the internal processing of specific problems.

The study of Maths requires the understanding of a Language. An understanding of algebra, or geometry, requires a prior understanding of arithmetic. The understanding of numbers precedes any understanding of even the simple operations of arithmetic. Arithmetic however, does not require the prior understanding of algebra or geometry. This order of simple to advanced understandings, in the case of Maths, can be found in any good textbook on mathematics since it coincides with the best order of presentation of the material.

If a physics textbook is examined it will quickly become clear that a good understanding of all branches of mathematics is necessary before any significant progress can be made in the understanding of physics. The successive layers of understanding and knowledge required to enable the study of physical science can be established by simple analysis of the required textbooks. In general, the layers or strata of knowledge need the presence of the antecedent strata beneath them in order to be properly understood. Other disciplines and technologies rest in a like manner on an understanding of physics.

The presence of levels of understanding is transparent to the intellect. In Physics, access to and selection of mathematical understandings is possible without consciously crossing intellectual boundaries. In History, access to and selection of geographical understandings is similarly possible. The whole set of understandings is available to the solution of any problem.

The structure of understandings based on formal learning is fairly easily defined and this structure is built on the basic understandings gained in infancy. Knowledge of the structure and content of the immature intellect can therefore be predicted, and the theory can be compared with reality by the normal tests of education.

Learning Problems
The Theory of The Intellect

The human intellect differs from the computer in having an independent will, and being subject to emotional influences. The intellect cannot be divorced from the emotions in the development of the young. J. Bowlby, in "How Personalities Develop", claims that deprivation of love results in a damaged and alienated personality, and these alienated individuals cannot, in later life, comprehend the reality of love. Fear and not love forms the individual's basic attitude to experience. Jon Holt, in "Why Children Fail" claims that individuals who fail to make the full developmental progression are often insecure and afraid. Bad intellectual and emotional development results in damaged personalities.

The disinclination to study, resulting from an attitude of defeat and apathy, obstructs the teaching process and produces intellects unprepared for more advanced learning. In this situation emotional causes are to be understood as understandings which are not capable of being expressed verbally by the individual. They may be compared to analogue data, where expressible understandings are digital. Lacking form, they are not analysable by the individual and are not therefore subject to the understanding of truth. This makes them irrational and beyond modification by argument. The understanding of his emotions by the individual provides a means of control but not of cure. For this reason, the protection of the child's emotional being is a first priority if normal intellectual development is to be achieved.

The conclusions of the study are that the individual creates his or her own intellect, the intellect has a definite structure and content, this structure and content are necessary to correct development, and direction and the rate of development are more or less common for all immature individuals within Western culture. The developing intellect may be mapped fairly precisely and the minimum standard of intellectual development of people in general as they reach maturity may be defined.

The Intellectual Development of Mature Individuals

The intellect is an operating system based on a set of models of the various environments apparent to the individual and it gives the power to deal with those environments. The intellect should, ideally, emerge from its immature phase, adequate in every way to cope with the adult cultural environment.

The fully developed intellect can determine its future by choosing the problems it solves and thereby changing its reality in chosen ways. The
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intellectual philosophy sees itself, as a mature individual, to be a self-managing entity, responsible for setting and pursuing its own objectives.

The intellect management function includes responsibility for its own development through learning, and ensuring that intellectual activities are conducted on the basis of truth and knowledge. The intellect in its activities calls upon understandings to instigate behaviours, intellectual and physical. Where those behaviours don't exist, or are inappropriate, the intellect calls other routines to set problem solving behaviours in process. The problems of the future require special understandings based on predictive models of reality.

The life-situation of the mature individual is the consequence of his set of understandings and models of reality, and the behaviours that these require, and it changes as these factors change. Social limitations constraining the individual such as social rank are no longer effective in Western culture. Success and failure are the result of intellectual quality. The degree of success the individual has in dealing with experience is founded on the faithfulness of his model of reality to reality. Success is measured by the degree of achievement of the individual's purposes. In business terms, for example, if the individual thoroughly understands his reality, which is his market, and pursues business objectives consistent with the market realities, he will be successful.

Reality is rarely static and changes create new problems and opportunities. A progressive and efficient intellect produces a continual flow of new insights and understandings in the direction of the interests being pursued by the individual. The failure to achieve individual aims is always accompanied by the presence of anomalies and problems which indicate failure of understanding and an incompetent intellect. In practice all individual intellects lie somewhere on the scale between competency and incompetency. Success in one sphere of activity, such as business or politics, can often go together with failure in other areas such as family relationships. An intellect broadly based on experience of all types has the power to understand and act in all areas of human experience.
CHAPTER TWO

THE ACCOUNT OF UNDERSTANDINGS

The understanding is created, or modified, as the result of the solving of a problem of experience. Once a particular problem has been solved within an intellect the means to deal with repetitions of the same problem exist within that intellect as automatically invoked routines in the form of understandings. The set of understandings is equivalent to the library of programs maintained within a computer and it gives the functionality required by individuals to operate in the world.

The subjective understanding entity may be studied through expressions of this understanding. These expressions are a form of behaviour and the studies conform to behaviourist theory.

The Relationship of Understandings to Reality

The understanding is a representation of reality as experienced, and the set of understandings model the world as experienced by the individual. The understanding as a model of reality, provides the database from which behavioural, including verbal, expressions of understanding may be drawn. The understanding is therefore both a representation of reality in the form of one or more models and a procedure to be executed.

The understanding follows from the problem of experience and the operation of the problem solving method. The solution, as understanding, is normally a model of reality, an explanation of that model and a behavioural set which dynamically transforms a recurrence of the problem state into the solution state. The explanation defines what the model means. The conscious recognition of a known problem automatically leads to the consciousness of its solution in the form of the understanding of the problem and its solution and the mental and physical behaviour necessary to deal with it purposefully.

For example, the event of experience of a problem in the form of an arithmetic equation is followed almost immediately by the recognition of its meaning and the understanding of how to solve it. The purpose to solve the equation sets in process a behavioural sequence consisting of mental operations and physical actions.
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The Procedural Structure of Understandings

Understandings have a procedure by which the solution is achieved from the problem. This procedure is expressed as mental and physical behaviour where mental behaviour includes structured thinking and physical behaviour includes, amongst other forms, speech. The procedure recognises and conforms to the processes of the model and the quality of the model determines the quality of the procedural output. For example, a poor understanding of the operation of a motor vehicle restricts the behavioural ability of the individual to diagnose faults and to perform repairs.

The understanding is an item of processive logic. A computer program is also an item of processive logic and it is the program's logic that determines the processing of the computer. It is the logic of understanding that determines the selection and execution of human behaviour. This logic is always subject to intellectual choice and judgment. The summing of a series of five digit numbers may be carried out manually using the columnar method. If an electronic calculator is available, that may be selected instead and a different set of mental and physical actions will be performed.

Structured thinking processes are possible because the understanding or logical entity is structured. These thinking processes are behaviour and are governed by the structure and meaning of the model being expressed. For example, the ability to solve arithmetic problems is based on a set of models which define number systems, and the several arithmetic operations. The individual, when multiplying positive and negative numbers, will mentally invoke the models for determining the sign of the product. The capability of the individual to think constructively and deeply depends on the quality of the philosophical models of reality which synthesise the total experience of that individual.

The bounds of the logical entity of understanding are determined by the problems of experience that it addresses, and the purpose of the individual in solving those problems. The development of understandings progresses from small beginnings. Understandings are not necessarily complete at any phase of their existence and may be augmented by further experience. The understanding is therefore built up in stages, earlier forms of the understanding being modified to annex new learning. This progression occurs in all learning.
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A child's understanding of physics may be limited to a small number of mechanical problem solutions. The professional physicist's understanding comprehends many more problem solutions, but includes the child's understanding in some form.

The understanding has parts and these parts may be accessed, changed, and deleted without the necessity of deleting and replacing the whole understanding. Extra steps or subroutines may be added to an already known internal procedure or program and the modification may be brought into operation at the desired point in the execution of that procedure.

The physical behaviour of an individual may be modified, for example, by requiring that individual to notify the fact verbally when a divisor in any calculation within a series is zero. The individual must modify his mental behaviour to monitor the procedure by testing at appropriate points for the presence of the designated condition and to call into operation the special physical behaviour when the condition is satisfied. Internal processing of problem solution procedures appears to differ from computer processing only in the fact that the conscious intellect can make modifications in real time.

Procedures may be conscious or subconscious. When one is learning to drive a car, all behaviours are governed by conscious thought. Since thinking takes time, and the time available for behavioural responses to sensory information is limited, mental concentration on driving is intense. With practice, driving behaviours become automatic and may be relegated to the subconscious. Most repetitive behaviours are initiated and controlled outside the conscious intellect. Conscious control may be re-established by choice, or may be forced by the inability of the automatic procedures to handle emergencies or other non-standard states of affairs.

When intellectual processing fails, and psychological processes must be invoked, processing time increases significantly, and time constraints may force the intellect into best guessing or even panic.

Short-circuiting the conscious thought mechanism out of behavioural procedures improves response times and efficiency. The effect of conscious interference in automatic procedures may be seen in, for example, stuttering where the individual is consciously monitoring and attempting to modify normally non-conscious vocalisation of thought. In trying to execute two procedures, vocalisation and monitoring, concurrently the stutterer is overloading the resources in relation to...
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time, and the predicament causes anxiety. Emotions such as fear and anxiety disintegrate intellectual processes and waste resources.

The Understanding as a Model of Reality

The set of understandings function as models of reality which, among other things, define the set of possibilities that may exist in the world of the individual and the relations between these possibilities. The understanding or meaning is integral with the model.

The Idea of Models

A model can be any entity which has some or all of the characteristics of another entity or state of affairs, taken as reality. Models are formed in the course of problem solving and are made for a purpose, or purposes. Wittgenstein described the Paris traffic accident model which defined and communicated the facts of road accidents. Solar system models and molecule structure models show students the essential features of the real world entities. Wind tunnel models show scientists how real world objects will behave at high speeds.

Some models are not physical. Mathematical models which are used by scientists to analyse and predict, exist only as mathematical terms. System behaviour models which are used to analyse and predict conditions within particular systems, such as the electricity supply network, exist as mathematical and logical terms, usually within a computer program. Commonly used models may also be non-physical. People who use a public transport system are usually familiar with its characteristics. This understanding, and the model which supports it, is learned through experience and retained intellectually, and called up whenever the problem of travel by public transport occurs.

Static and Dynamic Models

The mental model may be static or dynamic. The dynamic nature of a model may be obtained by concatenating a series of static models. In a mental model of an internal combustion engine all the stages of fuel input, compression, ignition and gas expansion, and gas exhaustion can be visualised as occurring consecutively. The dynamic model may represent discrete change in the model over time, but it also may be visualised purely as a dynamic system. A car travelling along a road, or
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a moving pendulum are of this type. Mental models of reality take the dynamic nature of the reality into account.

The Structure of Models of Understanding

In all cases of understanding of perception, where the perception changes due to changes in viewpoint, light quality, and growth or deterioration, individuals can easily accommodate their understandings to the current state of affairs and see unities in the series of changes. In a simple case, a coin may be examined. As the coin is turned over it apparently changes shape. Starting as a circle it becomes oval, and then progressively flatter until it appears as a thin rectangle. This sequence is a series of views of the same object and all views are never seen simultaneously. Individuals are, nevertheless, able to integrate these views into one model, such that they are always able to recognise the object as a coin irrespective of the particular shape that they are currently viewing. They are quite capable of visualising a model of a coin within their intellects in which the coin is spinning, quickly or slowly. The individual, through his model, both understands the relationship between successive views and has the ability to explain the successive differences.

From this account it may be seen that such a model consists of
1. a description of the entity, process or state of affairs,
2. a predictive capability based on an observed regular process or behaviour and
3. an explanation which reflects a purpose or purposes

The description comprises the features of the coin that distinguish it from all other non-coin objects. The process consists in the changes of apparent shape as the viewpoint changes. There is an order involved in these changes which, broadly speaking, is circle - oval - rectangle - oval - circle. It is never any other sequence. This order enables the prediction of the next state in the sequence and of all states in the correct sequence. The explanation may, for example, reconcile the apparent changes in shape with the fact that no changes occur to the physical characteristics of the coin.

In problem solving, a state of affairs, not understood by the individual, is examined and analysed and a predictive model is built from the observations. The asking of a question, as the result of a purpose, produces the explanation which is understanding.
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For example, the experience of seeing the lid of a kettle moving leads to the examination of the kettle in its various states and the conclusion that the lid only moves when the water is boiling. The question of what power moves the lid leads to the understanding of steam power. The explanation for the phenomenon is therefore based on the understanding of the power of steam. Further questions may be asked based on the same general model. These inquiries may be concerned with the precise conditions for the occurrence of the phenomenon, in terms of steam pressure measurements.

Models and Realities

Understandings have a structure which defines:
1. The reality in which it exists
2. Its internal reality
3. The input or problem state
4. The output or solution state
5. The behavioural steps by which the problem is translated into the solution.

The reality in which the understanding exists is the understanding of the reality in which the problem of experience revealed itself. Its internal reality is given by one or more models of reality which are defined by the problem analysis. The input or problem state is that event of experience which triggers the execution of the understanding and the output state is that state of affairs required by the individual's purpose in solving the problem. The behavioural steps form an executable program consistent with the understanding of reality and the purpose being pursued.

Understandings therefore have models of their external and internal realities. The external model is specified in a preamble which points to that general segment of reality to which the understanding belongs. It's meaning is therefore given by that general model.

For example, the understanding of a physical object must be viewed from the general understanding of space and matter, whereas the understanding of a model of understanding must be comprehended from the perspectives of the intellect and the universe of ideas.

Not all understandings are linked to a more general understanding external to themselves. In these cases the understanding is free-floating and constitutes a compartment of the intellect. For example, an
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individual may have received a rudimentary religious education at
school. He may not subsequently be able to relate this understanding to
any other reality of his personal experience and it forms an independent
compartment within his intellect.
All intellectual compartments have unsecured, or dangling, external
interfaces and the psychological inability to follow a logical path
between compartments makes inter-compartmental processing
impossible.

The internal model of reality describes a particular natural subset of the
field of experience in such a way that rules may be derived. These rules
are predictive, and the ability to predict, to some extent, the processes of
reality constitutes, in part, the individual's understanding of it.

General solutions

An understanding is the solution to a problem or a set of problems of
the same type. A project to solve a class of problems must consider
elements of reality common to every problem and define the problem
set in terms of this generalised reality. The solution gives a model of the
field of understanding having a generalised and skeletonised form,
which may be classed as a prototype. The prototypical model leaves
specific distinctions, or variables, undetermined, to be decided in
particular circumstances by information. Information enables the
intellect to relate its prototypical models to specific real states of affairs.

For example the prototypical model of “man” will allow individuals
with a range of skin pigmentations but will disallow other abnormal
colours. No man is blue. Skin colour is a limited variable. Information
enables a particular man to be distinguished from the set of men by
determining all the variables.

An understanding, whether specific or prototypical, defines its external
and internal realities. Prototypes do not exist in the real or external
world of experience and therefore can exist only in a constructed ideal
or virtual reality. Virtual realities may be envisaged as skeletonised
versions of the real world states of affairs. They are defined by those
essential characteristics which are common to the set of real world
situations in which the forms, modelled by the prototype, occur. The
sea, unspecified and therefore virtual, is the background reality to ships
of all types, but not to castles. In effect, the virtual reality is a
prototypical model of the reality in which the object under examination
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occurs. As with all models, only those characteristics of reality relevant to the problem in solution are built into the prototype.

For example, Newton's picture of a physical reality in which a body can exist and not be subject to impressed forces, is virtual. The body, unspecified, is a prototype.

All understandings of languages are based on prototypes. The word “castle” is not specific and models all those characteristics which distinguish castles in general from not-castles. Prototypes model classes of entities or actions rather than specific cases.

It is information, either in the form of sensory data, or as a specified context, which realise the virtual. The word “castle” refers to any castle and no particular castle. The word in the context of “Windsor” fixes the understanding to the ground. The label “Windsor Castle” refers to a specific castle.

Predetermined behaviours are often based on virtual realities and prototypes.

For example, an individual who is qualified to drive a car on public roads cannot possibly have models of all the roads in the country but will have models of typical road features. These are models of intersections, T-junctions, curves in the road, and so on. These models do not refer to actual cases but represent all the relevant characteristics of these typical road situations. They are prototypes and exist in virtual realities. They are selected and reduced to understandings of actual roads in the reality of experience by sensory information. These prototypical models plus sensory data take intellectual form as puzzles which intellectual procedures reduce to solutions which are the understandings of the real roads. These then become the realities which govern driving behaviours.

People who drive on a particular road frequently, will remember every detail of that road. This intellectual record, if true, amounts to knowledge of the road. Knowledge of this type reduces intellectual puzzle solving and often permits automatic or semi-automatic behaviours. A driver who knows a road may do so while thinking of matters other than the conditions of the road.

Scientific knowledge is founded on the ability of the intellect to abstract models of the common elements of the problem reality and form prototype solutions. With this method, problem and solution situations may be generalised, either in their essential form as prototypes, or in
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their exemplary form as paradigms. Physical models are normally prototypical and mathematical. Cultural models are often based on paradigms.

Power and control

The problems perceived with reality give rise to models which attempt to emulate that reality. The more accurate the modelling, the more accurate will be the predictions based on that model. Valid explanations of sets of experiences, based on accurate models, constitute knowledge, and give rise to correct and effective behaviours, both mental and physical. Validity requires the correct application of the problem solving method.

Every true understanding is the consequence of the correct processing of the problems of experience and gives the power to solve specific problems. True understandings, which are knowledge, therefore enable the individual to achieve objectives in life through correct and therefore effective mental and physical behaviours, and from this power the capability for self-management. In general, the power of understandings is limited by the range of past experience. For this reason immature intellects are too limited to enable intellectual self-management. The range and quality of understandings is an important factor in intellectual competency and the purposeful seeking of a wide range of experience, as recommended by Descartes, results in a broad spectrum of powerful understandings.
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CHAPTER THREE
THE INTEGRATION OF THE INTELLECT

The Problem of Fragmentation

Understandings are solutions to the problems of experience. In an uncontrolled situation the intellect may have one solution in the form of an understanding for every problem it has solved. Each understanding has a model of reality and this is formed from the understanding of the problem. Since every problem is different every model of reality incorporated into the solutions will be different, and the different models of reality will be incompatible with each other. The net result is that the intellect possesses a non-integrated collection of understandings. In this state it is unable to understand reality as a whole.

This situation is comparable to the state of traditional science in which problems are solved independently of each other, by different workers, and at different times. The result is a collection of theories that have no common base in reality and do not hang together. The intellect endeavours to overcome this problem by searching for higher level understandings that explain some part of the set of understandings of experience. The ultimate goal is an “understanding of everything” which provides a common platform for dealing with all experience.

The structuring of experience is aided by the nature of education which imposes order on the teaching matter. This order is most developed in the field of intellectual tools such as language and mathematics. In the learning of mathematics the student, in starting with number systems, addition and subtraction, multiplication and division and so on, is grouping understandings into modules. These modules form layers in the understanding of mathematics, where every layer, in the sequence as taught, is a prerequisite for all subsequent layers. The set of modules is integrated and structured into an understanding of mathematics by the knowledge of the teacher. In education the student benefits from the expert organisation of the set of understandings.

Complete integration on this basis is not possible since the theory system is incomplete. Education is dependent on the state of knowledge,
and where knowledge does not exist the student is deprived of the necessary understandings and intellectual structures.

In Western culture the student intellect has only limited support from objective knowledge and must structure its collection of understandings, true and false, in the best manner possible. In this, the intellect is guided by the natural divisions of experience. In thinking about experience and knowledge the intellect endeavours to explain each natural division of reality, and reality as a whole. The nature of these divisions provides assistance to the integration process. Physical experiences, for example, are easily distinguished from all other types and may be grouped together.

**The Structure of a General Model of Reality**

The general model of reality is based on, but not limited by, experience, since the model goes beyond experience to make claims of universal truth. General models may exist of mental, cultural, moral, and spiritual realities in addition to the physical. There may be a general model of fundamental reality which subsumes every other model.

Diagram 1.2.1 shows the structure of a general model of reality. The general model of reality is supported evidentially by the highest levels of submodels (SM) which in their turn are supported by lower level submodels. At the lowest level the whole structure is warranted by the set of experiences that it represents.

The general model may represent the personal environment of the individual. Its overall reality may be divided into models of the individual's residential, employment, and shopping environments. The residential model distinguishes the individual's home from every other home in the area, and that home is further subdivided into rooms and contents. The whole edifice is built upon personal experience. The individual is perfectly capable of describing his or her home, and giving directions for finding it, from the understandings supplied by the general model.
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THE GENERAL MODEL OF REALITY

Diagram 1.2.1
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Alternatively, the model may represent a theory system. The general model of reality, given by the fundamental theory, may be divided into models of the physical, cultural, moral, ideal, and supernatural subrealities. These in turn may be divided into a number of scientific theories which describe what is known about these environments. Every theory incorporates one or more models of reality. The structure rests on defined sets of experiences.

Top Down Integration

If an integrated set of understandings is examined the relationship between the higher and lower levels of understanding may be discovered. For example, within the general model of physical reality every entity model which has physical characteristics has a place. The definition, or model, of a particular physical entity carries a preamble which states that it should be viewed according to the characteristics of the physical universe. No physical object has any meaning outside the general model of the Cosmos. Particles can only be understood within the context of the theory that defines them, and that theory can only make sense within the quantum understanding of physical reality. The meanings of submodels in a general model of reality are therefore conditioned by the higher level models, and their meanings might be very different if the higher level models were different. In short, the general model of reality determines the meaning of every constituent of that reality.

The same is true for all general models of reality. The spirit is an entity of the reality of God and must be understood within that general reality. A moral law is an entity of the Moral Universe and the characteristics of this domain must be understood prior to a full evaluation of the specific law.

This rule carries a number of implications. The first implication is that the general model is prior to its subsidiary models. It functions in the problem solving method by supplying the criteria of truth. In effect, the problem solver stipulates that the general model is true and the subsidiary model must be compatible with it. This is the rule of top-down development. The integration of understandings proceeds on the basis that the general model is true. If it is false every subsidiary model is also false and the integrated structure has little value as knowledge. Experience is the common test of truth.
A second implication is that if there is no general understanding of the field its collection of subsidiary understandings cannot be integrated. It will also be the case that these subsidiary models will be incompatible with each other. Thomas Kuhn shows that this non-integrated state is a characteristic of knowledge schools in the predisciplinary stage. However, it is also the state of physics at this time since that discipline has no general theory and only incompatible subsidiary theories.

A third implication is that if the intellect is to be integrated on the basis of truth the general understanding must explain all human experience. Where general models of partial sets of experience exist with no overarching general model, there is no way of determining if these partial understandings are true.

For example, Physics, in modern times, has had its Cartesian/Newtonian model, its relativity model, and its quantum model. It is likely that both models of reality currently used by physics will be replaced by a model which integrates the discipline's knowledge structure. However, a series of general physical models is possible in the future with no means of determining the truth of any of them. Even if a final physical theory is achieved which accounts for every physical phenomenon it still may be false. This may be seen by the examination of a possible higher level theory.

If the problem of mind and matter is considered any explanation of their interaction must be given from the standpoint of a higher level theory. To amalgamate the intellectual and physical realities into one overall general model of reality a concept of reality is required in which physical objects and idea sets are both possibilities. Such a higher level theory could disqualify the then current theories of the mind and the physical universe.

An intellect without a general understanding of fundamental reality cannot be integrated. An individual intellect, in its fragmented state, may have more than one general model of reality. There may be, for example, understandings of the physical universe, the inner world of the mind, and the Moral Universe with the rules governing personal relationships. The general models of these subrealities may defy integration and the individual will compartmentalise each general model version to avoid confusion.
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In its unintegrated state the intellect has no assurance of the truth of any of its constituency of understandings. It is likely to be wrong to some degree in every aspect of its mental and physical behaviours and these errors cause failures in the pursuit of objectives. This state is mentally confusing and self-defeating. The solution must be to solve the problem of fundamental reality and to derive the common model for the explanation of all experience from it. The development of fundamental and general understandings is a specialist problem beyond the capabilities of most intellects. The proper development of the set of intellects is therefore dependent on adequate objective knowledge unified by a fundamental theory of reality.

Rationality, as formulated by Rene Descartes, is the endeavour to secure the intellect in knowledge and truth as the prerequisite for correct dealings with the affairs of life. Rational integration of the intellect is dependent on absolute objective knowledge in the form of a fundamental theory which models and explains both the set of general understandings of the natural divisions of reality and the fundamental and absolute reality that underpins them all.
Subjective Purposes

Every individual has needs and wants which spring from the imperative to survive and the demand for satisfaction of desires. Purposes arise from these needs and wants and the set of purposes determines the intellectual development of the mature individual. Purposes give rise to objectives. Objectives may be formed subjectively, although most people adopt the conventional objectives of their country and class. Thomas Kuhn observes that people who adopt the conventional objectives of their society are more likely to be successful according to that society's scale of values.

Individuation has been widely held to be the consequence of the physical body. It is, however, possible and common, for an individual to be unindividuated mentally, even though he or she recognises physical separation and personal physical characteristics. The subordinated person identifies totally with the group or groups of which he or she is a member. There is an extreme condition of blind acceptance of the culture, and of the ideology driving that culture, in which individuals uncritically accept and obey all ideological demands. Abraham Maslow has identified the opposite condition to subordination as self-actualisation, and claims that self-actualisation is the maximisation of individual potential, and this is the characteristic of outstanding people.

Individuality and subordination are consequences of cultural influences. Group-oriented ideologies inhibit individuality and produce subordination. Knowledge, which is intellectually empowering, leads to individuality and self-development. The understanding of the self, whether as self-actualising or subordinate, and its relationship to the understanding of reality, govern the individual's purposes, objectives and behaviours in life.
CHAPTER ONE

THE MOTIVATION TO KNOWLEDGE

Philosophy and the Self

Every individual forms a subjective philosophy. The individual's philosophy comprises an understanding of the Self and an understanding of reality. Taken together these understandings give the individual an understanding of his or her life. It defines what reality is thought to be, and the individual's part in that reality. Purposes follow from the individual's needs and wants in relation to the subjective understanding of reality, and these govern behaviour.

The diversity of understandings of reality leads to a multiplicity of opinions on how to behave in pursuing purposes. Knowledge offers a solution to this confusion of opinions. Knowledge is the true understanding of reality and implies behaviours which are most likely to be successful.

The Theory of Intelligence

The intellect, as the compendium of understandings, contains an understanding of the self. The "I" or spirit which is the nucleus of the intellect is to be distinguished from this understanding of the self. The I is not an understanding but an existent. One is aware in the present moment of the I but can predicate little about it directly but selfbeing and awareness. The I pre-exists its collection of understandings and constitutes the cognitive, emotional, and judgmental entity which assents to and annexes each new understanding. Its nature is, upon examination, intelligence and its function is willing expressed through its power of choice.

Choice, including assent to the truth of understanding, is made on the evidence presented by the set of relevant understandings within the intellect. What is not understood cannot be chosen. The intellect, as the systematic functioning of the I and its annexed set of understandings, is
not compelled to assent to any candidate for inclusion as understanding. Nothing is self-evidently true.

The factors of satisfaction and happiness are associated with the self, or the "I" entity. These are sufficiently desirable to the self to influence choice. The self, in pursuing these ends, moves from the passive to the active state. In this state it forms purposes from which it derives objectives. Problems bar the achievement of the objectives and the self actively solves these problems by conscious thought and physical behaviour.

The Understanding of the Self

The set of understandings includes an understanding of the self which is distinct from the cognitive entity, and it results from the judgments of the self about itself, based on experience. The record of all personal experiences and their explanations is the database from which the understanding of the self is formed. This self-understanding is built on a model of reality which relates the self to external reality, and it is subject to progressive modification. The process of ageing and the changes in the roles played by the individual in the family and in society modify the concept of the self. Military training and religious conversion are influences which can produce radical changes in the understanding of the self.

The self, in making decisions, normally acts according to its self-understanding and therefore conforms to it. The self-understanding is a behavioural limiting factor but not a necessarily limiting one, since it is modifiable. The I identifies with its self understanding but can transcend its own understanding for purposes of self examination and self-improvement.

The individual's self-understanding explains to him who and what he is and his relationship to what he sees around him, physically and intellectually. It constitutes the set of apprehensions of the self to which the I has assented but which may be true or false. These apprehensions include not only those capabilities and limitations which have been judged as true in experience, but the underlying determinants of sex, age, race, physical characteristics, and class and educational limitations. These are coloured by emotional limitations such as interest and fear, and likes and dislikes. Individuals understand their past successes and failures and from these their strengths and weaknesses. Their natural dispositions and personal
Experience and Knowledge of Reality

capabilities play a major part in the formation of their personal philosophy and the selection of personal objectives.
The value placed on the self varies with the understanding of the self. Self-esteem and self-confidence, and their opposites, are the products of this understanding. The understanding of the self forms the personal attitudes to reality as the intellect sees it and it has been labelled “personality”.

Subjective Reality

The reality with which the individual deals is not the reality of objective knowledge but the subjective reality of personal experience. The set of experiences of this reality are reduced to a high level understanding or philosophy based on a general model of that reality. The highly educated child of intelligent, wealthy and doting parents has a vastly different set of experiences from the streetwise dropout from a broken home in the inner-city slums. The understandings of experience of reality of the two would have little similarity even if they lived in the same city. Their philosophies of subjective reality would, in consequence, define different sets of possibilities.

Subjective Philosophy

All individuals have a philosophy, or philosophies, of sorts, although these constructions are not necessarily recognised as such, nor are they subjected to the critical examination applied to an objective philosophical system. The subjective philosophy brings together the individual's self-understanding and the understanding given by experience of subjective reality.
It is formed by the set of truth judgments of the individual concerning all understandings of experience, whether sensible or ideal. The truth judgment may be absolute or conditional and is associated with a precis or other overview which identifies the understanding of experience and describes it.

The subjective philosophy may also assent to understandings which are not justified by experience. A belief concerning some ideology such as materialism or communism, or some religious doctrine, is a truth judgment and may be incorporated into the subjective philosophy as true, partly or conditionally true, or false. An individual may, for example, accept as true a theory such as Relativity without clearly or even correctly understanding it. He may accept the principle of
Evolution while having reservations concerning Darwin's explanation of its mechanisms.

From his position as subjective philosopher the individual knows that which he has assented to as the truth and this guides all his future judgments. This philosophy may be falsified in whole or in part by later experience. Falsification may lead to disillusionment and radical changes, often extravagant, in the subjective philosophy. While the truth of the philosophy stands the individual will resist all challenges since his philosophy appears to him as consistent with his lifetime's experience.

The individual's subjective philosophy is an understanding and has both a model of reality and a set of rules that govern the operation of that model. The philosophy functions in a similar manner to a scientific theory of reality and is the highest level of explanation of subjective reality. The subjective philosophy provides the means to manage present and to some extent control future experience and enables the individual to evolve a set of purposes and objectives.

The self-understanding is a major influence on the subjective philosophy. The understanding of the self as a physical body with a mind produces the materialist philosophy. The understanding of the self as a mind with a physical body produces the Cartesian type of rational or idealist philosophy. Generally speaking, the materialist self-understanding is the normal case for immature and other inadequately developed intellects and philosophical considerations in maturity lead to the rational understanding.
Multiple Philosophies

The individual may be unable to integrate all his understandings into one philosophy and in consequence is forced to work with multiple philosophies. The common situation is that the intellect is internally divided into understandings based on incompatible realities.

Diagram 1.3.1 shows the basic structure of the integrated intellect. The intelligence or spirit, known to itself as "I" or "me", sees the universe of experience through the philosophical understanding which models those features of the set of models of reality which are regarded by the individual as significant. The philosophical understanding does not replace the set of models of reality which continue to function and develop in normal dealings with experience.
The Pursuit of Knowledge

Diagram 1.3.2 shows the structure of the fragmented intellect. The individual is unlikely to have an "understanding of everything", and the fragmented intellect is the common case. The individual compartmentalises his philosophies and their related understandings and deals with experience through one compartment only at any one time.

The Structure of the Fragmented Intellect

Diagram 1.3.2

This does not normally present difficulties except where a matter affects two or more compartments in which case only confusion follows since the intellect cannot resolve such problems.

Fragmentation of reality produces multiple philosophies. An individual may have separate philosophies covering business, religious matters, politics and social matters, and his personal environment. Inconsistencies may become apparent between these philosophies but, in the face of continued failure to integrate the models of reality, they must be separated into exclusive compartments to avoid confusion.
Experience and Knowledge of Reality

**Purposes**

The individual's philosophy, or philosophies, provides the basis for the determination of purposes and the fixing of objectives. From the subjective philosophy, based on the models of reality that result from experience, the individual derives purposes appropriate to his self understanding, and these purposes shape and colour his set of understandings and to some extent determine his future experience.

Purposes may be clearly defined intellectually or may be unexplainable emotionally based wants. The pursuit of these purposes brings the individual into confrontation with ignorance and determines which problems are real for the individual. The solving of these problems are necessary steps on the path to the achievement of purposes. The intellect in solving real problems annexes the solutions as understandings and grows in the process. The mature intellect controls its own development according to its purposes. Diversification of vocations and interests in the more mature intellects produces individualised development.

**Behaviour**

All behaviour is the expression of understandings. This is given in the formula:

EXPERIENCE...> UNDERSTANDING...> BEHAVIOUR

Philosophical understandings enable the individual to control his mental and physical behaviour, enabling purposeful behaviour to achieve aims and desires. All human behaviour is purposive, no matter how vaguely discernible the purpose may be.

Where the expressed behaviour is less than successful in satisfying the purposes being pursued the cause may be traced to the understanding that is driving that behaviour. The most successful behaviours follow from knowledge. Since all his purposes require behaviour for their satisfaction they are all dependent to some extent on knowledge and the individual may decide to base all his behaviour on knowledge as far as this is possible. The pursuit of knowledge then becomes the primary purpose of the individual.
CHAPTER TWO

THE INTELLECT AS AN OPERATING SYSTEM

The individual, with sets of purposes, objectives, and problems, must face the daily world of experience, and execute behaviours believed to be to his or her advantage. Success and failure follow from the quality of the individual’s intellect.

The intellect may be compared to the computer operating system which responds to outside stimuli and produces appropriate outputs by invoking the appropriate routines. An understanding functions like a computer program to be retrieved from the library of such programs and executed, under the control of the intellect, when the trigger conditions arise. A fundamental difference between the computer operating system and the intellect is the individual's ability to make unprogrammed decisions in situations where pre-programming does not exist or is inadequate. The intellect is therefore the programmer with a previously produced set of programs at its disposal. These understandings are produced by the intellect, as the programmer, over the lifetime of the individual. The individual's problem solving method is also the programming method.

The existence of the library of preprogrammed mental and physical behaviour definitions relieves the intellect of a vast amount of repetitive problem solving. The individual behaves like a computer user who can apply the system to his purposes and problems without having to consider the basics of system operation.

The understanding, and the model of reality on which it is based, is a logical entity. When that understanding is invoked to deal with experience, or problems generally, it is expressed and its expression is behaviour. Behaviour is both mental and physical. Any behavioural sequence is a mixture of the two forms and they cannot be separated. Behaviour is always purposive, although purposes may be trivial and irrational. Every experience and problem of action is viewed in relation to one or more purposes and the objectives that flow from these.
Experience and Knowledge of Reality

The intellect with its set of understandings is sufficient to account for that subset of human behaviours which is common to all mature individuals within Western culture. These behaviours are:
1. The ability to maintain second by second control of the thinking processes and physical behaviour.
2. The ability to deal with day by day experiences of all types and to respond to those experiences in a more or less appropriate manner.
3. The ability to impose the will, in the form of purposes and objectives, on present problems in order to shape the future.

The following discussion considers how the system gives the individual control of his life situation.

The Management of Current Status

The individual needs to know at all times certain facts which are subject to change with time. He needs to know the date and approximate time, where he is, the relationship of these facts to his current short term schedule, and the current status of all his relationships and projects. When the individual wakes each morning the first activity of the intellect is to re-establish this data. This control information is updated during the operational day. Current status is an aspect of self understanding and is always influenced by that understanding. An individual who loses control of his current status is at best confused and at worst could be regarded as mentally sick.

Information Systems

Human beings are purposeful and all human behaviour is directed to one or more goals. The determination of a purpose and the fixing of the immediate objectives results in a goal-seeking system. The common state of an individual is that of working within one or more goal-seeking systems. This type of system processes information, modifies understandings, and selects behaviours.

Goal seeking behaviour brings into operation personal information systems. These systems provide the individual with the necessary current status information. An information system is therefore created by the adoption by the individual of a purpose, and is shaped by the setting of objectives.

An information system may be stable or dynamic. Dynamism implies a high rate of change of the environment and therefore of the model; stability is the opposite state. A dynamic model cannot be divorced
from its information data, as given in experience, or it quickly becomes obsolete. Information changes the model in some way that is relevant to immediate behaviour.

An example is given by the model of reality in use when driving a car, and its continuous modification in the light of the stream of data about road and traffic conditions.

With more stable systems the events and time intervals are recognisably large. For example, data that measures changes in the state of the economy provide information to money management systems.

Understandings of experience which are modifiable by experience, in the form of information, are prototypes, and they are based on models of virtual reality. Information is necessary to relate them to real world states of affairs.

The current status of the intellect is given by the state of all projects as modified by the latest information.

The Management of Experience

People develop over their lives a set of understandings which covers their normal experiences, and which incorporates techniques for dealing with recurrences of those experiences. Most of what is experienced is familiar to them and is dealt with more or less successfully. Their past experiences are explained by their set of understandings which are based on models of reality. These models reflect what they have judged to be the essential features of the experiences for which they are accounting, and structure the environments which they infer give rise to them.

The recurrences of events of experience lead to the automatic selection of predefined behaviours. Behaviour is both mental and physical. Any behavioural sequence is a mixture of the two and they cannot be separated. The act of summing a set of numbers may involve physical activities in recording intermediate workings. Even where the arithmetic is performed mentally physical activity is usually inhibited to permit concentration of effort and this inhibition is a physical behaviour.

New experiences are incompatible with existing models of reality and are recognised as problems. As such they must be dealt with by the individual's problem solving behavioural programs. The invoking of these routines is again automatic.
Experience and Knowledge of Reality

**Reality Model Types**

The intellect has no innate or given structure but is structured by experience, and by the order of that experience. Diagram 1.3.3 shows an intellectual structure typical of a mature individual in Western culture. The main division within the intellect is between understandings of the self and understandings of external reality. Personal understanding comprises the understanding of the self in relation to external reality in the form of roles or functions, and the understanding or meaning of the self as an existent. External understanding comprises understandings of the personal environment, the cultural environment, and the religious and moral reality. The understandings of purposes and objectives are outputs of the subjective philosophy.

**The Personal Reality Model**

This model is formed in the first instance in reaction to experience and is always subject to modification by further experience. The model grows from birth through all the stages of life. Initially all experience comes through the senses from the immediate personal environment. Later education and rational consideration of experience, which is mental experience, re-orders sensory experience.

The major constituents of the Personal reality model are:-
understandings of people:- family, friends, acquaintances, others, and understandings of places:- buildings, roads, working and recreational areas. Understandings of behavioural conventions when interacting with the environment are included in the model. These inter-relate historically in the P.R.M. so that there is a chronologically determined logical separation between the childhood environmental model and that model which reflects the current environment and the current status of that environment.

The individual exists in the environment described by his Personal Reality Model. He has first hand experience of all aspects of the model and its events affect him in real terms.
Experience and Knowledge of Reality

Cultural Models

All other models are formed from information supplied by personal communication, education, research, or the media. These other models include a General Environment model in which the individual models the cultural reality he sees through the reports of others including the media, and a Theoretical reality model which reflects the reality or realities given by objective knowledge. These model types relate to cultural reality.

Personal and Mental Models

There may also be a model of inner personal reality. The inner model tries to explain its intellectual nature and the existence of the self. It is the reality of the self-understanding. It sees itself in many everchanging roles; as a child, son or daughter, grandson or granddaughter, student, team member, member of a trade or profession, spouse or partner in a family arrangement, parent, holder of various positions and offices in commercial and public organisations, grandparent, senior citizen, and so on.

The meaning of the self may be physical, intellectual, or spiritual. An individual may, in his own estimation, be an animal as described by Biology. Another may see himself as a thinker in the Cartesian manner, with a physical body as an appendage. A third may see herself as a moral and spiritual being with rational capabilities, and a temporary body. In a self-creating system the meaning ascribed to the self, whatever it is, is self-determined and true for that individual, although it may not adequately reflect future possibilities.

The Management of Behaviour

Behaviour is always purposive, although purposes may be trivial and irrational. Every experience and problem of action is viewed in relation to one or more purposes and the objectives that flow from these. Experiences that are irrelevant to purposes and objectives are automatically ignored by being treated as noise.

Behaviour is more or less successful in relation to the individual's purposes and objectives. Where the behaviour is successful the understanding on which it is based is good. Failures stem from poor or false understandings. Success and failure are known from later
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experience. Later experience therefore corroborates or discredits the understanding and its preferred behaviour set.

The individual must select behaviours which he considers appropriate having regard to the understandings and information available to him. The set of behaviours from which he selects may be inadequate to the achievement of the goal of influencing the environment according to his purposes. Information feedback reveals the success or failure of the behaviour. Establishing the correct behaviour in a situation of ignorance is a difficulty which is dealt with either as an exception if it is short term or as a problem to be solved in the medium to long term. Exceptions must be dealt with on a trial and error basis. Problems must be submitted to a problem-solving process.

Time Management

Short Term Planning

This activity is concerned with choosing an order in which to proceed through the operational hour and day, having regard to both the immediate goals and the obligations and other demands which must be fulfilled. It is based on a series of models which schedule normal events such as waking, catching trains, arriving at the workplace, and so on. These are supplemented by appointments, group meetings, and the need to make telephone calls. Written notes are sometimes used to further support the system but it may be observed that the busiest people rely on them the least. The system works if one has confidence in it. The understandings and the models on which they are based must be created in the face of experience. It is sometimes called "learning the routine". The requirement for efficient use of working time leads to a highly structured framework or model of the operational day.

The Management of the Future

The individual is compelled to select behaviours in the present which will affect his experience in the future and must base his selection on what he sees as rational grounds. This type of decision is normal and unavoidable. We do not usually postpone consideration of how to satisfy our needs and obligations until they become immediately urgent. For example driving a car requires continuous short term forecasting of the future state of road and traffic conditions based on what may be
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seen in the distance. The business of buying and selling shares requires some predictive information relating to the medium term future.

The most common approach to forecasting assumes that the same sorts of experience will occur in the future as in the past. This simple model always operates in a set way, and is unaffected by future change. Physics deals with this type of model. Nobody seriously expects that atoms or molecules will behave differently one hundred years from now. For Physics the normative model and the predictive model can be one and the same. This correspondence between the two models accounts in large part for the success of Physics in comparison with other disciplines. At the other end of the scale there are models whose present status offers only minimal guidance as to its future behaviour. Economic models fall into this category.

The predictability of future experience commonly decreases with increasing projection into the future and the individual must resort to forecasting techniques. Using these techniques the individual builds a model of the future state of reality. The model may be static or dynamic. In a more sophisticated model trends and cycles are taken into account. There has to be some definable relationship between the normative and the predictive models for forecasting to work. Where the predictive model is less than credible, or is otherwise unacceptable, the effort may be put into creating an objective model and attempting to realise that instead. An objective model is one that reflects the wants of the individual and implies that behaviour is directed by some plan of action towards the achievement of aims. Long term human activity is normally based on an objective model of reality envisaged by the individual.

The least certain model is that which is subject to discontinuity. Discontinuities are introduced into economic models by recessions, social upheavals, and war. At the individual level the individual's future predictions and plans may be upset by, for example, weather variations in the short term, and job loss, bereavement, or family breakup, in the medium to long terms. Human beings cope with misfortunes and endeavour to reconstruct their working models of reality on some more certain basis. Every long term model, and the plans that are made on the basis of it, must consider the death of the individual. For the atheist little can be done, and therefore little needs to be done other than to make a will. For the theist the possibility of a life after the death of the body needs to be
considered, but it cannot be planned for in the manner that life in the world is planned. These considerations are taken up in the subjective philosophy and can affect all behaviour.

**The Search for Knowledge**

The efficiency of the intellect as an operating system may be seen in experience. If objectives are achieved and purposes satisfied then the intellect is performing well. If failures result the individual must consider the causes. He may question whether he has correctly understood the reality, whether the right problems have been solved, if the problem solving method has been properly applied, and whether he has asked the relevant questions.

If the individual, in the midst of the wreckage of his purpose, determines to base further behaviour on true understanding he stands in need of knowledge. His purposes, objectives, and behaviours are then directed to improving his set of understandings using criteria for knowledge.
CHAPTER THREE

THE CULTURE AS KNOWLEDGE

This chapter discusses the relationship between the individual and group cultures from the point of view of knowledge.

The culture is the set of solutions to the common problems of the group and it determines the nature of the group and its institutions through the selection and definition of problems for solution. The State, for example, is the solution to certain problems of the culture.

The culture is formed, extended, and improved by new solutions to common problems. Cultural solutions may rest on opinions, which may be ideological, or irrational. When the culture insists on true solutions to its problems it requires conformity to the standards of knowledge and cultural decisionmaking and behaviour is then driven by knowledge.

The form then is

\[ \text{CULTURE} = \text{KNOWLEDGE} \rightarrow \text{CULTURAL BEHAVIOURS} \]

The culture, as the set of true solutions to the common problems of the group, amounts to knowledge. Knowledge is the correct solution to the problems of reality, and cultural knowledge is the set of correct solutions to the problems of cultural reality. Knowledge enables the correct behaviours for dealing with reality and the successful achievement of cultural purposes follows from knowledge. Knowledge is therefore a form of power. At the cultural level

\[ \text{CULTURE} = \text{KNOWLEDGE} = \text{POWER} \]

The development of intellects

The set of solutions to the problems of an individual form the set of understandings within his intellect. This set of understandings is the individual culture. To a large extent the set of intellects is formed by education and training based on group cultural solutions to the problems of experience. Generally speaking, intellects are the products of the group culture.

The form is

\[ \text{CULTURE} \rightarrow \text{THE SET OF INTELLECTS} \]
The Pursuit of Knowledge

If the culture is based on knowledge then education will be based on knowledge and the set of member intellects will be founded on knowledge.

\[
\text{CULTURE} = \text{KNOWLEDGE} \rightarrow \text{SET OF INTELLECTS} = \text{KNOWLEDGE}
\]

At the individual level knowledge, whether culturally given or personally achieved, empowers the individual.

\[
\text{INTELLECT} = \text{KNOWLEDGE} = \text{POWER}
\]

If the culture is based on an ideology the set of member intellects will be ideological.

\[
\text{CULTURE} = \text{IDEOLOGY} \rightarrow \text{SET OF INTELLECTS} = \text{IDEOLOGICAL}
\]

The picture of reality drawn by an ideology may or may not correspond to the reality given by experience.

If the formula

\[
\text{EXPERIENCE OF REALITY} \rightarrow \text{KNOWLEDGE OF REALITY} \rightarrow \text{MENTAL AND PHYSICAL BEHAVIOURS}
\]

is considered, knowledge determines the individual's behaviour. When an ideology is substituted for knowledge the formula becomes

\[
\text{INITIAL ASSUMPTIONS} \rightarrow \text{IDEOLOGICAL REALITY} \rightarrow \text{MENTAL AND PHYSICAL BEHAVIOURS}
\]

The ideology then determines the understanding of reality and how the individual will think and act in that reality. If the ideological understanding of reality departs significantly from knowledge the behaviours that follow will be incorrect. In terms of power to achieve purposes the usefulness of the ideology depends on the extent to which it is knowledge compliant.

Understandings of reality which are at variance with knowledge of reality may be classed as illusions and behaviours based on illusions have unpredictable consequences.

If the culture rests on illusions in the forms of traditions, customs, and superstitions, member intellects will comprise collections of ideas of doubtful worth.

\[
\text{CULTURE} = \text{ILLUSSIONS} \rightarrow \text{SET OF INTELLECTS} = \text{ILLUSIONS}
\]

By definition an illusion is an unjustifiable substitute for the understanding of reality, and is disabling. There may be little difference in value to the group between an ideology and an illusion

**Three stages of cultural development.**
Experience and Knowledge of Reality

Cultures, to be successful, must address themselves to real problems. Primitive cultures are concerned with problems of survival. They need to appropriate, exploit, and defend their means of survival. Primitive cultures are therefore philosophically materialist. They are concerned with “know-how” rather than knowledge. Know-how comprises techniques for manipulating reality for material gain whereas knowledge is the true understanding of reality.

Rational cultures are concerned with the problems of social and economic organisation and methods, and truth and morality are important considerations in problem solving in these environments. Truth and morality can only be applied within cultures that have knowledge of these subrealities. However, rational cultures also depend on the prior existence of successful materialist cultures. Knowledge and education, in all its forms, physical, cultural, intellectual, moral, and religious, have to be paid for.

Spiritual cultures are concerned with the meaning of life. Cultural survival and moral and efficient group organisation and procedures are insufficient in themselves to justify the effort and cost of life. Successful spiritual cultures rest on the knowledge achieved by prior successful rational cultures. Spiritual cultures which are irrational are often unprogressive and oppressive and are sometimes dangerous. Conflicts between religious groups may often be traced to ignorance of the truths given by rational knowledge of reality.

In the 20th century several societies have tried to evolve a more moral and efficient culture but have employed irrational and immoral ideological means. The result has been failure and disaster. The correct path of cultural development is from the sensible reality, through the rational, to the spiritual, and it must be based on true knowledge of reality. The evidence of the historical record indicates that most cultures never evolve past the materialist stage and are ultimately extinguished by cultural competition.
The Pursuit of Knowledge

Individualised development is often discouraged by dominant cultural ideologies because the non-standard intellect may conflict with the desired cultural understanding. Generally, systems of thought which are uncertain of their ability to defend their understanding of truth demand rigid adherence to the established creed. Systems of beliefs which have recourse to a valid theory of knowledge can both accept true advances in knowledge and show how erroneous claims to knowledge deviate from the truth.

Cultures which are founded on knowledge evolve through knowledge development. Cultures which are open to short term progress and long term evolution require a sound theory of knowledge which can support the transition of the culture through all stages of development and they also need a growing edge of advanced thought based on that theory. All knowledge is achieved subjectively and is produced by knowledgeable individuals. The development of outstanding individual intellects should therefore be encouraged in the interests of cultural progress.

Relative knowledge is subject to periodic refutation and replacement and is therefore unstable and unreliable. The theory of knowledge must show that it can reach absolute knowledge and truth, and therefore have absolute truth status itself. The success of the problem solving method is relative to the theory of truth used in the problem solving procedure. Where that theory of truth can be shown to be absolute the problem solving method gives absolutely true solutions.

The next section examines the problem of truth.
Section 2.1

Divine Illumination and Revelation

SECTION TWO

THE CREATION OF KNOWLEDGE

The Western Intellectual Tradition has, over the centuries, preferred the material reality, and devalued the ideal. The introspective observation of ideas suggests a lack of order which is almost chaotic. Ideas appear to be very transitory entities. They exist in the human consciousness for a short time and are gone. They are insubstantial, totally lacking in a physical nature, and leave no trace behind them when they disappear. They are never in short supply and at times seem to flow like a torrent through the conscious intellect. The cost of an idea, or of a multitude of ideas, is nothing. They are, on any material scale of values, of little worth.

In a picture like this the mistake is to treat the conscious expression of the idea as the idea itself. All ideas, in the form of understandings, are resident deep in the subconscious part of the intellect and their expressions, only, pass through the consciousness. An analogy may be to compare the understanding to a video recording, where the transient picture that appears on the television screen when the recording is played is its expression. The library of video recordings has a permanent existence and value. In the same way the set of understandings is permanent and useful. The set of understandings possessed by an individual are valuable as the lifetime's achievement of his intellect. While one intellect may be better than another nobody can function in the world without an intellect.

The intellect grows in power by solving problems. Each new solution is integrated into the intellectual structure in a manner which preserves its correspondence to the structure of reality as it is found in experience. True solutions to the problems of experience are knowledge and an intellect which is formed according to the rules for knowledge deals with reality effectively and efficiently.
PART ONE

THE ORIGIN OF NEW IDEAS

The application of the problem-solving method to a real problem results in a solution to that problem. This solution appears in the intellect of the problem solver at some time subsequent to the attempt to solve the problem. It occurs as an event of experience, which is to say, it is not a conscious construction of the intellect but simply appears as a complete solution at a point in time. The solution is a new idea to the intellect in which it occurs. This part considers how new ideas, in the forms of solutions or answers, are formed. The problem being examined is where exactly that solution came from. How is knowledge created?

Problems are defined, and their solutions are requisitioned in terms of general purpose languages. A valid methodology for knowledge must always give the same solution to a particular problem regardless of the problem solver's working language. An understanding of language is necessary to show that general purpose languages are transparent to the problem solving procedure.

In pursuing the aim of knowledge, the intellect requisitions new understanding from the psychological processes. These requisitions take the form of language and the language used is, ultimately, meaning. The intellect and the psychological processes therefore conduct a dialogue about reality based on this primitive language. Meaning as a language analyses and models the reality of experience and communicates the facts of this reality. Meaning, as a given language, is the language of reality itself. The psychological processes, using this language, communicate those characteristics of reality required by purposes, to the intellect.
CHAPTER ONE

THE PROBLEM OF INNOVATION

Experience in the form of problems of understanding is the foundational matter for the production of understanding and knowledge. Experience, either in its sensible form or in its intelligible form, does not amount to understanding of reality. The problems of experience are transformed into understanding and knowledge through a psychological process. The nature of this process that translates the solution specification into the solution is a problem that requires clarification.

The whole of the corpus of knowledge has originated at various times past as new understandings in individual intellects in the form of problem solutions or answers to questions. This problem is not, however, confined to understanding and theory formation but also concerns all writing and speech. In Karl Popper's view the creation of all understanding, scientific, humanistic, and artistic, has a single explanation. This explanation involves not only the intellect but also the psychological processes by which the intellect grows in understanding.

The Creation of New Knowledge

A theory is a formal expression of understanding and as such is produced from subjective resources. Theories are related to problems and to the understanding of problems reached through research of the facts. The formula for the production of new solutions from the problem understanding is

PROBLEM UNDERSTANDING...> SOLUTION SPECIFICATION...> SOLUTION.

The stages of problem solving up to and including the solution specification present no special problems. However, the leap from the solution specification to the solution involves a logical discontinuity. It is not possible to trace the ideas incorporated in the solution back to the solution specification or the problem definition. These ideas are
new. The problem is to explain where they come from and how they are formed into the meaningful logical construction which is the solution.

According to Karl Popper, there is no such thing as a logical method of having new ideas. Theories, and the understandings they spring from are not, in this view, the products of intellectual logical processes, but their origins lie in the psychological dimension in which the intellect exists.

The method is given by

PROBLEM UNDERSTANDING...> SOLUTION SPECIFICATION...> \{psychological process for generating new understanding\}...> SOLUTION

Thomas Kuhn says much the same thing. According to Kuhn, no ordinary sense of the term "interpretation" fits those flashes of intuition through which a new theory is born. Instead what happens is that the new theory is invented/discovered/realised by some psychological process.

The general significance of the problem of innovation should be evaluated. All understandings, and their expressions as objective knowledge, first occur in the solution formation process. This means that all theories are the direct consequence of this process.

For example, the theory of Relativity originated in the intellect of Albert Einstein as the result of his attempts to solve certain problems. At a prior stage only the problems, in various stages of examination, existed in Einstein's intellect. There then occurred an intellectual event with the result that the solution was found to exist in that intellect, ready to be expressed in theoretical form. This is the common case in theory innovation.

The problem of innovation is not confined to science and religion. Philosophers, in applying their methods of logical analysis and reasoning, are tackling and solving a flow of problems, both simple and complex. Philosophical outputs, as solutions, are subject to the same conditions and methods as all other knowledge. The whole of the culture has been produced subjectively by psychological innovation. The culture, as knowledge, has at some time, and in its parts, entered the subjective understandings of individuals in this manner prior to publication in objective form.
The Origin of New Ideas

These intellectual and psychological events can be explained causally, in terms of the problem solving process. The explanation of the coming into existence of the solution lies outside the explanation of the method. It has already been noted that false meanings may be formed if the problem solving process has been mismanaged. Innovation is the production of both true and false new meanings. The individual may easily pollute his intellect with false understandings, and the culture may be similarly polluted with false theories and philosophies by a careless approach to innovation. Innovation of itself does not guarantee truth.

The new solutions, whether true or false, are innovations which have not previously existed in the individual intellect, and perhaps have never previously existed in any human intellect. If the medieval claim that nothing proceeds from nothing is accepted as true, the supposition that new understandings emerge into existence from nothingness is not valid. Understandings and theories do not spontaneously generate themselves. The onset of these understandings has, for the most part, been initiated by human thinking but individuals no more create these understandings than they create their own bodies. They are given as completed logical constructions from a source external to the enquiring intellect. They are not, however, given in the sense that visual experience is given. They are caused by behaviour, and by understanding the causal process their creation and content can be controlled.

The Investigation of the Psychological Processes

The psychological process is utilised every day by everybody to solve the many simple problems of daily living. As a normal function of the psyche it passes notice in the ordinary case. Its employment to solve the complex problems of science reveals something of its character and limitations. Not all problems are solved, and some that are, are not solved correctly. Furthermore, where solutions are achieved there may be a noticeable delay between the completion of the solution specification stage and the achievement of the solution.
The Creation of Knowledge

The incidence of delayed solutions appears to be fairly common, especially when problems are not simple. In business matters, for example, problems may seem difficult on first consideration and may be set aside for later solution. On the second examination they present no special difficulties and proceed to solutions easily. Something happens between the two attempts at solution and this may be traced to the operation of the psychological process.

The Australian physicist, Paul Davies, described a number of problem solving cases involving delayed solutions. Carl Gauss had for years been wrestling with a problem about whole numbers when, like a flash of lightning, the riddle happened to be solved. He was unable to determine what was the conducting thread which connected what he previously knew with what made success possible. The "break-through" was sudden and dramatic, the problem, only, existing in Gauss's intellect at one moment, and then at the next moment the solution also existed in that intellect.

The French mathematician Jacques Hadamard made a study of this phenomenon, which he referred to as mathematical inspiration. Hadamard gives the case of Henri Poincare, who had likewise spent a lot of time fruitlessly tackling a problem concerning certain mathematical functions. One day as Poincare went to board a bus the solution appeared in his intellect. At the moment when he put his foot on the step the idea came to him, without anything in his former thoughts seeming to have paved the way for it. He was so certain that the problem was solved that he put it to the back of his mind and was able to prove it readily at his leisure.

Roger Penrose was working on a problem related to black holes and space-time singularities. He was about to cross a busy road when the solution occurred to him, but only fleetingly. He became aware later of a curious feeling of elation, and remembered the brief inspirational flash. The correctness of the idea was rigorously demonstrated some time later.

The pattern given above is common to all complex problem solving and the occurrence of the solution has been described as taking the form of a flash of intuition. It may be called the "Eureka effect". The pattern may be analysed into a number of steps which are
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- an unsolved problem understanding and its solution specification are resident in the intellect but not necessarily in the conscious.
- there is some delay between the formulation of that problem understanding and the occurrence of the solution.
- the intellect is suddenly aware of the occurrence of the solution without any immediately prior thought about the problem.
- the conscious intellect is aware of the event of the occurrence of the solution, but not necessarily of the details of the solution. The solution then resides in the intellect but not in the conscious part of that intellect.
- the solution may be drawn into the consciousness at leisure and examined in detail.

The significant omission from the pattern is an account of how the solution was put together. In fact, this constructive or formative process doesn't happen in the intellect. The solution appears in a complete state. The view that solutions are man-made interpretations of given data cannot be sustained.

Creative Writing

The problem of the emergence of new ideas is not confined to scientific epistemology. Every writer, whether of novels or more practical papers such as letters and reports, has the experience of seeing his work emerge as a flow of ideas which the conscious mind does not originate but only absorbs. Most people can experience the process of writing, and even if the resulting work is judged to be substandard, the process of having ideas and writing them is not difficult. The ideas, in general purpose language sentences, flow into the consciousness of the writer, whose task is to write them. The creation of new ideas requires that a pattern is set up to initiate and control the flow of ideas in the process of writing. However, individuals are not totally in control of the process. The output from the process is not constructed or assembled or otherwise methodically formed by the individual but simply appears. The intellectual power is to specify, to criticise and to modify.

All writing starts with a purpose and an objective. The purpose is the product of the philosophy of the individual and defines his reasons for writing. The specification of the writing project forms the objective.
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This specification is rarely complete, or even well-developed, in creative writing.

Dorothea Brande, who was both a novelist and a teacher of fiction writing, explained the origin of new ideas by dividing the human intellect into conscious and unconscious parts. The flow of new ideas was seen to be from the unconscious to the conscious. The process of writing involved tapping the unconscious. In Brande's scheme the unconscious, to do its work, must satisfy a specification existing, initially, in the conscious mind. The specification at the start need not be a complete outline of the novel, but every selection and alteration made by the writer expands and amends the specification.

As the ideas flow, and are written, they are integrated into the meaning of the specification. This specification is then a snowballing complex meaning. Every judgment, in the form of criticism and modification, is also incorporated into the specification, and affects the future flow of ideas within the writing project. The critical process, in evaluating the writing, must necessarily question, and perhaps alter the specification so far developed. Teachers of fiction writing often recommend the suspension of criticism during writing as it interferes with the free flow of ideas. The problem is that doubts and undecided alternative strategies create a specification which is too volatile and vague to be of use.

Enid Blyton, a writer of over 700 children's books, explains the source of her creativity as her imagination or undermind. According to her analysis of the process of writing:-

* Creativity is different from thinking.
* Creativity is not controlled but is accessed.
* The undermind obeys general directions such as the required length of the book in number of words.
* The specification may be very sketchy consisting of no more than two or three sentences which describe what the book is about.
* No further thought or planning goes into the book. The writer simply writes the story as it flows through her conscious mind.

This analysis must be taken together with the understanding that the writer's philosophy and purposes enter into the process and affect the flow of ideas. Enid Blyton, by her own account, had very definite beliefs about the upbringing of children and the type of children's
The Origin of New Ideas

literature that is consistent with these beliefs. Her work reflects this philosophy.

The paucity of prior intellectual effort must be judged in conjunction with the fact that this writer was enormously successful in her field.

It is this ability to specify what ideas are wanted and to have them emerge into the conscious intellect that is of interest to epistemologists endeavouring to explain innovation in ideas. What appears to happen is that the writer starts with an idea for the work. This is the covering idea which determines the validity of new ideas, and annexes these new ideas where appropriate, and grows and matures in the process. The covering idea has some influence on the flow of new ideas in that clearly incompatible ideas are not generated. A writer may have an idea to write about the exploits of a fictional bomber group in Second World War Europe. In sitting down to write he would be very surprised if the flow of ideas related to some story about the expedition of the Spanish Armada. Such a violation of the writer's specification does not occur. If this were not the case, not only would it be impossible to write a coherent story, but it would be impossible to think consecutively and constructively about any matter.

Producing Understandings

The difference between the production of creative writing, and the production of understanding considered as knowledge, lies in the method for producing the solution specification. Knowledge production requires that the solution specification should be as true and complete as possible, whereas creative writing may commence with only the sketchiest of templates. However, it is unlikely that any solution specification is complete, and creative writing may, in certain cases, have a very full outline to work to. The main difference between the two is the purpose of the work and the demands for truth, accuracy and precision, which are built into the solution specification. The tying of the solution specification to reality through the correct understanding of truth results in the production of knowledge.

That new ideas are generated in response to the specification implies a relationship between two logical entities which may be called The
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Required Idea Set and the Idea Generator. The nature of the relationship is one of learning, choosing, and specifying by the individual and the creation of the required ideas by the source of new ideas. This source of ideas responds to the meanings of specifications and is sensitive to the idea of truth. New ideas, whether true or false, must be seen as creations rather than as interpretations, inventions, or discoveries. The character, function, and mode of operation of this creative source of new ideas should be investigated in order to clearly understand the process of innovation.

Human beings analyse problems and understand solutions through the media of language and meaning, and an examination of these foundations of thought and understanding is necessary prior to the investigation of the psychological processes and the creative resource.
CHAPTER TWO

LANGUAGE AND MEANING

Language capability is not necessary for problem solving. Animals solve problems to achieve understandings of their environments. The requirement for true solutions, which are knowledge, demands the analytical facilities of language. Problems are analysed and defined, and their solutions are requisitioned in terms of general or special purpose languages. A valid methodology for knowledge must always give the same solution to a particular problem regardless of whether the problem solver's working language is English, French, or Chinese. An understanding of language is necessary to show that general purpose languages are transparent to the problem solving procedure. In effect, language is a tool which is superimposed on the common problem solving process.

The Logical Structure of the Understanding

The development of the intellect commences before birth with the unborn child's observation of events surrounding itself. Typically, the child notes the rhythms of the mother's body and constructs models or patterns. These patterns may be subsumed into one general model. This model is not explanatory but simply reflects the order of experience, and aids prediction. The mother's heartbeat is one type of experience which gives rise to a pattern.

The general model that results consists of distinctions of the type: NOW/NOT NOW; PRESENT/NOT PRESENT; EXPECTED/NOT EXPECTED

The new-born intellect has therefore at least one understanding or program and that has the capability of analysing experience in time according to simple logical rules. The logical analysis program or understanding is applied to all experience following birth.
The course of infant intellectual development has been explored by Piaget and others, and this has already been discussed. On the foundation given there, a theory of intellectual growth based on simple distinctions can be put forward. The new-born child learns to distinguish between itself and external reality, and between itself and its mother, thus learning spatial and personal distinctions. These distinctions are based on I/NOT I and THIS/THAT. These are combined with temporal analysis by distinctions like IS/IS NOT and WAS/WAS NOT. These distinctions may be binary in new-born children, but very soon three- and four-way and greater distinctions can be made.

The understanding is therefore a structure consisting of distinctions and structured internally according to those distinctions. These distinctions as coherent sets are called logic. These distinctions refer to events of experience of reality and their meaning is structured as the model of that reality. A meaning can be simple or complex depending on the analytical depth of the distinction array or logic.

The common models of reality made by the individual have already been discussed. Effectively, the general model of reality forms the base and understandings of experience, as logical entities, are built upon it and relate to it as superstructural extensions. The personal reality of the individual will, for example, consist in a model of reality which relates other models of reality such as those appertaining to the home, the office, the local geography, the shopping centre and so on. Within each sub-model there are further models relating to understandings of physical objects, people, and metaphysical entities such as organisational structures and procedures. These models are arrays of distinctions or logic sets.

Understandings are often combined into one model of reality. For example, the physical sub-reality that is the home may be analysed into smaller segments which are the rooms, and within the rooms are objects all of which are understood in particular ways. The metaphysical sub-reality that is the home is understood in terms of purposes and people and the relationships between those people, which are functional, emotional, and moral. The two sub-realities are integrated in a common model of reality in such a way that there is normally no separation between them.
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The whole intellectual construction is an array of distinctions, the path through which follows a pattern somewhat as follows:-
Not-I; this is external to me
This model of reality; not that
This sub-model; not those
Physical object; not metaphysical
Human being; not inanimate object
Colleague; not other
John Smith: Distinction array which distinguishes John Smith from all other known individuals. This follows a common pattern based on gender, age, status, appearance, and so on.

The term “metaphysical” is understood to mean “having a real existence which is not physical” The State, for example, has a real non-physical existence. Metaphysical entities can only be perceived through the grasp of ideas conveyed by language. No animal can become aware of the State.

The Foundations of Language

Language is the solution to problems of thinking and communication. Its business is to enable the analysis of experience and to facilitate the exchange of understandings. Every general purpose language is founded on experience. The meanings of words are either defined by the experiences through which they were learned or indirectly defined by other words which were themselves learned from experience. The formula for language learning that is applied here is exactly the same as for any problem of experience and results in the understanding of the language. This is:

EXPERIENCES+WORD--> PROBLEM=MEANING OF WORD--> SOLUTION=UNDERSTANDING OF WORD

The word plus its associated experiences constitute a problem which is submitted, usually intuitively, to the problem solving process and this results in a solution which is the meaning or understanding of the word.

Language rests on useful distinctions and the understandings that attach to those distinctions. MAN is distinguished by the word from all other species and inanimate objects, and those who understand the meaning of the word also understand how to use it. The usefulness of distinctions
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and the words that indicate those distinctions, may be seen from the labelling of bones. To most people a bone is just that, and if further qualification is expected it may be supplied by the use of adjectives such as small, large, old, etc. Physiologists, and palaeontologists have an elaborate naming system for bones of all sorts. For people who study such things the making of distinctions and the use of names to label those distinctions are both useful and necessary to avoid confusion of thought and failure to communicate.

A distinction set is the solution to a problem. In general, distinctions are made and words naming them are created to suit purposes. The causal chain is

PURPOSE --> PROBLEM --> DISTINCTION SET = UNDERSTANDING --> LABEL

The pursuit of a purpose leads to a problem and the solving of this problem produces a solution in the form of a set of distinctions structured as a model. The model is named for communication purposes.

This scheme applies to all language. It will be seen that this formula is not different from that which produces any type of understanding except for the fact that most understandings are not individually labelled.

Words refer to understandings. Users of the word understand its meaning and understand how to use it. Understandings have two aspects as a coin has two faces. Understandings have a model of the reality and a meaning. The model structures the set of distinctions which, taken together (distinctions and structure), form a meaning. The meaning and the model are the same in that a model without a meaning is nonsense, and a meaning without a model is impossible. Understandings of words have models to which the word refers and conversely the models have meanings which are invoked when the word is used. The understanding of how to use the word is given by the normal behavioural procedure that attaches to models of understanding. The understandings of language are tied to reality through the process in which the language is learned. Only commonly and frequently used meanings are labelled and remembered in the language. In the process of understanding the problem is understood digitally and logically and the solution is expressible digitally and logically. They are, in other
words, analysed and structured in a way which aids solution and understanding.

The set of words that forms an individual's repertoire of a general purpose language has a corresponding set of understandings and these sets are stored within the individual's intellect. The words, individually, act as pointers to their meanings or understandings. In decoding the meaning of a word the pointer is followed from the set of words to the set of understandings. In encoding the process is reversed. It will be remembered that the understanding of a word is also the understanding of how to use it.

In the sentence THE MAN BIT THE DOG there are three models, two of entities and one of action in time. However, the sentence, as a sentence, produces a fourth model or understanding, which is that of a man with his teeth fastened into a hapless dog. What has happened in the reading of the sentence is that the meanings of its component parts have been synthesised into one meaning. The process is again that of PROBLEM = MEANING...> SOLUTION = UNDERSTANDING.

The problem of the meaning of the sentence has been reduced to a solution, which is the understanding of the sentence. The label of the meaning is the sentence itself.

The intellect retains, as databases, its understandings and models of reality, its sets of words and understandings of languages, and a set of understandings of commonly used phrases and other definitions. This last set contains the conventional meanings and usage of phrases as well as general knowledge definitions. The meanings of all other word sets, phrases and sentences, must be created as they occur in experience.

**Digital and Analogue meanings**

Emotion is, in its pure state, a form of energy which is expressed by the intelligent or spiritual nucleus of the intellect. Expressed emotion can be considered as an analogue form of meaning, which has minimal internal organisation. Anger is an example. Organisation of meaning is normally given by sets of distinctions which are referred to as logic.
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The process of problem solving produces distinctions and integrates them according to a logic. The process of making distinctions digitises meaning. Digital meaning is therefore logical emotion or energy.

Analogue influences on intellectual behaviour, which may be unexplainable by the individual, are not necessarily detrimental to the task in hand but are uncontrolled. The effort of the individual to understand his emotions may be seen as the process of converting the understanding given by analogue emotions or feelings to digital understandings. Once they are converted intellectual control may be established. Conversion may be partial only. An individual may understand, for example, what fear is, but a complete understanding may be far beyond his reach, although the feeling may be well-known. The understandings only are converted by this process; the emotions or energies remain, although they are often suppressed, sometimes without adequate reason.

Intuition is a means of non-digital problem solving, and is thought to be the mental process of artists as artists and some others, principally the intellectually immature and the poorly educated. Intuition is defined as thinking in analogue or non-verbal form. The understandings of animals rely on some form of intuition. The inability to analyse meanings verbally reduces the number and quality of distinctions that can be made and therefore can result in an intellect of limited capacity.

Insight is understanding gained through problem solving, which is unexpressed verbally, although it may be expressed verbally by properly formed intellects. Understandings are stored in the intellect in analogue form which are meanings and which, when expressed, are converted to the digital form of a general purpose language. Expression relies on the existence of suitable digital meaning constructions and names. This conversion may pass through several stages of analysis, from an analogue unity of meaning to broad concepts, to detailed ideas, to word forms. The absence of the intermediate logical constructions or distinction arrays will prevent precise expression of understanding. The expression of the understanding of PHILOSOPHY which is retained in the intellect as a complex meaning, must pass through several stages of analysis in its complete verbal expression. The stages of analysis compare to the layout process of a book where the subject matter is logically broken down to facilitate expression and communication.
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Problems which have been solved digitally and formally, provide the intellectual tools to express insights. Problems which are solved intuitively do not, although the solutions may be understood by the individual. It is a misjudgement to assume that those who cannot express their understandings do not understand. Intuitive understandings and the emotional actions which are equivalent in purpose, and in limited effect, to thinking are valid and may be true or false. They may be found to be operating in many situations, especially where normally good intellectual arguments do not provoke the expected response. The digitally structured intellect may have no advantage over the intuitive if the intuitive understanding is based on absolute truth, and the formal intellect is not.

Language and the Meaning of Experience

The psychological processes that create new understandings are independent of general purpose languages such as English, French or Chinese, which are used to form the problem definition and solution specification. Irrespective of which general purpose language is used all solution requisitions may be translated into a common form based on the meanings of experience.

A general purpose language is a set of named meanings and constitutes the most basic level of meaning available to the thought processes of the intellect. Translations between general purpose languages are possible because the words of one language share a common set of meanings with the words of the other language. Diagram 2.1.1 illustrates the language translation process in which the set of words of each language are linked by the set of common meanings. The psychological processes are able to recover those meanings from the language database and the general purpose language in use thereby becomes transparent to the processes.
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Diagram 2.1.1

THE RETRIEVAL OF MEANINGS

Diagram 2.1.1
CHAPTER THREE

THE STRUCTURE OF MEANING

Analysis and Integration of Meaning

In the discussion concerning the integration of the intellect it was shown that understandings may be analysed into a set of more basic understandings. In principle, sets of understandings may also be integrated to create higher level understandings. Since the terms “understanding” and “meaning” are, for most purposes, interchangeable this may be rephrased to assert that coherent sets of meanings may be integrated to form more complex meanings and complex meanings may be analysed into more elementary meanings.

Complex meanings may be explained. These explanations consist of general purpose language sentences. The words of a general purpose language are the most basic level of meaning available to the intellect. Words may represent simple or complex meanings. Words of explanation which are, themselves, complex meanings may be further explained by other, simple or less complex, words.

The word “ball” is a simple meaning. The word “philosophy” is a complex meaning. The distinction rests on the procedure for defining the meaning of the word. If one can point to an object or action in the physical environment and name it the meaning is basic and simple. In this context, to define a meaning as simple or experiential is to say the same thing.

Words that must be defined by reference to other words or meanings are complex. There are degrees of complexity. To describe something as “concrete” is to say that its constituents are a set of simple objects, and it is made by a simple process. On the other hand, the definition of a subatomic particle relies on several theories and other understandings. Although a particle is the most basic physical entity its meaning is extremely complex and refers to a complex set of experiences.
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The corpus of objective knowledge may be analysed, proceeding from general theories to main theories to subsidiary theories to defined sets of experience. These experiences may be explained in the terms of a general purpose language or the concepts of a special purpose language such as mathematics by the set of problem definitions. Ultimately every distinction built into a complex idea may be explained by a set of simple ideas. The process of explanation is analytical and the reverse process of achieving a more general understanding is synthetic. Both processes are necessary in the definition and communication of meaning.

The analytical path for the subjective philosophical understanding is not so clear. The subjective philosophy is an understanding, which subsumes all other understandings. The structure of the subjective philosophical understanding is therefore complex. To understand a subjective philosophy it is necessary to know the constituency of experiences and their related understandings that formed it. No two subjective philosophies will be found to be equivalent because each philosophy has a different basis in personal experience. The intermediate understandings may not be obvious but all complex understanding may, in principle at least, be analysed to the level of the words of a general purpose language.

The process of definition is not confined to experience of the physical environment, although definition is simplest in physical terms. Some understandings have no physical equivalent. The word “idea” may cause confusion in immature intellects because it has no obvious physical characteristics. Emotions fall into the same category. The meaning of the word “fear” is grasped when the individual relates the word to certain feelings which have been experienced and distinguished from all other feelings. The meaning of the word “state” is grasped through explanations given in education, and augmented by reports in the media. These acts of understanding follow from particular events of experience.

The general definition process rests on the set of common human experiences of which physical experiences are a subset. Every meaning is based on, and tied to, a model of reality, where that reality may be any aspect of any natural division of observed reality or may
be virtual, assumptive, fictional, or false. Meaning is meaning of reality and, from the position of knowledge, it may be true or false.

**The Meaning of Reality**

According to Einstein, the Cosmos is understandable, and is therefore meaningful. The universe may be seen as a complex meaning which is analysable into a set of more simple meanings. The culture, morality, the life process, and the idea of God are also complex meanings which are analysable. Reality, as a whole, and in its parts, has meaning and may be considered as a structure of meanings.

The integrated intellect is likewise a complex meaning which may be decomposed into a set of simple meanings. Subjective understanding and knowledge, and objective knowledge, may be defined as meaning constructions organised as models of reality, or parts of reality. The reality construction, in this sense, is not necessarily true.

The relationship between reality, viewed as a structure of meanings, and the intellect, taken as a construction of meanings, may be explored.

Reality is perceived as experience, and experience rightly understood, and correctly structured, models reality. However, intellectual experiences do not amount to sensory observations. They are constructions of the psychological processes. The psychological processes stand between the senses and the data they capture, and the intellect. The sequence of transmission is given by:

SENSE DATA $\rightarrow$ PSYCHOLOGICAL PROCESSES $\rightarrow$ INTELLECTUAL EXPERIENCE

Sense data are subjected to processes which convert them to intellectual experiences. Sensory data, as coherent sets of meaning, are translated into intelligible form as simple understandings by the psychological processes. As simple understandings they may be classed as experiences of reality. They do not amount to understandings of reality. Experiences of reality are converted to understanding of reality by the problem solving method. The form is:

PROBLEM OF EXPERIENCE $\rightarrow$ PROBLEM SOLVING METHOD $\rightarrow$ UNDERSTANDING OF REALITY

Sets of experience when subjected to the problem solving method result in understandings of those experiences structured by models of reality.
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The understanding of experience is, therefore, given in psychological processing and the general case is:

THE SET OF SENSORY INFORMATION --> PSYCHOLOGICAL PROCESSING --> THE SET OF UNDERSTANDINGS OF REALITY

The set of sense data is translated into the set of intellectual understandings by certain psychological processes.

Selection of Meaning According to Purposes

A Boeing 747 may be modelled by another Boeing 747 built to the same specification. The second Boeing is a true and complete physical model of the original. The aircraft may also be modelled logically. The relationship of the physical and logical models may be examined.

The manufacturing process for aircraft requires that all components, assemblies and systems are defined prior to production. The set of definitions of the aircraft, in the forms of drawings and instructions, constitutes a logical model. Since these definitions are the products of human intellects it is reasonable to say that the combined intellects of the plane's designers and engineers contained, at some time, the complete logical model of the aircraft. This subjective logical model was then expressed as an objective logical model. The relationship between the logical and physical models is one of exact correspondence since one determines the other.

In the manufacturing process the real world entity follows from the intellectual modelling process. In knowledge research the reverse is the case. The logical model, consisting of a set of understandings, is built upon a set of meaningful experiences of the real state of affairs.

Reality may, in principle, be modelled in whole or in part. Intellectual models are made for purposes and generally abstract those characteristics of the real state of affairs which are relevant to those purposes. These purposes result in subsets of experience and partial understandings of the real world structures. A purpose to understand reality as a whole would override the selection mechanism but for most intellects reality in its entirety is too vast to be a practical field of study. The general case is that the intellect is aware only of a subset of reality.
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The abstracted characteristics comprise a subset of the characteristics of the real state of affairs. The characteristics that are not abstracted form the complementary subset of characteristics. The original situation may be recovered by integrating the two subsets into one.

For example, it is possible, in principle, that an aircraft could be designed and engineered by one individual whose intellect must contain the complete definitive logical model. If it were designed by two individuals working together, one intellect would hold a subset of the design data, and the other the complementary subset. The integration of these two subsets would produce the definitive logical model.

Scientists may have a purpose to test an aircraft in hurricane conditions. A purpose-relevant model may be built, incorporating only those characteristics of the aircraft which are being tested. The test model is true to both the reality given by the actual aircraft and the purpose, but, since it omits features of the craft unnecessary for the purpose, it is not a duplication of the real aircraft. A complementary subset of the logical data could be specified. The two subsets together define or model the aircraft. The abstracted subset may be seen as the selected meaning, and the complementary subset is the information set necessary to reconstitute, logically, the actual state of affairs.

Within the intellect meaningful constructions are purpose-relevant models existing in the selected reality described by the philosophical understanding, which is the highest level of understanding within the intellect. These intellectual models of reality do not reflect reality as a whole and may be seen to define a virtual reality constructed by the individual for his own reasons.

If these constructions truthfully model, in part, the structures of reality they can be fleshed out by integrating them with the complementary subset of experience, as originally given, to recover the sensory or other data that gave rise to them. This complementary data performs a similar function to information in that it reduces the selected or virtual to actual.

If the original sequence is given by:-

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REALITY ---> SET OF DATA ---> PSYCHOLOGICAL PROCESSES ---> MODELS OF SELECTED REALITY

then the reverse sequence may be given by:->

MODELS OF SELECTED REALITY <---> PSYCHOLOGICAL PROCESSES <---> SET OF DATA

Intellectual models of reality may be compared with the actual data, sensory or otherwise, that produced the original experiences.

The comparison process may be seen to be a function of the psychological processes, being a straightforward reversal of the earlier translation of perceptions into understanding. If the intellectual constructions are false, any attempt to match them to primitive data will fail. The jigsaw pieces will not fit together. The problem solving process, which demands the careful and complete analysis of the problem situation attempts to ensure that the resulting intellectual construction matches its observed reality in all relevant distinctions on a one for one basis. If this is achieved the pieces fit together.

The accuracy and precision of the relationship between reality, viewed as a structure of meanings, and the intellect, taken as a construction of meanings, may be determined psychologically. Intellectual truth may be evaluated by the process of matching the understanding construction and the set of data abstracts of the reality it claims to model. Intellectual constructions that do not match experience are false.

Meaning as a Language

In an earlier chapter it has been claimed that a language is no more than a frequently used set of understandings which have been individually labelled for reference purposes. It is possible, in principle, to label every understanding ever created within the set of human intellects. This would result in a vast extension of the language's stock of words and would therefore be impractical. However, the set of understandings within an intellect may still be envisaged as the set of meanings of a language, even if the set of words or other symbols that uniquely identify each individual understanding is incomplete.

The problem solving and psychological processes that result in new understanding may be seen to function as a selective translation system, abstracting from, and modelling, the real world state of affairs. The set
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of understandings that emerges from the sense data to experience translation process is meaning, coded or not, and is, in other words, a language.

The language of meaning or understanding may be further translated into a general purpose language for analytical and communication purposes. The relationship between the two languages is that the language of meaning encompasses the whole set of understandings, most of which are uncoded and unusable for human communication, and the general purpose language in use labels a frequently used subset of the set of meanings, employing names non-systematically.

Meaning as a language analyses and models the reality of experience and communicates the facts of this reality. Meaning, as a given language, is the language of reality itself. The psychological processes, using this language, communicate those characteristics of reality required by purposes, to the intellect.

In pursuing the aim of knowledge, the intellect requisitions new understanding from the psychological processes. These requisitions take the form of language and the language used is, ultimately, meaning. The intellect and the psychological processes therefore conduct a dialogue about reality based on this primitive language.

The above discussion should be balanced against the fact and functions of objective knowledge. Through the corpus of objective knowledge, and the education process, the intellect can achieve understandings of segments of reality. Objective knowledge is a secondary language to communicate important and useful meanings. The origins of objective knowledge lie, of course, in subjective understandings gained through the problem solving psychological processes.

**Plato's Reality of Ideas**

In considering meaning, the distinction should be made between meaning itself, and the representation of meaning. The Cosmos has meaning and represents that meaning. Words similarly represent meanings. Neither form is, in itself, meaning. Meanings, in their essence, are states taken by spiritual or cognitive entities, and are meanings of reality where those entities are reality. Representations of
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meaning are their expressions. The meaning of a Perfect God is omniscient and unchanging. Nothing can be added to or subtracted from such a meaning. The meaning of a human individual is fragmentary and volatile.

In relating this to Plato's concept of ideas, the comparison may be made between the understanding of the intellect, as integrated by its philosophy, which is based on a virtual reality, and the Perfect Understanding which is reality itself. The final, if impossible, objective of the programme of knowledge is to achieve the perfect understanding. Plato argues that the intellect can reach the Perfect Meaning directly. Communication between the two entities, which is initiated by the Perfect Intelligence through the psychological processes, is based on the language of meaning.
PART TWO

THE PSYCHOLOGICAL PROCESSES

Two distinct sub-problems emerge from the analysis of the problem of idea innovation. The first, which concerns the definition of the psychological processes through which the solution is achieved, is discussed in this part. The second, which concerns the explanation of how new ideas are created, is the subject of Part Three.

The problem solving path is described by which the problem to be solved is submitted to the psychological processes in which the solution is created. The psychological processes are defined and from this analysis the rules for creating knowledge are derived. Failures to achieve knowledge are shown to be the results of contraventions of these rules. The problem solving process is uniform for all problems, both simple and complex. Simple problems pass through the process very quickly and are therefore difficult to observe. Complex scientific or theological problems are much slower in their passage through the psychological processes and some observation is possible. More generally, the existence and functions of the processes come to light when problems such as failures to arrive at solutions or arriving at false solutions are subjected to the problem solving procedure.
CHAPTER ONE

THE PROBLEM SOLVING PROCEDURE

In the problem solving procedure the individual is conscious of a problem and has formed the aim to solve it. The problem solving method has been operated and the problem understanding and the solution specification lie in the intellect. They are not in the conscious part of the intellect since the individual is not consciously aware of them in their entirety, and they are therefore taken to be in some subconscious area. The solution is formed outside the intellect and, when available, appears in the subconscious instantaneously as a completed logical construction called insight. Descriptions of the working of the process generally show that the individual becomes aware that now he knows, without at that moment knowing precisely what it is that he knows. He can, however, begin to express the insight and become consciously aware of the full character of the solution.

The path of the problem through the intellect may be traced from the first consideration of its presence to the final achievement of the solution.

Departments of the Intellect

In previous discussion the intellect has been defined as the compendium of understandings under the direction of an intelligence. In normal working the bulk of the understandings which are known to exist within an intellect, are not present to the current problem under solution. In general, understandings may be divided into those present to the conscious at any given time and those not present. Understandings as logical sets or programs must be stored within the intellect. The intellect must then be divided into two areas which are labelled the conscious and the subconscious. The conscious represents a temporary working area, and the subconscious the permanent area of storage of understandings.

The Functions of the Conscious and Intraconscious.
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The conscious functions while the individual is awake. What is perceived while dreaming occurs in the infraconscious. The term “infraconscious” refers to levels below the conscious without being specific. In general, the conscious has an intermittent existence, and when it functions the individual is aware of external reality. In the process of problem solving the conscious functions as a control or management area in which understandings are brought together and decisions are made. Typically, an event of experience in the form of an understanding is considered in the light of a reality defined by a model.

The tasks of deciding what reality construction should be invoked, and what understanding or meaning should be assigned to the event of experience, belongs to the infraconscious. The infraconscious remembers all decisions and judgments, and orders the results of conscious deliberations in such a way that they can be retrieved into the conscious when required.

The Conscious

The intelligence, as the core of the intellect, is fundamentally a multiprocessor and, having no control program in its immature state, it thrashes about to no useful result. The dreaming state represents this condition. The effect of the conscious state is to force the intelligence to focus on problems in a serial fashion. This is achieved by creating the intellectual equivalent of a brightly illuminated screen or monitor, on which the most prominent of current meanings in the intelligence is displayed. In the reflection on the screen the intelligence focuses on its own most prominent meaning and disregards all others as no more than a background of concerns. The conscious state therefore gives the intelligence intermittent control over the thinking or problem solving process.

All significant thought in the intelligence is reflected back from the conscious to the intelligence. Thought originates as meaning expressed by the intelligent nucleus of the intellect and appears in the conscious to be evaluated. In transmission it may or may not be verbalised. For example, non-verbal reflection includes feelings of doubt or distrust which are consciously recognised as such without immediate access to the logical grounds for these feelings. In intuitive intellects a significant part of the reflective process is non-verbal. In animals it is, of course, wholly non-verbal.

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This reflective system may be compared to a computer system which reflects or echoes all keyboard input on the monitor screen. At a more complex level the system may be compared to a Windows based data processing system in which there are many windows each containing the latest state of one of the individual's projects or models. The process of attending to these projects in this reflective manner may be called thinking. Thinking is the process of bringing meanings into the conscious mind and examining the relationship or logical structure of those meanings. This is usually motivated by a purpose, and from that purpose by an objective which is usually to solve a problem.

The Subconscious

The limitations of that part of the intellect called the conscious are very clear when the problem solving process is examined. While all decisions and other judgments are made in the conscious component, (one is conscious of making them), the full record of the problem investigation, analysis, and definition is not held within the conscious at any time. The solution specification is passed through the conscious but is retained elsewhere and the solution exists outside the conscious although the individual is conscious of its existence and can draw upon it by bringing it into his conscious in a serial and verbal fashion. Furthermore, the stock of understandings, both experiential and theoretical is all likewise resident outside the conscious state. Nevertheless all intellectual property is logically adjacent to the conscious such that it may be accessed easily and quickly. The area of storage that is the subconscious may be visualised as highly organised in the manner of a large and complex database.

Habitual thinking

The subconscious cannot be examined directly by the conscious and there is, therefore, no means of investigating the contents of the intellect, except through analysis of one's own behaviour. Since the subconscious is out of reach, it cannot be directly modified. It constitutes an operating system which dictates the individual's behaviour. Habitual thinking and action results from this library of behavioural programming. For example, the ability to understand and speak a general purpose language such as English rests on behavioural programming. These habitual behaviours are to the individual's advantage in relieving his conscious of a vast amount of repetitive processing. Where the programming is wrong it is hard to correct and
cannot be changed except through the evidences of experience. The truth is not a luxury but an important factor in judgments.

The Problem Solving Path

Problems for solution follow a common path which is given by the form

CONSCIOUS...> SUBCONSCIOUS...> PSYCHOLOGICAL PROCESS...>
INNER RESOURCE...> SUBCONSCIOUS...> CONSCIOUS

Diagram 2.2.1 illustrates the problem solving path in the intellect in which problems for solution are submitted to the problem solving process. The problem of experience, as defined by the problem solving method, is relegated to the subconscious. From there it is processed psychologically to achieve the creation of the solution which is then deposited in the subconscious. The individual becomes intuitively aware that he knows the solution without knowing precisely what that solution is. The solution may then be retrieved into the conscious for full understanding and consideration.

There may be a delay, sometimes a long delay, between the conscious act of attempting a solution and the conscious recognition of the appearance of that solution. During that delay the individual is rarely conscious of what, if anything, is taking place with regard to the problem. In these circumstances of delayed insight it is usually the case that the solution process has been aborted. Each reiteration of the attempt to solve the problem, made in thinking about it, may be similarly aborted for the same reasons until, ultimately, the faults which are blocking the solution process are removed by further study of the problem, and the solution, perhaps unexpectedly, appears in the subconscious. The emergence of the solution into the intellect may be described as intellectual enlightenment. Enlightenment, in complex matters, is often an observable event of experience which has been described as a “flash of intuition”.

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Diagram 2.2.1

CONSCIOUS INTELLECT
- Definition of Problem
- Examination of Solution

SUBCONSCIOUS INTELLECT
- Problem for Solution
- Solution to Problem

PSYCHOLOGICAL PROCESSES
- Solution Creation

THE PROBLEM SOLVING PATH

Section 2.2.6
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CHAPTER TWO

THE DETERMINATION OF MEANING

The problem posed in this discussion is the definition of the psychological processes that are involved in the production of the solution from the solution specification, which is the form of requisition of new understanding.

The problem or problems to be solved will have been recognised because a model of reality has been violated. These problems will have been investigated from the position of the understanding given by that model of reality. The model of reality is defined as true but the problem definitions are incompatible with it. This is the meaning of a problem.

The problem definition and the solution specification, which pass through the conscious in verbal or digital form, will have been reduced to analogue form as a set of complex meanings and retained within the subconscious. Its structure within the subconscious is determined by the problem definition. As a model or series of models it will contain descriptions of the reality of the problem or problems, and definitions of the processes in which the problems have been identified.

The solution that is required is the explanation or understanding of the problem as a whole, based on one comprehensive model. The solution will transform the model of reality currently in use, integrating the problem states of affairs into the reality represented and explained by the new model.

It is not always possible to integrate a problem into the model of reality. An example is given by the problem of the conscious intellect in the functioning of quantum systems. The conscious entity is unexplainable in quantum reality and must be defined as a non-quantum state of affairs. In such circumstances matter and the conscious entity must be separately modelled and linked together through a higher level understanding which predicts and explains both models. The psychological process can then follow the path from one model to the other by passing through the links provided by the higher level understanding. If a means of integrating the known reality and the problem reality cannot be found the problem cannot be solved.

Models of reality, which are not integrated into higher level models, have unsecured or dangling links which function as a barrier to higher level processing. The exception is the model of ultimate reality which predicts, links, and explains everything.
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The Meaning of the Solution Specification

In the previous parts, the stages the intellect must go through in order to arrive at a new or modified understanding were explored. If a valid solution specification, or question, can be produced then the intellectual process can proceed to the acquisition of the new solution, answer, or understanding. There are psychological procedures by which the Inner Resource processes the solution specification to produce the solution.

The solution specification functions as a process control program, which determines the psychological processing of the problem definition. Different questions incorporated into the solution specification give rise to different forms of processing. Radically different realities may lie at the base of these questions. For example, a problem of social poverty may engender different questions depending on the concept of reality in use in the individual intellect. In one intellect the poor are victims of prior social injustices, and in another the poor are victims of their own unwillingness to seize opportunities. The resulting questions, even if they are similar in form, have very different meanings because the meanings attaching to the label “poor” are very different.

The psychological processes analyse the solution specification to determine what it means using the individual's concept of reality as the true definition of reality. The individual will apply different criteria to a book recognised as a work of fiction from one which claims the status of truth. Here the problem solver's general understanding of truth constitutes a higher level understanding of meaning than any incorporated into the problem definition. Criticism is possible because of this superior status of the intellectual understanding of truth.

A process control task definition is produced which reflects both the question and the philosophy that produced it. All subsequent processing of the problem definition is based on this task definition.
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Diagram 2.2.2

THE PSYCHOLOGICAL PROCESSES

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Section 2.2.9
Diagram 2.2.2 illustrates the succeeding steps in the psychological processing of problems. This proceeds in three stages which are analysis, integration, and solution.

The first process is analytical and determines the meanings of all the terms of the problem definition using the inquiring intellect as the dictionary of meanings. The second process is integration in which the now fully defined problem is reduced to one complex meaning. The last stage is the creation of the required understanding and its transmission to the subconscious part of the intellect. All processes are essential to the achievement of the solution.

**The Process of Analysis**

The first stage of the process of the analysis of meaning is to determine just what each module of the problem definition means. The psychological process establishes the meaning of the problem definition by tracing each element of that statement back to its foundation in personal experience. To do this the intellect is used as the source of definitions. Each submeaning is relative to the intellect that formed it, and specifically relates to a particular model of reality.

The definition may be seen as an assembly of meanings in the same way that a car is an assembly of parts. The car may be disassembled into the set of its component parts, which includes all the nuts, bolts, and washers as well as the major body components. In the same way the definition is analysed into its component meanings as derived from experience. The difference between the car and the solution requisition from the analytical point of view is that the car is one assembly whereas the solution requisition consists, in its pre-solution stage, of several unrelated sub-assemblies. Each sub-assembly must be analysed to a level where the meaning of each constituent term may be determined from experience.

An assembly of meanings is synonymous with an integrated set of understandings. Each understanding may have links upwards and downwards in the hierarchy. This upward link specifies the more general reality of which the understanding is a part. The downward links point to more detailed models of the reality of the understanding.

For example, the understanding of mathematics will contain an understanding of arithmetic which itself contains an understanding of addition. The model of addition contains models of cases, such as
addition of positive numbers, negative numbers, mixed numbers, and so on. Since the system of understandings is integrated there are links between all understandings and their models which can be followed upwards and downwards by the psychological processes. The processing paths terminate in the upward direction when an unsecured or dangling link is found. They terminate in the downward direction when all pointers to lower level models have been followed.

Systems of understanding which claim the status of knowledge of reality as it is must terminate in understandings of experience. These understandings may be general or prototypical, such as those given by a general purpose language, or may be specific such as the understanding drawn from an experiment or other event of personal experience. Systems of understanding of reality as it was may terminate in understandings categorised as evidence which may or may not be sufficiently conclusive to justify a claim to knowledge.

The common form of definition is given by the words of a general purpose language which are tied through their understandings to external reality. This procedure involves two data sets, the one containing the repertoire of words and the other the set of meanings or understandings. The words act as pointers to their understandings. Informal or intuitive problem solving does not differ from formal or digital problem solving except that some basic meanings which are normally given by the understanding of language are replaced, in part, by unlabelled meanings of experiences.

Forms of definition such as the complex permanent understanding given by the word “Judaism” are also analysed even though such complex constructions were originally formed according to the rules of the psychological process. The reason is that further experience may have changed these definitions in some relevant way. Analysis of the entire problem definition and solution specification is repeated for every attempt at solution since changes may have occurred which have removed the problems blocking successful solution. These changes may also of course have the opposite effect of making the solution more difficult.

Analysis of meaning will also terminate with understandings of formal or objective knowledge, where the individual accepts the truth of the understandings and lacks the capability to call into conscious consideration the empirical bases of the theories. The psychological Divine Illumination and Revelation
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processes are therefore unable to determine the meaning of this knowledge in terms of experience. Problems to be solved cannot, in these circumstances, turn on the meanings of the formal theories. For this reason only trained and experienced individuals can further develop theory systems. In this case, the individual's understanding of the theory takes the form of one or more propositions which are taken by the psychological processes as commands which constrain, amend or extend the solution specification. Religious doctrine, which is accepted by the believer as true, constrains problem solving, and therefore thinking, in this manner.

The same is true of assumptions. Assumptions such as that of materialism, which cannot offer a set of experiences to support them, function as overriding conditions for the achievement of the required solution.

The Definition of Truth

In any system of understanding the superior and overarching model of reality is given by the topmost understanding in the hierarchy. When this highest level understanding is that of the ultimate reality this understanding fixes the meaning of truth to the absolute. The definition of the ultimate reality is that it accounts for, and models, the whole of reality, and therefore higher level explanations are not required. Working downwards from this ultimate understanding all linked and therefore compatible understandings are also absolutely true. Where the highest level understanding in a system is unsecured its absolute truth is unknown, and all lower level understandings have a truth status relative to the topmost model.

The understanding of truth in the intellect is always paramount. Conflicts of truth claims between the individual's subjective philosophy and the truth definition used in the requisition are possible. If the individual is prepared to consider the possibility of intellectual error the analytical process will proceed. If he is adamant that his understanding is correct then the problem definition is false, and the analytical process may abort if a truthful solution has been requisitioned.

The Process of Integration

The Inner Resource then proceeds, as the third stage of the process, to integrate the fully defined problem definition, from the language or digital definitions upwards, to produce a set of complex analogue
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meanings. The problem definition and solution specification set is then fully defined in terms of the experience of reality of the problem solver. The integration of meaning as a stage of problem solution may be demonstrated in common experience. The process of reading a book may be used as an example of this process.

The Integration of Reading

An examination of the process of reading a book will show the following steps. The individual reads a book written in a language he understands, sentence by sentence. Each word in a sentence is the name of a meaning in the language. In the process of integration the meaning of each word in a sentence is retrieved from the intellect and assembled. The assembly of simple meanings is then reduced to a single complex meaning which is the meaning of the sentence. The meaning of the sentence is held in memory while the next sentence is read. The meanings of all the sentences in a paragraph are reduced to a complex meaning, the name of which is the paragraph itself. The meanings of all paragraphs in a chapter, and all the chapters in the book are similarly reduced and integrated to arrive at the meaning of the book.

The process of integration is accumulative. The meaning of the second sentence is assimilated into the meaning of the first sentence as it is read and reduced to meaning. The meanings of the paragraphs are similarly assimilated as they are read. The incomplete but growing complex meaning, or model of understanding, operates as a rolling snowball, gathering new meanings and modifying itself as it goes. Individual meanings of words, sentences, paragraphs, and chapters, are not necessarily remembered in the process but are over-written by further assimilations.

The accumulative process always proceeds from what is already known to the grasp of the new ideas. In the structure of books, the movement is from the simple and understood, to the new and complex. Number systems are learned before quadratic equations, never after. This is a requirement of the intellect. By the time that the student arrives at the more complex problems his intellect will already contain the prerequisite simpler understandings.

There are two forms of integration which are additive and layered. In the additive form each new meaning is assimilated into the sum of previous meanings to form a new integrated complex meaning. In layering there is a discontinuity in the process. A complex meaning is

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no longer added to but forms a base meaning on which a new complex meaning is built. This also happens in formal learning. A student learns addition and subtraction which then constitutes a layer of understanding. This layer provides the base for learning multiplication and division. The understanding provided by the base is brought to bear in the achievement of understanding of later problems but is not assimilated. Layers constitute submodels.

The result of the reading and meaning integration process is a single complex meaning for the book as a whole. This meaning is an understanding based on a model of reality. The reality is given by the book. It will have submodels corresponding to the objects, animate and inanimate, described in the book and will record a set of processes corresponding to the actions that take place. The meaning or understanding of the model is the moral of the book.

It is sometimes the case that a reader fails to produce a single complex meaning from a book, but instead produces several complex sub-meanings or modules. A module is, therefore, a partial understanding. To fully understand the book it is then necessary to work backwards and forwards among the modules abstracting and correlating to achieve the comprehensive understanding that the single integrated complex meaning would have given. In general, understandings of complex matters display all three forms of organisation, integrated, layered, and modular, within the intellect.

In the reading process integration of meaning is aided by the redundancy of meaning which exists in most writings. Sentences which fail to proceed to a single meaning, using the reader's intellect as the data definition system, do not necessarily cause a premature and unsuccessful termination of the integration process, if the missing meaning can be found in later material or can be replaced by informed substitution.

Readers of hastily produced novels may become aware of inconsistencies. The writer may have called a character by a certain name earlier in the story and now refers to that character by a different name. The reader knows this immediately by an inability, albeit temporary, to integrate the new name into the model of the reality that is the story so far.

Integration of meaning of books may be prevented by lack of the prerequisite understanding or by defects in the book itself. Individuals
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will fail to grasp the meaning of scientific arguments based on mathematics if their mathematical training is inadequate. Individuals may be aware of missing pages in books by the difficulty found in trying to integrate later material without having the complete understanding provided by what has gone earlier, including the missing material. A reader may or may not be able to guess what is contained in the missing pages from what follows in later chapters. If informed substitution is not possible the book cannot be fully understood.

A problem definition or solution specification with missing material similarly fails the integration process. For example, shortcutting the problem investigation may produce a partial or vague problem definition which means that the problem is not fully understood. Redundancy is not a characteristic of formal definitions and inadequate or missing meanings cause process failures.

The part played by constituent meanings in the formation of understandings may be shown by the example given by a simple set of instructions. This may read as follows:-

"IN THE EVENT OF AN EMERGENCY, EXECUTE PROCEDURE A TO OBTAIN MANUAL CONTROL. NEXT PRESS THE KEY TO DISPLAY OPTIONS. MAKE THE APPROPRIATE SELECTION AND PRESS THE EXECUTE KEY".

The logic of the emergency procedure is clear enough, but the meaning attaching to the label "procedure A" is not known. The emergency procedure is not therefore understood and cannot be expressed behaviourally. The missing meaning completely invalidates the procedure.

In a similar way a definition of a problem or a specification of a required solution, which has undefined terms, is not understandable, and is therefore defective and unprocessable. Further definition is required to enable the processes of analysis and synthesis to discover and assemble the full set of constituent meanings.

The Creation of the Solution

The creation of the solution takes place when the Inner Resource has fully defined the solution requisition in analogue form. The solution process does not verify any statements against reality and truth, except where the individual demands an absolutely true solution and can supply the meaning of absolute truth. In the absence of an understanding of absolute truth the process uses whatever passes for the Divine Illumination and Revelation.
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understanding of truth within the intellect and the problem definition. Where this understanding is based on correctly executed problem investigations the solution will be true relative to that problem understanding, but may be absolutely true or false. If the understanding of truth is based on neither absolute truth nor a correct problem understanding the truth status of the solution is indeterminable and is not to be relied upon.

To requisition the absolute truth means that the upward links as given in the model or understanding of the problem, are followed to enable the psychological process to relate the solution requisition to fundamental reality. The problem is then viewed by the psychological processes from the understanding of fundamental reality and absolute truth. The model of reality, which is the basis of the problem understanding, consists of descriptions of entities and actions, and the meaning that attaches to these. Where these descriptions refer to elements of fundamental reality, or derivations from this reality, they point back to the experiences that gave rise to these understandings. Since these understandings are given initially by the Inner Resource, the rules of correspondence in effect warrant the Inner Resource as the justification for the understanding of truth. The net result is that the intellect and the Inner Resource have a common ground in the meaning of truth which serves as the basis for the interactions between the two entities. If there is a solution to the problem it will be absolutely true.

The solution, as a complex meaning in primitive or analogue form, is returned to the subconscious, from where the conscious becomes aware intuitively of the occurrence and existence of the new understanding. For the conscious to examine the solution it needs to be expressed serially in digital or verbal form. If the problem solving process has been well executed the tools to enable the distinctions to be expressed will exist in the subconscious. It is never the case that solutions in analogue form are expressed verbally and completely as found. Expressions are purposeful and draw upon the solution or understanding to the extent of the requirements of the problem. Solving a range of problems often gives a better grasp of the new solution.

The Results of the Psychological Processes

The psychological processes may result in a solution and that solution may be true or false. The conditions for successful solution and the reasons for failures to arrive at solutions and for false solutions are examined below.
CHAPTER THREE

THE RULES GOVERNING THE CREATION OF KNOWLEDGE

The Conditions Necessary for True Solutions

True solutions follow when the problem solving method has been operated correctly. The problem must be recognised from a viewpoint given by true reality and must be unexplainable by the existing understanding of reality. The solution specification must be the product of a rational purpose, which must be concerned with the truth, and the problem to be solved must be fully and correctly understood. The conformity to rational method offers an assurance that the problem solving procedure has been carried out satisfactorily.

The Reasons for Failures to arrive at Solutions

Not all attempts to arrive at answers to problems result in success. Why failures occur is of some importance to the understanding of the problem solving process and the problem is worth the effort of study. Since failure constitutes a real problem it is amenable to the problem solving method.

The problem may be solved using the formula

\[
\text{PROBLEM} = \text{FAILURES}... > \text{PROBLEM UNDERSTANDING}... > \text{SOLUTION SPECIFICATION}... > \text{[Inner Resource]}... > \text{SOLUTION}.
\]

The problem of failure is defined, and is submitted with a question, in the form of the solution specification, to the psychological process. The question is generally "why?".

The answer emerges in the form of a rule that “if one can understand the solution, one will get the solution”. In order to understand the solution the individual must first understand the problem. Failures to proceed to a solution are to be attributed to the prior failure to understand the problem fully and correctly. The test is the process of analysis and integration of meaning. The failure of the solution specification to analyse or integrate, when subject to the psychological processes, indicates the lack of problem understanding.
The corollary of this dictum is that where the question is not understood the answer cannot be understood. This provides the rationale behind the system of problem solving, as an unlimited flow of new understanding could not be integrated into the individual intellect. Intellectual progress must always proceed through problem solving. This may be verified through the study of teaching practice.

A solution specification which draws meanings from more than one metaphysical compartment within a fragmented intellect, cannot be integrated by that intellect. In effect the problem is defined by two incompatible models of reality. To see this one can try to imagine the result of reading only the first half of one novel and the last half of a second novel and trying to integrate the two halves as one complex meaning. A fully integrated intellect can, in principle, allow the integration of all solution specifications since all understandings are linked into a hierarchy, and a processing path exists between any two understandings wherever they may be in the structure.

Fictional realities, understood as such, are not a problem and may be intermixed with models of reality. The analytical process follows the guidance of the individual understanding of truth and will not attempt to further define fictional statements in terms of experience.

Failures to understand the problem can result from a number of causes. Some of these are:
1. An inadequate investigation of the problem, which is a fairly obvious one.
2. An attempt to import into the problem definition or solution specification ideas which are incompatible with a solution. An attempt to preserve the mechanical understanding of Newtonian science, while at the same time incorporating the theory of electro-magnetic fields would be an example. In effect two different problem definitions are being mixed prior to the attempt at solution.
3. An inadequate understanding of the meaning of terms employed in the problem definition and the solution specification.

The prerequisite for reaching a solution is that the problem must be understood in every important detail. The meaning assigned to each word in the solution process is that normally used within the intellect, except where the individual is aware of special definitions. This imposes an important limitation on what can be known. For example, to use the word “truth” in a key context in the solution specification and yet have no understanding of its meaning, will cause a problem in the
solution process. If no meaning can be assigned to the term the process of analysis will stop. It would be wrong to assume that the Source of new understandings will supply the deficiency, or will continue the solution process regardless.

It is no surprise to discover that terms, and especially key terms, must be defined since the meaning of the solution specification and therefore the solution turns on them. Two individuals, both attempting to proceed to solution using the same solution specification, may well arrive at slightly different solutions because they define some terms slightly differently.

Of these causes of failure problem solvers may, with care, correct the first, and an awareness of the second may help to avoid failure. The third may be worrying, if only because human understanding of almost everything is always incomplete. However, since new understandings are always accommodations to existing states of intellects, complete and perfect intellects are unnecessary to the solution process. Providing incomplete solutions are acceptable an incomplete problem understanding is not a cause of failure to solve real problems.

God may be defined as the Father, or as the First Cause, and a solution in either of those terms will result. An attempt to define the term “God” more comprehensively will result in a better solution, but since God is in practice undefinable, all solutions using this method will fall short. The limitations of both the intellect and the problem solving method imply that the full solution must be developed from the initially incomplete nucleus of understanding. Progression in knowledge is the normal case.

The distinction should be borne in mind here between incomplete understandings of problems and inadequate understandings, misunderstandings and non-understandings of problems. A problem, in the scientific way of working, is often broken down into more basic problems. An understanding of a basic problem may serve as the foundation for an attempt at a solution. The result is, in terms of the original and greater problem, incomplete and must be progressively augmented. A mismanaged problem investigation results in an inadequate or mistaken problem understanding.

If the problem is further investigated in order to discover why the Source baulks at definition difficulties it is discovered that solution specifications containing undefined terms cannot be reduced to a single complex meaning because logical discontinuities exist. This integration...
process may be compared to the compilation process in computer language technology and gives rise to the same error types, such as undefined, inadequately defined, or ambiguously defined terms. In the computer system the source program is reduced by another program called a compiler, to a machine-understandable language application program. An application program with any of these faults which, in processing, attempted to manipulate non-existent data items, or execute undefined procedures, would either produce erroneous output or terminate unexpectedly. The psychological processes disallow those possibilities by trapping the causes within the specification analysis process.

The integration process differs from the compilation process in that compilation generates the same or a larger number of executable statements from the source program whereas the integration process generates one complex meaning. The meaning is formulated in the primitive language which is common to the subconscious and to the Source. This primitive language is independent of whatever general purpose language has been used to analyse the problem.

Confidence and belief are factors in the creation of meanings. Lack of confidence and an inability to believe in one's own capabilities cause failure to learn in schoolchildren. These children are unable to solve the problems involved in learning and fail to produce understandings of the matter being studied. Students, and other problem solvers, who are confident of their own intellectual powers will always do better than timid and overcautious individuals. The reason is quite simply that when the solution process comes across a belief or understanding in the intellect declaring, for example, that the solution is impossible to achieve, it accepts this as the truth and terminates the process. The solution process assumes the honesty of the individual, and where he is less than truthful he disadvantages himself.

A similar case of failure arises where there is a contradiction within the intellect. The purpose being pursued, for example, is the achievement of an understanding of God. However, the individual does not believe that God exists. The integration process finds that contradiction and terminates the solution process on the grounds of illogicality. If God is nothing then nothing can be postulated about it. This poses a great difficulty for hostile investigation. St.Augustine said this 1600 years ago when he asserted that understanding follows belief. An open mind is a prerequisite for the investigation of complex problems, including that of the understanding of God.
The Psychological Processes

The Reasons for False Solutions

The reasons for false solutions are related to false views of reality and poor execution of the problem solving process. The problem to be solved must be viewed from a model of true reality. False views of reality, like false theories, provide no avenue to the truth. To postulate that reality is material in its essence, for example, will lead to a true solution if the assumption is true and to a false solution otherwise. In general, the adoption of assumptions leads to the motivation to prove the assumptions correct and this motivation replaces the concern to reach the truth. Assumptions in the form of ideologies appear to be theories but there is no empirical basis for them and they are rarely stated in a form that leaves them vulnerable to scientific criticism. There is therefore no way they can be disqualified. Their effect on the solution creation process disadvantages the problem solver.

Mistaken or dishonest thinking leads to false understandings. The morality of the Source requires that the honesty of the thinker is never questioned and this may produce false understanding. The process of the creation of new understandings does not test for the truth of the solution specification by reason of this morality. Every solution specification is processed as if it were true and honest. Typically, the individual may react unfavourably to a statement and then form the aim to prove it false. The problem-solving process will supply arguments in the form of understandings based on the assumption that the requisitioning solution specification is true. If it is not, the individual falls into error, or deeper error. It is always open to the individual to requisition the truth but the term must have valid meaning within his intellect if it is to achieve its aim.

The grasp of the understanding of absolute truth is a prerequisite to truthful problem solving, which is synonymous with truthful thinking. For this reason absolutely true knowledge can only be produced by truthful, or rational, intellects, which is what Descartes was saying.
PART THREE

THE THEORY OF KNOWLEDGE

CREATION

Of the two distinct sub-problems which emerged from the analysis of the problem of idea innovation, the first, which concerns the definition of the psychological processes through which knowledge is achieved, has been discussed above. The second, which concerns the explanation of how new ideas are created, is the subject of this part.

The Cosmos appears as a set of problems of experience which may be solved and understood. The solutions to the problems are given by an Inner Resource, consisting of creative and logical entities and psychological processes, which lies beyond the bounds of the intellect. The psychological processes lead to intellectual enlightenment through understanding. This process of enlightenment is seen as one of cause and effect where the understanding of the problem and the requisition of the solution through the solution specification are the cause, and intellectual enlightenment in the form of the solution is the effect.

It is found that the process of enlightenment involves an interaction between the intellect and an anonymous Source from which ideas and understandings come. The character of the Source of new ideas is no more than another problem and as a problem it is open to attack in the normal problem solving manner. Its essential character is found to be unlimited creativity which may be seen as a definition of God. It would be an easy step to equate the Source with God. Not all understandings are true. Some, and perhaps most, are plain false. The idea that God gives false understanding seems to contradict the idea of a moral God.

The source of knowledge is defined as a system of God. The nature of a system is that it works to rules. When the rules are understood and obeyed knowledge follows. The system cannot be separated from God. God deals systematically with all requisitions for understanding and knowledge.
CHAPTER ONE

THE ACCOUNT OF THE CREATIVE SOURCE OF KNOWLEDGE

The intellect grows from nothing at conception to the level of a competent operating system able to model reality as it is understood from the processing of experience. The evidence for the intellect indicates that there is nothing innate within it that would account for the ability to create new ideas. The probing of the creative facility shows that another intelligence is at work and interacting with the intellect. The external intelligence is here labelled the Creative Source of new ideas.

In normal individual experience the Creative Source is simply the point of origin of new understandings. The Source does not intrude itself into the conscious but deposits new ideas into the subconscious to be discovered intuitively by the conscious. A study of the Source starts from the assessment of the nature and value of these new understandings, and since all understandings were once new, the assessment of all human understandings. In this, all false, as well as true, understandings have to be considered.

From the study two questions emerge. The first is epistemological and concerns the correct method for consistently obtaining true understandings. Epistemological theories are a normal case of theory creation, and follow from an understanding of the epistemological problem and its solution. This book reflects answers to such questions. The second objective is to find out more about this creative entity. This second project makes use of the methods discovered as the result of the first question. The problem-solution methodology by which understanding is gained can be applied to achieve understanding of the Creative Source.
The Theory of Knowledge Creation

Investigating the Creative Source

The conclusion that the Source is creative power can be reached by a straightforward analysis of the recorded output of the human mind. The examination of the work of a few individuals is sufficient. For example, William Shakespeare, Leonardo da Vinci and Albert Einstein were all creative thinkers. However, the problem solving method produces an equivalent answer in a more useful form since supplementary questions may be asked to enable further exploration of the reality behind this source.

Questions regarding the nature of the source may be put to the Source. In other words it is possible to get the Inner Source to explain its own character, by approaching it with the right understanding of the problem, and a carefully designed set of questions. Some understanding of what these terms mean is necessary since terms which are meaningless to the inquiring intellect have the effect of invalidating the question and preventing an answer.

The basic formula for achieving understanding of the Source is the problem solving method. In the formula

THE PROBLEM DEFINITION...> THE SOLUTION SPECIFICATION...> [SOURCE]...> THE SOLUTION

the area under examination is the "Source". The Source may be seen as a function of reality and the study of this reality is not different from other aspects of reality. The first step towards problem definition is, therefore, to overview the record of this source in experience and define in outline its power to innovate and its method of operation.

PROBLEM = NATURE OF INNER SOURCE...> PROBLEM SOLVING METHOD...> [Inner Source]...> SOLUTION.

Diagram 2.3.1 illustrates the place of the Creative Source in the knowledge creation process. The understanding of the problem of the Source can be used as the problem definition on which to base a question in the form of a solution specification.

There are two cases to be considered. One is the general case which attempts to explain the coming into existence of the whole set of ideas which have entered the consciousness of humanity. This includes the set of cultures, all knowledge constructions, the corpus of literature, and speech. The second case covers specific instances of problem solving taken from the experience of the researcher. Specific cases should be pursued in the endeavour to determine just how the solution is produced from the requisition.
The Creation of Knowledge

THE CREATIVE FUNCTION
Diagram 2.3.1
The Theory of Knowledge Creation

The specific model takes the required idea set, as determined by a typical problem definition and solution specification or other equivalent template, and the solution or answer that follows from this, as the starting point, and the problem is to discover how the new picture of reality, which is the solution, is produced. Having determined that the solution does not originate in the intellect the problem then becomes that of discovering what the Source is, and how it operates. In the detailed investigation problem solving examples drawn from the personal experience of the researcher are preferable since all the terms of the problem definition are already known within the inquiring intellect. Cases of false answers should also be included in this exercise.

As in all studies the full understanding is built progressively from a series of solution specifications in which the evaluation of earlier responses shapes later questions. Each intermediate solution is assimilated into the general problem understanding and widens and deepens that definition. Probing the mechanics of new idea formation leads to the idea of creative power, and attempts to find the limits of this power result in the understanding that it is unlimited.

A possible problem for advanced students of metaphysics is the natural tendency to import their prior theological knowledge into the study. Where this knowledge is in every way true there is no bad consequence, but importing error into the modelling of the field can result in failure to progress. False problem understandings provide no basis for truthful answers. Certain questions, asked in advance of a basic understanding, may result in confusion. For example, to ask either of the following questions
1. Is the inner source a purely human power?
2. Is the inner source the human interface with God?
does not produce answers since both are in effect attempts to alienate God and therefore fail the tests of logic and truth. God is all there is and from the point of view of the Source these questions may seem to limit or even to divide God, both of which are impossibilities. Such illogical questions do not proceed to solutions.
The Creation of Knowledge

The right approach is to follow the guidance of the Source by careful consideration of intermediate answers, and to identify the grounds of existing belief in retrospect. The Source of understanding may be relied upon to guide the honest inquiring intellect.

The answers that emerge from the study are

- firstly, that the Creative Source represents unlimited creative power,
- secondly, that unlimited creative power cannot be further analysed,
- thirdly, that this creative power has no purposes of its own except to supply knowledge and understanding. In pursuit of this purpose the Creative Source functions as a Teacher in situations where the individual has the purpose of learning.
- fourthly, that the conditions under which knowledge and understanding are given, are items of knowledge and understanding and may be discovered,
- fifthly, that the rules for discovery are the ability to understand the answer, and the confidence to requisition it, always subject to moral rules,
- sixthly, that the creative power is an aspect of a wider reality and can only be understood fully from within a model of that reality. By other studies it is found that the Creative Source is a function of the Holy Spirit.
- Lastly, it is given that the Creative Source represents the fulfilment, in part, of a moral obligation to human beings.

The creative entity recognises no name for itself a priori. All the terms and labels used in a solution specification are relative to the inquiring intellect and their bases in experience. The labels “God”, “the Holy Spirit”, and even “the Creative Source”, can only be recognised by the Creative Source as referring to aspects of the Infinite Spirit if they are based on personal experiences, and the meaning of those experiences as given by the Holy Spirit. The interface of the intellect with the Infinite, for the purposes of knowledge and understanding, is the Creative Source, otherwise called the Light of Reason and the Inner Light. Experience of the Creative Source is gained by this study and this experience as understanding provides the student with a place to stand in subsequent researches into the reality of God. Effectively, the seeker after truth warrants the Creative Source as the justification for his understanding of God at every stage of the study. The result is that the Creative Source, or the Holy Spirit, and the student share a common understanding of ultimate reality and truth.
The Functions of the Creative Source

The theory of the Creative Source explains the rules which govern the communication of understanding and truth between the Source and the intellect. The thesis is that all ideas, understandings, concepts and theories originate from one source and appear in the human intellect as completed constructions. The Creative Source, as a function of the Holy Spirit, is an entity which can, of Her own power, create the solution to any problem. The Source is the point of origin of all new ideas ever thought. The Source is the only possible origin of all future ideas and future possibilities for individuals and for the culture.

All new ideas are created by the Source as the immediate response to the requisition of understanding in the form of problem understandings and solution specifications, and are communicated as complex meanings to the intellect. The Source also supports intuition as the informal use of the problem solving method. The Mind of God is the forum where the individual intellect and the Creative Source meet and interact. This creation of ideas takes place within the Mind but is external to the intellect. The special creation of ideas satisfies the epistemological problem of intellectual innovation which must explain not only true understandings but the vast set of false understandings. False understandings are more useful than ignorance or confusion of the intellect since further experience reveals their errors. They are therefore a stage in the progress towards truth.

The practical rule by which the process works is that the Source can impart answers to any question, providing both the question and answer can be understood. This is a requirement imposed by the nature of the intellect. Answers that cannot be understood are useless and understanding the problem is the way to understanding the answer. There is no understanding which is directly obtainable from sense data, but all new sense experiences, as problems, are processed by the problem solving method and the solution is returned by the Source as understanding.

The Source has access to the intellect and draws from it the specification of the knowledge that is wanted. The Source therefore answers the purposes of the problem-solver, and this is equivalent to cooperation. The development of the intellect is a function of its relationship with the Source and proceeds most efficiently when it is viewed as a cooperative interaction. The Source will assist with the formation of the questions as well as supplying the answers, since the definition of the question is a problem in itself. In this the Source is
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guided by the individual's purposes. Since the Holy Spirit knows which way the intellect wants to develop She can prepare the ground in the same manner that a teacher plans and orders lessons. The Source fulfils Her obligations, at least initially, by giving answers that provide opportunities for further questions. These answer-question links are found to move logically from basic understanding to the more advanced. By this procedure the Source takes the role of the Teacher.

The Creative Source understands the individual's meaning perfectly, which may be interpreted as a denial that it is possible for the individual to hide or misrepresent thoughts and understandings. However the Source always views the inquiring intellect as honest. No judgement to the contrary is ever made. At all times the Source assumes the truth of the problem understanding as encapsulated in the solution specification. The Source does not judge nor correct unless the solution specification demands the truth and can define the meaning of the term. For an intellect with no understanding of the truth and a non-rigorous method of working the answers given by the Source can be false. This provides the incentive to consider purposes and methods carefully. If the Source is approached methodically and truthfully, She will always give the correct solutions. A simple unqualified requisition for truth, as the expression of an unqualified purpose to know the truth, is the only requisite. The understanding of truth given as the response is related to the stage of development of truth within the intellect, moving from the simple to the complex. Progression in learning is the normal case.

The Relationship of the Source to God

An Entity of unlimited creative power may be identified with God. The identification of the Creative Source as a system of the Holy Spirit, or God the Mother, corroborates St.Augustine's theory of knowledge by Divine Illumination. All knowledge, sensible, rational, and spiritual arises from the one Divine Source. The relationships of the Holy Spirit to the other Persons of the Holy Trinity, and the functions of the Holy Spirit in the scheme of fundamental reality are described in the next section.
St.Augustine's ideas concerning Divine illumination of the intellect are reconsidered in the following chapter.
The Theory of Knowledge Creation

CHAPTER TWO

THE OLD CHRISTIAN KNOWLEDGE TRADITION

The old Christian knowledge theory knew nothing of psychological processes but does have something to say regarding the creation of new ideas. According to St. Augustine, the starting point for knowledge lies in our own thoughts. The basic claim is that the intellect is enlightened by new understanding after some thought concerning a problem. The intellect is unable to create, invent, or otherwise to discover the truth from within itself. It cannot look out over a field of ideas and abstract or otherwise annex the truth. The truth as understanding is placed within the intellect from an external source. This agrees with common experience among problem solvers that after a period of thought concerning a problem, its solution simply appears within the intellect. How it has been formed or where it came from are not usually clear to the newly enlightened intellect.

The Augustinian Paradigm

The old Christian knowledge tradition concerned itself with how God may be known. It is re-examined here to bring into consideration the old explanation for the problem of how new ideas are constructed and deposited in the intellect.

The old Christianity saw reality as having three forms. The most immediate reality was the world of ideas. Its basic model was that of the thinker, as intellect, engaged in a programme to understand reality. The most significant reality was that of the Creator whose purposes and actions must be understood if the programme was to be brought to success. The least significant reality was the world of matter. The real existence of the material world was accepted but the universe, however, had no contribution to make to the programme since it offered no path to truth or ultimate reality. The old Christianity was therefore content to dismiss knowledge of the world as irrelevant to its objectives.
The Creation of Knowledge

The Principles of the Old Epistemology

St. Augustine, who was for nearly 1000 years the pre-eminent theologian of the Church, set out the method by which the ultimate reality of God may be known. The epistemological method defined by St. Augustine may be outlined as follows:

1. Belief in God is a prerequisite to knowledge of God because the intellect cannot give serious consideration to matters which lie beyond its belief. Those who did not believe in God were in no position to discuss matters pertaining to God. This seems to divide the intellectual world into two incompatible groups, believers and non-believers, but it rests on a sound understanding of subjective epistemology.

2. Knowledge of God and Truth could not be gained through the senses. It would be generally acknowledged that direct knowledge of God could not be gained through the senses, but this principle is interpreted as disqualifying natural theology as a means to knowledge of God. St. Augustine acknowledged the possibility of sensible knowledge but declined to take it seriously as an avenue to the truth.

3. All rational knowledge, including knowledge of God and of Truth is dependent on revealed Truth. Rational knowledge requires revelation as its prerequisite. Serious thinking about ultimate matters, as opposed to the knowledge of the world, can only be done within the Christian tradition which is based on revelation.

4. Knowledge of God and of Truth are gained through intellectual illumination. The event of the emergence of the new understanding or solution to a problem happens suddenly. New ideas simply appear to the intellect and the intellect is thereby enlightened. This is a common experience of problem solvers and other thinkers. Knowledge of God is gained in this same manner.

5. Meditation was traditionally linked to the practice of the paradigm. Intellectual illumination commonly took place in meditation when the intellect was turned inwards towards God. For novices the practice was a requisite; for rational intellects it was an assistance. Meditation is a subjective method that concentrates the mind and assists the growth of understanding and it was well suited to theology as it was practised in monasteries. Its chief virtue in the eyes of its practitioners was that it established an unhindered interface with God.
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The process of intellectual illumination is controlled by structured thinking. Reason forms or orders problems to provide the structure for the meditation. Reason in this sense is a methodology learned through education and other experience and is not an innate intellectual faculty.

6. The righteousness or morality of God, which motivates and governs the acts of God, cannot be perceived through the senses, but is understood through reflection. The individual must be sufficiently interested to pursue the matter through serious rational thought. This agrees with common experience that there are no exclusively moral experiences but moral experience is an aspect of sensible experience which must be separated out in reflective thinking.

The Augustinian tradition generally agrees with experience in that knowledge in the form of solutions to problems of understanding, occurs in the intellect in a manner which might be described as illumination. The Eureka effect is a matter of common observation but the many small gains in understanding made during the working day may similarly be seen as enlightenments of the intellect. St. Augustine interpreted these enlightenments as originating with God but this claim is not so clearly demonstrated in common experience.

St. Augustine has little to say about intellectual development as the result of solving the problems of experience. He was an educated man talking to other educated men in terms of the thought world of the Roman Empire. The Augustinian tradition found itself completely adrift in the thought world of medieval Western Europe. This new intellectual reality was philosophically materialistic and more analytical in its approach to knowledge.
The Problems with the Old Theory

Christian knowledge theory was formed in the intellectual world of the later Roman Empire. It was an advanced system of knowledge with developed rational and spiritual constituents. However, it had no useful theory of the material universe. In the Roman world this deficiency did not matter. In 11th century Western Europe it amounted to a significant inadequacy and Christian doctrine, seen as a system of knowledge, was therefore defective.

Diagram 2.3.2

Diagram 2.3.2 illustrates the Christian picture of reality, and the undefined philosophy of the Cosmos. This inadequacy created the need for an additional system of knowledge to explain the world. That knowledge system might have been complementary to Christian knowledge if it had been constructed in the Christian era. As it happened, a philosophical system, already 1500 years old and therefore predating Christianity, was imported to meet the needs for knowledge. That system was both incompatible with Christianity and far better organised to support debates.

The medieval situation was defined therefore by two competing systems of knowledge. It was not, however, the conflict of like with like. Each system occupied a different part of the knowledge spectrum and they
could be regarded as complementary. Christianity was concerned with ideal reality and supernatural knowledge and materialist philosophy was concerned with knowledge of the world and the two systems in combination accounted for all significant medieval human experience.

The philosophies of the competitors were different and non-overlapping. Christianity was interested in ultimate reality and truth which are fundamental to knowledge. Christianity saw life as a stage on the path to eternal beatitude in the hereafter and its purposes were concerned with morality in this life as a preparation for eternal life. Materialism was interested in the physical universe. The medieval expressions of materialism seem to amount to little more than interest in improving the understanding of the universe. Its best definition is found at the end of the Middle Ages when Bacon described it as the philosophy of adding to man's estate. Materialism can have only material ends.

The effects of two competing systems of knowledge within Western culture were that there were endless disputes and the culture began to fragment. With the establishment of the cathedral schools and universities a second problem with Christian knowledge theory became apparent.

**Explaining how God is Known**

The reform in education had removed theology from the oversight of the monks. From the beginning of the second millennium theology, as an independent discipline, underwent radical changes. The world of Christian learning was based on idealism and Western culture in its philosophical immaturity was completely materialistic. In increasing numbers theologians abandoned the traditional idealism for materialism. Christian idealism came under competition from materialism to the point where idealism was a minority understanding in the schools and universities.

This led in turn to another change. Christian knowledge theory had no method for objective knowledge. Christian knowledge methodology was subjective, and did not lend itself to group participation and supervision. Dialectic, as used by the philosophers, seemed to offer a suitable solution and theologians adopted it in preference to meditation and Divine Illumination as their method of advancing knowledge. Dialectic had been known and used from Roman times. Its chief uses were in teaching, exegesis, and in the development of arguments, and was more useful than meditation in the objective situations of the
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classroom and the debating hall. The change was resisted by the meditatives but without success. By 1130 theology in the schools was subject to dialectical method exclusively.

A further epistemological change followed logically. The long established Augustinian paradigm was well-suited to monastic methods. In the more objective environment of the schools with the atmosphere of debate the paradigm was found to be difficult to use, and foreign to the materialist mind, and was abandoned. Theology as it was conducted in the schools and universities was not the same discipline that had existed in the monasteries.

The epistemological changes that were made quickly brought the reformed discipline into trouble. Theology in the schools relied on the Christian canon for its knowledge of God and on the authority of that canon for credibility. While the Christian canon was beyond dispute the exclusive use of dialectic had no obvious disadvantage. When this knowledge was subjected to critical analysis its truth could not be justified by dialectical methods alone. Dialectic is not a method for the investigation of reality. Critics would not consider the canon as knowledge unless and until they were satisfied it had been achieved by valid methods. The ultimate question in critical analysis was how dialectical theologians knew about the God described in the writings.

Augustinian knowledge theory was offered as the explanation for Christian knowledge of God but theologians in the schools and universities did not use the method and never really understood it. In the separation of academic theology from monastic methods the link between theory and practice had been broken. In all disciplines research and scholarship are complementary activities, practice giving experience and increasing knowledge. In the Christian system that practice was based on meditation and the Augustinian paradigm. In a situation where research in the disciplinary field has been abandoned only scholarship is left. This situation has persisted in academic theology for 800 years.

The problems caused by the radical and arbitrary changes of method in the schools and universities eventually brought the corpus of Christian knowledge into doubt. Theology was divorced from its supernatural reality and increasingly irrelevant in the world of learning. Kant and the Positivists in the 19th century carried this criticism to its conclusion which was that Theology could not, and did not, know of a supernatural God. Theology, using logical methods alone, was epistemologically discredited. Christian doctrine was not therefore knowledge. In the
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days of St. Augustine Christian knowledge thrived in competition with secular knowledge, including the philosophy of Aristotle. In the Middle Ages theological incompetence prevented the adequate defence of that knowledge.

Explaining the World

In the Middle Ages the task of explaining the world was the function of Natural Philosophy. The method of philosophy was dialectic. Dialectic relies on a canon of knowledge and initially this was supplied by the Scriptures. However, the Scriptures did not explain the world. As Aristotle's writings became available they were increasingly preferred by the philosophers until they, and not the Scriptures, provided the canon for dialectic. The new approach quickly led to conflict with Christianity since Aristotelianism recognises neither a personal God, nor the act of creation in time, nor the eternal survival of the human soul.

The development of a synthesis of Christianity and Aristotelianism using logical reasoning was seen as the way to an integrated system of certain knowledge. The problem that then confronted the philosophers and theologians was that while Aristotelianism was a logical system Christian knowledge was not. Aristotelianism could be fairly easily integrated into a unified system but Christian knowledge posed major problems. The problem was solved by rejecting the existing form and content of Christian knowledge and proposing a new natural theology which would rewrite Christian knowledge according to the rules of reason and logic. By reasoning from experience of the world the natural theologian would arrive at proofs of the existence of God. Unfortunately no proofs of the existence of God have been found.

In the light of Postmodern criticisms of logical reasoning and the claim that this method does not give knowledge of reality as it is, the medievals made a major error in knowledge theory and practice. This error deprived the Western tradition of its foundation in absolute reality and truth, and constituted the first cause of the present difficulties of Western culture.

For five centuries after the Aristotelian debacle Christianity retained its status in the culture as knowledge of ultimate reality until Kant told the world of learning that there was no way that God could be known. Christianity became myth and the idea of God was no longer admissible in learned discourse about reality and knowledge.
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The old Christian theory of knowledge defined how God is known. Divine illumination of the intellect is not a special case but is the only way human beings gain knowledge. Through Divine illumination of the intellect God reveals knowledge of Himself to the student of ultimate matters. The next section discusses how the Holy Spirit supports inquiries into the truth.
CHAPTER THREE

THE AUGUSTINIAN PHILOSOPHY OF KNOWLEDGE

The history of Augustinian knowledge theory reveals two major problems with the old paradigm. They are:-

* The inability to explain the material universe.
* The lack of an objective knowledge methodology.

These problems were, in the Middle Ages, serious deficiencies in Christian knowledge theory. St.Thomas Aquinas defined the necessary changes to Christian method to enable it to account for the world of experience. The Augustinian paradigm is entirely compatible with science, which remedies the other deficiency in Christian theory by supplying a method for objective knowledge.

St.Augustine did not give a precise definition of the method of Divine illumination of the intellect and such explanations as exist have the appearance of being rather sketchy and superficial. The difficulties of the Franciscans in the Medieval debates about the methodology of knowledge stem from this imprecision. It may be observed that knowledge of the human psyche was not well developed at any period of the Middle Ages and a detailed psychological explanation of the Augustinian paradigm would not have been possible. St.Augustine and his immediate successors would have seen the matter as one of practice and not of theory. The importance of practice may be emphasised by comparing the method to swimming or riding a bicycle, where all the theory in the world is of no help to the novice, and is entirely superfluous to the expert. It is the demand of objective knowledge for an explanation of the method that makes the theory necessary.

Meditation, as the path to Divine illumination of the intellect, was a common practice in the monasteries, and the meditative was keenly aware of the nearness of the Presence of God. The method of meditation may be described within the context of the psychological theory outlined above. The system of consciousness has two distinct functions which are concerned respectively with experience of reality and...
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problem solving. The conscious intellect is, at any time, either observing or thinking. In meditation the intellect avoids thinking and concentrates exclusively on observation of experience.

Observation is controlled by purpose. The purpose to observe the inner spiritual environment brings the intellect into a state of deep concentration and peace in the vastness of logical space. While God may not be observed the Presence of God is observable at the level of individual spiritual awareness. The turning of the intellect to God, and the ensuing sense of the Presence of God, brings the intellect to the point where interaction with God becomes a reality, and spiritual experience is the result. This interactive experience may take the form of learning. Meditatives in the tradition of faith seeking understanding would expect to be intellectually enlightened by this experience.

The method of learning directly from God was used by several religious sects in the Middle Ages, and by the Quakers in modern times. The Quaker doctrine of the Inner Light does not differ in any important way from the Augustinian paradigm.

Knowledge as the Gift of God

Neo-Augustinian knowledge theory sees all knowledge as the gift of God. As developed by St.Augustine, Christian knowledge theory was based on Divine teaching. This teaching comprises both experience and intellectual illumination.

The revised paradigm states that all knowledge is given by the Holy Spirit. St.John states the teaching of Jesus that "The Holy Spirit, whom the Father will send in my name, will teach you everything". (John 14:26).

The Holy Spirit teaches by experience. The Spirit gives the problems of experience and also gives the solutions to the problems in the form of understandings. The combination of problems and solutions is necessary to intellectual development. The Cosmos, which is the creation of the Holy Spirit, is a source of the problems of experience, and the Creative Source, which is a function of the Spirit, is the origin of the solutions or understandings.

The forms are:-
HOLY SPIRIT = REALITY---> EXPERIENCE---> PROBLEMS
The Holy Spirit, which is reality, gives experience which appears to the intellect in the form of problems.
HOLY SPIRIT---> CREATIVE SOURCE---> SOLUTIONS
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The Holy Spirit, through the system of the Creative Source, gives the solutions to the problems upon simple requisition.

In the problem solving process the problems of experience, as understood by the individual, are processed psychologically to achieve understanding and knowledge. This process is the interaction between the individual, as the problem-solver, and the Holy Spirit as the giver of understanding. The solving of the problems of experience results in understanding, or in greater understanding where some understanding already exists. This process accounts for all human understanding, both of spiritual and secular matters.

The Source, otherwise called the Interior Master, the Teacher, the Inner Light, and the Light of Reason, is the creative power capable of solving any problem and answering any question. The Source will assist in the formation of the questions as well as supplying the answers, since the definition of the question is a problem in itself. In this the Source is guided by the individual's purposes. If the Source is approached methodically and truthfully, She will always give the correct solutions. A simple unqualified requisition for truth, as the expression of an unqualified purpose to know the truth, is the only requisite. The understanding of truth given as the response is related to the stage of development of truth within the intellect.

The process of enlightenment therefore involves an interaction between the intellect and the Divine Source from which ideas and understandings come. The source of knowledge is defined as a system of God. The system as an intelligent and creative process cannot be separated from God. God deals systematically with all requisitions for understanding and knowledge. God is actively involved in the intellectual and spiritual development of every individual, and the acceptance of God's help leads to the understanding of God's purposes in the Cosmos.

The understanding that God has designed the Scheme of Creation carries the implication that it is perfect. This Perfect Order must apply to the individual's personal state of affairs in so far as this can be governed by the truth. The spiritual individual therefore sets out to realise this perfect order in his or her own life.

The religious method requires the individual to conform to the Will of God. If the Will of God is perfect, the individual who wills the primacy of the Will of God in his or her life in effect wills God's perfect order. It is not necessary to know the Will of God but only to will it. In practice, God gives assistance in the best way to achieve the most desirable ends.
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While the individual holds firmly to the determination of his will to trust the Will of God spiritual progress is achieved.

The Development System

The world is a development system which functions for all individuals everywhere, and is designed to produce self-creating spiritual individuals. The physical body produces individuation as the initial condition, and the system of experience and understanding produces intellectual and spiritual development.

The right choices must be made and this can only be done on the basis of true understanding which is knowledge. Starting from almost nothing, the human individual is expected to define him or herself, selecting from an initially unknown but infinite set of possibilities. Not every individual achieves the state of conscious self-development. Most human beings exist in the neutral material reality and their development is externally driven by problems which compel modifications of understanding. The neutral reality is the world of animals, human and non-human.

The individual may, however, purposefully attempt to understand the overall situation in which he finds himself, and select his own path into the future. Awareness of the fact and rules of the development system can result in greater progress of the individual towards self-determination.

Diagram 2.3.3 illustrates the Development System and its relationship to the Kingdom of God.
THE DEVELOPMENT SYSTEM

NEUTRAL REALITY

DEVELOPMENT SYSTEM IN CONTROL OF EXPERIENCE

GOOD REALITY

DEVELOPMENT SYSTEM SHARES CONTROL WITH INDIVIDUAL

THE KINGDOM OF GOD

THE INDIVIDUAL IS IN CONTROL OF HIS OWN REALITY

The Development System
Diagram 2.3.3
The Creation of Knowledge

The system initially generates experience which is neutral with regard to the interests of the individual. As the individual becomes rational, which implies knowledgeable and moral, the flow of experience becomes favourable to his interest, within the constraints of the physical reality. The quality of experience improves across the spectrum of models of reality given by the extremes of the sensible creation and the Kingdom of God. The improved experience parallels the differences between the experiences of the champion and the loser in a game such as tennis where both players share the same physical reality but the flow of experience results in success and happiness for one and failure and dejection for the other. Since the character of reality is determined by human experience of it, consistently good experience implies a Good reality.

Through self-development the individual becomes a more powerful being, and this achievement rests on greater intellectual power. The integrated intellect is a prerequisite to full intellectual capability, and it is the basis on which self-determination becomes a possibility. Diagrams 2.3.4 and 2.3.5 illustrate the fragmented and integrated intellects. The fragmented and compartmentalised intellect is the norm for immature and irrational individuals. The intellect is integrated by the fundamental theory which supplies the framework for the understanding of the human experience. In the Christian system this understanding is given by the theology of the Holy Trinity of God.

The choice to progress requires understanding. What is not understood cannot be chosen. Self-determination demands rational understanding as the condition of true choice, and the rational understanding must therefore precede the spiritual. The progression in the control of the self and its circumstances starts with self-understanding, seeing oneself as a being in process of development. From this position the individual may achieve self-management in the rational stage by controlling his or her development towards truth and morality. Self-management may become self-determination, depending on the subjective philosophy and purposes. A typical objective is to understand God's purposes in the Creation and to make choices within that understanding. Self-determination falls short of self-creation, since the development system imposes constraints in terms of the physical universe which override attempts to exercise full independence of choice. True self-creation starts with spiritual dissociation from the physical universe which occurs at the death of the physical body.
The Theory of Knowledge Creation

The Structure of the Fragmented and Compartmentalised Intellect
Diagram 2.3.4

INTELLIGENCE

PHILOSOPHY
- Understandings of Reality

PHILOSOPHY
- Understandings of Reality

PHILOSOPHY
- Understandings of Reality

The Structure of the Reconstructed Rational Intellect
Diagram 2.3.5

INTELLIGENCE

RATIONAL PHILOSOPHY
- Understanding of Fundamental Reality

Understandings of Reality

Understandings of Reality

Understandings of Reality

Divine Illumination and Revelation
Section 2.3.23
The Kingdom of God and Self-Determination

The theory of the powerful and benevolent God is common to the monotheistic religions. Christianity also pictures a new and closer relationship between the individual and God. Christianity has a message which originated with Jesus that it seeks to communicate to every individual. Jesus revealed the existence of the Kingdom of God on earth, for entry to which the personal attributes of love and morality are the only requisites. The relationship between the reality of the Good and the Kingdom of God appears to be one of degree. The beneficiaries of the Good are religious individuals living a normal life on earth, but free from the disadvantages of the neutral reality. The candidates for entry into the Kingdom are spiritual individuals for whom God is the only Power.

According to T.W.Manson, the ideal human life which Jesus describes is life in the Kingdom of God on earth. The moral teaching of Jesus is an integral part of his conception of the Kingdom of God. It is the way of the Kingdom, the way in which God's will may be done on earth as it is done in heaven.

The conditions for entry into the Kingdom are stated in the Great Commandments. The relation of the great commandments to one another is a simple one. The first presupposes that man has discovered God as his Father. Only the Father who cares for his children can be loved in the way that is thought of in the first commandment. But the discovery of God as Father carries along with it the discovery of neighbours as brethren, and to see them in this way is to love them. It is a new relation towards men, created by a new relation to God.

The manifestation of the Kingdom appears to be gradual and directly related to the development in the individual of the attributes of love and morality. Individual human progress into the Kingdom starts with the first step of purposefully trusting God. Intimations of higher and better realities manifest in the experience of the individual and these become more pronounced as the intellect wills the Will of God, where the Will may be seen as the Divine Plan for creation as it applies to the individual. Visions of the Kingdom of God, seen as the leadings of God, act as the motivation to achieve personal participation in the Kingdom on earth.
The Theory of Knowledge Creation

The Kingdom of God is the highest form of given reality and represents that reality that the individual would wish for himself, if he understood all the possibilities for choice, and all the possible consequences of his choices of behaviours. Every individual may choose whether or not to opt for entry into the Kingdom and for eternal survival, and this choice is made on whatever understandings can be brought to bear on the problem. The achievement of the purpose of eternal self-continuity in the Kingdom involves intellectual effort as a minimum condition.

Conformity to Augustinian knowledge methodology, the willing of the Will of God, and the recognition of the leadings of God through the enlightenment of the intellect lead, therefore, to the fulfilment of God's purposes with regard to the individual.
SECTION THREE

REALITY

Human beings do not create their own experiences and the events of experience therefore imply a source external to the human entity. This source is called reality and it is, in part, defined by human experiences of it.

Reality and truth are two sides of the same coin. Claims about reality must be true. Otherwise they cannot be claims about reality. False realities are illusions and assertions based on illusions have no value. The Creative Source tells us about reality every time we solve a problem providing we have followed the practical and moral rules which govern intellectual enlightenment. If these rules are ignored the result is an understanding based on illusion. In philosophising or theorising beyond the facts we endeavour to grasp the meaning of larger segments of reality. So we try to understand physical or intellectual reality as a whole based on a sampling of the facts of experience.

Reality in its entirety cannot be understood from the investigation of experiences of that reality. Starting from the knowledge that the Creative Source will answer any question based on a problem that we can understand, the strategy is to find a real problem of experience the answer to which is the understanding of ultimate reality. Working from this problem definition, the solution specification, and supplementary questions, when submitted to the psychological processes, result in knowledge of God in what is termed methodical revelation.

The methodology of intellectual enlightenment by the Creative Source therefore leads to the understanding of reality, both as a whole, and in its parts. The truth is the meaning of reality and the word "Truth", with a capital letter, is often used to refer to the meaning of ultimate reality, or God.
In the Middle Ages Christian philosophy recognised three forms of reality. One was the physical reality with which every living creature must learn to deal. The second was ideal reality, or the universe of ideas. The third, and most important, reality was God Himself. As Christians their interest was in understanding God, not the physical world. The understanding of God could only be reached by intellectual effort and through the understanding of the ideal reality.

The basic model of ideal reality is that of the cognitive entity, the "I", processing experience to achieve new and extended understandings. To the intellect there is only understanding and it recognises only understanding. That which cannot be understood even as a problem, does not exist for the individual. The individual cannot break out of his process of understanding within his private world of the intellect to observe something beyond.

There is some similarity between this view of ideal reality and Descartes' fundamental proposition. According to Descartes, "I thence concluded that I was a substance whose whole essence or nature consists only in thinking, and which, that it may exist, has need of no place, nor is dependent on any material thing: so that “I”, that is to say, the mind by which I am what I am, is wholly distinct from the body and is even more easily known than the latter, and is such, that although the latter were not, it would still continue to be all that it is".

The limitation of the subjective intellect, to observe only understandings, is shared, for example, with the system of objective knowledge theories. In the theory system the world is a theory. Any insistence that there is a reality beyond the theory is a theory about the theory and that reality, if it exists, might be very different from the
Ideal Reality

picture given by the theory. Physical reality, for example, has been seen at various times as consisting of atoms, energy fields, and particles separated by vast spaces, as well as the sensible reality of bodies of matter in space apparent to everybody. According to Immanuel Kant, whatever the given reality is like might bear no resemblance to the human understanding of it. It is the understanding or the theory with which the individual must deal and not the actuality.

The intellect is not self-sufficient. It exists as an entity in process of development. The developmental process requires the input of experience seen as problems, and also the input of the solutions to those problems in the form of intellectual enlightenments. This development process may, to some extent, be controlled by the intellect. The direction of development may be influenced by the careful selection of problems to be solved. The motivation to control intellectual development is given both by the awareness of intellectual ignorance and error as evidenced by events of experience, and by the need to understand why the development process exists at all.

The ideal reality is here mapped to show its functioning in both normal operation and in knowledge development.
CHAPTER ONE

THE INTELLECT SUPPORT SYSTEM

The classical view is that there is a reality outside oneself which may be observed. These observations, seen as sense data, amount to facts about this external reality. Knowledge of this external reality is based on the factual record given by the senses.

A problem may be seen to occur when subjective experience is examined. People do not experience sense data intellectually and have no access, direct or indirect, to the information that is passed from the senses to the brain. They have, instead, only understandings of sensory events. The physical senses respond to physical processes in the external objective world, but what is actually experienced are subjective phenomena created by the mind. Human understandings of sensory events are subjective translations of physical experiences into psychological experiences and are not direct observations of external reality. There is, therefore, no corpus of reliable physical data on which to base a theory of knowledge of an external reality.

This situation gives rise to a problem of knowledge of reality. If people have no access to sense data they cannot know directly about the external world. They know instead about their own psychological responses to this data. Since subjective experience is psychologically determined, what goes on inside the human mind has a significant influence on what can be known.

The intellect is a component part of the psyche and a complete understanding of the psychology of knowledge demands an investigation of the psyche beyond the bounds of the intellect. The investigation of the human psyche is prior to all other knowledge projects and the conclusions of this study determine what may be known in all other sciences.

The following discussion is concerned with the investigation of the psychological processes that lead to knowledge of reality.
Ideal Reality

The intellect is the compendium of all that has been learned in life. It is the result of the processing of experience and contains no innate understandings. The psyche is capable of more than behaviours learned from experience and the purpose here is to isolate and outline some of the innate facilities of the psyche which play a part in knowledge creation without attempting a formal definition. These psychological processes are referred to as the intellect support system to distinguish them from the intellect itself which is also a part of the psyche. The intellect is able to function only with the services supplied by the support system.

The Functions of the Support System

If certain psychological processes are analysed it is found that their functionality cannot be explained by simple learning from experience, nor can conscious decisions to construct them be given as an explanation. These processes exist, and are beyond individual reach should there be a wish to modify and improve them. They seem to respond only to confidence in their efficacy or to its lack. For example, there exists an ability to recall past experience in an ordered manner. This facility has not been invented by individuals or otherwise implemented as a consequence of any decision to preserve a record of experience. Confidence in one's memory produces some improvement in retrieval of records, and lack of confidence also appears to be self-fulfilling.

The innate processes form the Intellect Support System which, together with the intellect, constitute the human psyche. This is the mental equivalent of the physical system that is the body. The body enables the individual to function in the Cosmos and the psyche gives the required functional capabilities in ideal reality. Together these two systems, the physical and the mental, form the package which constitutes the given human entity.

The Intellect Support System supplies a number of services to the individual, most of which are usually unnoticed and taken for granted.

These are:-

**Internal Intellect facilities**

Foreground Support:
- The system of consciousness
- Divine Illumination and Revelation
Reality

Thinking support
Current status maintenance

Background Support:
Memory management
Retrieval of understanding
The organisation of the subconscious
The management of the conscious/subconscious interface

Creative Source interface facilities
Problem solving
Mental picture formation
Speech

External interface facilities
Experience management
Interrupt management
Recognition of purposes
Language encoding and decoding
Control of the physical body

The Description of Intellect Support System Facilities

The System of Consciousness and non-consciousness

The support system controls the operation of the conscious. The conscious exists only while the individual is awake. Each time he awakes the conscious is reconstituted. The interval between first awareness and full conscious intellectual operation is quite small but is perceptible. In that short time full recovery of current status and information system windows is effected. The process may be compared to switching on a computer system and re-establishing full operational status.

The support system continues to operate in the sleep state, for example filtering noises so that usual noises are ignored and unusual noises will provide the trigger to restore the conscious. The dreaming state provides a picture of the operation of the intellect without the conscious or reflective thought mechanism.

Thinking Support
Ideal Reality

The support system operates the reflective system whereby thoughts are drawn from the intelligence and displayed in the conscious work area. The intelligence may be seen as a cauldron of meanings swirling in a flow of rapidly changing emotion. It is quite random in its processing of meaning. The reflective process, imposed by the support system, forces the intelligence into serial mode. It reads and abstracts from the intelligence the currently dominant meaning and reflects it back to the intelligence through the conscious. The mature intellect endeavours to maintain serial processing of meaning by purposeful concentration of thought and the exclusion of currently non-relevant meanings. In sleep, where the constraining mechanisms do not operate, dreams tend to be disjointed.

Current Status Maintenance

People do not as a rule experience discontinuities such as finding themselves at a railway station and wondering whether they are to travel or to meet someone. Their current operating status is known to them. One may experience what it means to lose current status understanding when, on occasions, as for example waking up in a strange bed, one is for the moment are unable to make sense of the situation. The problem is almost always soon rectified, but it is possible to lose the current status data temporarily or permanently. This current status is updated with every event and individuals always know what they have to do next. If there is a need to phone someone regarding a matter and before it can be done that person phones and settles the problem the current agenda is automatically brought up to date so that the original plan is not carried out. The system operates like a task list linked to project information systems windows, set within logical environments, and is always related to a personal understanding. It is maintained by the support system.

Memory Management

The retrieval from the recesses of the memory of the record of past experience is a common enough operation within the intellect. One speaks of having a good or bad memory. It is rare for an individual to stop to wonder how he comes to have a memory at all. The individual may ponder on the possible paths and links followed by the retrieval facility to discover and bring to consciousness whatever he wishes to
recall, but he is, in the process, aware that he did not design or engineer the system of storage and retrieval.

Retrieval of Understandings

A special case of retrieval is that of understandings, which have been described as programs which set in motion behaviours to deal with specific events of experience. The difference between a record of experience and a record of understanding is therefore that same difference between a data file and an executable program file in a computer. The search criteria for the two types is different and the organisation of the files is different. The support system organises these files taking note of purposes to ensure that important data is related to information systems monitoring those purposes. These programs are invoked, without conscious intervention, by the support system, although in some cases the individual in the conscious state may override the support system's actions.

The Organisation of the Subconscious

One important area of the subconscious is assigned to those executable files which control the physical body. The use of the limbs, for example, is learned and the programs which give the control necessary to walking and other limb operations are stored in the subconscious.

The subconscious may be seen as a stack of layers or modules of understandings. At the lowest are understandings of basic physical functions and at the top is the individual's philosophical understanding of reality and his part in it. In between the two are layers of understanding that aid the translation of the minutiae of experience into recognisable patterns or understandings. The invoking of these programs generally bypasses the conscious, as do all semi-automatic procedures. The support system interprets and responds to the purposes and objectives of the individual in the control of mental and physical behaviour.

The Management of the Conscious/ Subconscious Interface

All decisions and other judgments made by the intelligence in the conscious state are passed to the subconscious for storage. To a large extent they are then irretrievable to conscious searching and
amendment. A subconscious which is alterable at will and whim would be an unpredictable initiator of behaviour and so the support system imposes a level of protection over the subconscious. In general, change can only follow the evidence of experience for the common individual case.

**Problem Solving Support**

There is a continual problem solution creation process going on throughout the thinking that takes place each day. Every stage of the problem solution method is supported by the creation of solutions to the thousand and one daily problems. The solution specification lies at the end of a formal process for ensuring problem understanding. Each stage can be seen as a step forward in the development of understanding. The formal process has the following stages;

* The problem of what the problem is.
  Stage 1: The understanding is gained of what the problem is;

* The problem of what facts are relevant to the problem.
  Stage 2: The understanding is gained of what facts are relevant to the problem;

* The problem of the best way to organise the facts.
  Stage 3: The understanding is gained of how to analyse the facts;

Stage 4: The understanding of the problem is gained.

* The problem of how to specify the solution.
  Stage 5: The understanding is gained of what would be a solution;

Each stage starts with a problem and involves the formulation of new understanding as the solution. Each stage, furthermore, consists of many smaller problems the solutions of which give small improvements of understanding. The interaction between problem and solution is a frequent process in daily life. In effect, the intellect grows in understanding and power as a result of the interaction between the support system, the intellect, and the Creative Source.

**Mental Picture Formation**

The most obvious service of the Intellect Support System is the creation of the mental picture by which people see the world, and the creation of
the mental pictures that occur when the intellect visualises or when the individual is dreaming. Theories of perception which attempt to explain this phenomenon in a mechanical way cause more problems than they solve and may be rejected as failing to give an adequate account. The data of vision passed from the brain is the raw material of sensory vision and may be compared to the video part of the television signal which is used within the television receiver to recreate the picture. The process of picture creation itself is to be distinguished from that of the handling of visual data, and is a function of the Creative Source. The distinction here is that of a problem definition in terms of data and the problem solution as a picture.

Part of this process involves the combination of two streams of signals, one from each eye, into one three dimensional view. A similar facility is available to animal intellects and combines the views given by eyes, even where the eyes are on the sides of the head, into one usable view.

The visualising process, in which the individual turns inwards to see pictures in his intellect which are not related to the current data of eye vision, are created the same way but from stored data or memories. The visualising process is usually controlled by a purpose, even in daydreaming. Dreaming while asleep is, for most people, purposeless and reflects current physical and mental concerns which are troubling the nuclear intelligence or spirit.

**Speech**

Speaking seems to be one act which is totally under individual control. People say what they intend to say. The meaning of what is said is the meaning they intend to communicate. However deeper analysis reveals that people use verbal constructions which are not selected from some internal library of phrases but are formulated to suit the needs of the occasion.

Chomsky and others have considered how general purpose language statements could be generated. It is not clear that they have reached a plausibly complete position on statement generation but the studies in this area have shown that generation must satisfy a number of complex rules. Individuals are not conscious of these rules when they speak. Most people are not aware that they exist. The generation of correct
Ideal Reality

speech is a process which lies outside the immediate consciousness and control of individuals.

The process of conversation appears to include
HEARING OF SPEECH...> APPREHENSION OF MEANING...> APPEARANCE OF MEANING OF RESPONSE...> GENERATION OF LANGUAGE LEVEL STATEMENT...> VOCALISATION PROCESS

The recognition of the meaning of the heard speech and the generation of the response takes place within the intelligence. There is no consciousness of any act which gives rise to the meaning of the response but, nevertheless, the response is recognised to be what is meant and what it is intended to communicate. People, as intelligences, are intimately connected with meaning recognition and meaning formulation in a way such that there is no discontinuity or progression between “I” and “mean” in the term “I mean”. “I mean” describes a state of being of the intelligence and not an act. Here “mean” is not to be distinguished from “understand”.

The support system lies between the primitive language of meaning or understanding and the general purpose language constructions. It functions as an integrative process for the hearing of language and a differential process for speaking. Its operation can best be seen in speaking where a series of complex meanings are analysed into the understandings of words and the words themselves are assembled according to their internally held understandings of how they are used.

This facility has been the subject of much investigation by linguists and philosophers in recent years. The logic is complex and its complete understanding is still unachieved. But of course the task of analysing meaning into a general purpose language, and the reverse process of integrating language constructions into meaning, is performed by every individual many times a day.

Experience Management

A large part of experience occurs as sensory events, which are electro-chemical actions on the brain. The effect of these data may be compared with, for example, the depression of a key on a computer keyboard which causes a physical data array to take a binary setting. This setting is then polled by the operating system and processed. In a like manner the brain data values are read and processed by the support system and
Reality

an understanding is returned to the intellect. At no time does the intellect have to deal with the raw events of sensory experience.

Interrupt Management and Windows Management

A flood of information must be dealt with every day by human intellects. In the space of minutes the individual may deal with several individuals, answer the phone a number of times, and read some documents, all while becoming aware that he is hot and thirsty, and the time available for work is rapidly diminishing. This myriad of thoughts and their supporting understandings is brought to the intellect without any need on the part of the individual to search his memory with questions concerning the histories of problems and relationships, or to consciously organise the several different streams of data.

The system handles multiple sensory and other interrupts and encapsulates them in an understanding and presents those understandings to the conscious intellect in the manner of a Windows system. Individuals may switch between windows with no confusion of data or understandings.

Recognition of Individual Purposes

Thinking is more than browsing through existing understandings. The problem-solution process occurs frequently in thinking, and operates so naturally and smoothly, that it can, and usually does, pass unnoticed. Generally the flow of ideas which prompts intellectual action is consistent with the purposes being pursued. Non-relevant experience is suppressed, and only pertinent experience is generally allowed to claim the individual's attention.

A degree of control over interrupts is imposed by the support system to reduce the tendency towards chaos. In general interrupts are handled according to a priority based on the individual's purposes, of which survival is always the most important. After that, the principal interests of the individual are given priority and interrupts are suppressed in areas of no interest.

Language Encoding and Decoding
Ideal Reality

The brain and body in combination are responsible for vocalisation and hearing. The support system programming involves the production of control statements which trigger the vocalisation, and the interpretation of interface data settings which result from the hearing of speech. For example, a string of meaning which is the understanding of the sentence or other word set is encoded, and the code which may be seen as command statements, is presented to the brain for vocalisation procedures to be operated. These processes can most easily be recognised in the learning of foreign languages. Pronunciation difficulties are observed intellectually, and vocalisation commands to the brain are modified to obtain improvements.

Two subsystems are involved and there are two areas of the brain which are being addressed, one concerned with speaking and the other with hearing. Problems in the brain with either of those areas do not affect the other. Problems with both areas of the brain simultaneously do not necessarily affect the support system or the intellect, and if they do it is due to atrophy from lack of use. The intellect continues to function even if its interfaces with the brain are damaged beyond repair. This may be seen in cases of brain damage by strokes. There is some evidence that the support system will find other undamaged brain areas to use.

In this description the brain is viewed as the physical controller and the intellect support system as the mental controller. While data passes both ways across their mutual interfaces, it is a rule of general knowledge theory that the mental controls the physical.

Control of the Physical Body

The control of the physical body follows the same pattern as vocalisation. Control statements with appropriate parameters are generated by the support system in response to the act of will of the intelligence. The intelligence takes the state of purpose or intent and this is read and executed by the support routines without further conscious intervention.

The Support System Programming

The existence of the intellect support system becomes obvious when it is asked how an artificial intelligence could be equipped to carry out intellectual activities of the human type. The innate psychological processes are not, in principle, difficult to program and none exercise
choice but simply interpret and execute intellectual judgments. The support system must be classed as preprogrammed functionality.

The support system divides into internal and external subsystems, roughly comparable to the operating system and input-output system of a personal computer. The internal management routines further divide into those foreground tasks which support the system of consciousness and thinking, and the background database system which manages the records of the intellect.

The theory of the intellect support system also explains the observed mental capabilities of animals. In general, animals have a smaller intellectual capability and greater innate support than do human beings. Certain animals, for example, are capable of walking within minutes of birth which shows that limb control is not learned but is a function of the support system.

The account of the intellect support system rests on a survey of the field rather than a study. A full study must include the psychological arrangements of animals which would provide insights into the development of special operating systems and explain why the human psyche takes its present form.

The programming of true problem solving is beyond human capabilities. Here the requirement is to take a problem definition and solution specification, such as that constructed by Albert Einstein for the Theory of Relativity, and to produce within the program the solution in the form of that theory. The chances of doing so appear to be small. Programming the creation of new ideas as solutions to problems is a problem which defies all known techniques. However, this function lies outside the Support System and its programming specification.
CHAPTER TWO

THE REALITY OF THE INTELLECT

For human beings the viewpoint is always from within the intellect. It is the intellect which is the primary environment of the individual and the Cosmos is external, secondary, and logically remote. The Creative Source and the intellect support system have been shown to interface to the intellect. The support system is the interface with external reality and the intellect lies logically between this interface and the Source of new ideas.

Diagram 3.1.1 shows the relationships of the entities comprising intellectual reality, which, in addition to the intellect itself, are:

* The Intellect Support System, which is the most immediate entity. This system incorporates the psychological processes involved in the creation of knowledge and understanding.

* The Cosmic Manager which, through the changing patterns of the cosmos, gives the raw data of experience. The cosmic management system is that set of rules or laws controlling the operation of the physical universe.

Ideas of the Cosmos have been undergoing radical revision in recent times, and the impact of the new thinking on epistemology must be considered. Physics, as the study of space, time, and matter has, in the 20th century, offered theories which contradict, not only previous physical theories, but the commonsense view of the universe. These theories are not compatible with each other and there is no general agreement on their meaning.

According to Relativity, the objective world is spacetime, with all events, for all times, included. There is no present, no past, no future. Every one of the infinity of possibilities, good and bad, physically exists. The picture is that of predetermination in which the human conscious, as a physical state, is also determined. Epistemology, in this picture, is no more than tracing the relationships of conscious states to physical states within the spacetime continuum, and this study is seen as the physics of consciousness.
This understanding of physical determinism is not supported by quantum theory, which itself has problems which are relevant to epistemological theory. Quantum theory emphasises indeterminism and suggests the possibility of free will. Intruding into what seems to be a law abiding universe is a randomness, and future experience is inherently uncertain. There are problems of the relationship between time, matter, and mind, and of the nature of consciousness itself.

For some scientists and philosophers, Quantum physics has undermined commonsense ideas of objective reality, but there is no agreement on
Ideal Reality

the extent to which the nature or existence of reality is affected. The apparently concrete world of matter is claimed by some to be insubstantial. A picture is painted in which the universe cannot be considered, in the traditional sense of the word, as real.

For subjectivist philosophers and physicists, reality is not a property of the external world solely but is intimately bound up with the presence of conscious observers, some theorists claiming that the observer literally creates the universe by his observations. Reality, in this extreme view, appears to be entirely a subjective affair.

Claims of this sort are dependent on the relationship between matter and mind; between physical theory and the theory of the conscious intellect. This latter theory falls within the immediate interest of epistemology and an explanation of the part played by consciousness in the creation of knowledge has been offered above.

The questions of whether physical reality is predetermined or random and uncertain, or whether that reality is substantial and real lie beyond the province of epistemology. Physical experiences are, however, real even if the Cosmos eventually proves to be insubstantial.

Scientific methodology is based on the problems of experience and requires only a source of experience seen as problems. The immediate source, for the conscious intellect, is the intellect support system, and the problems of experience are passed to the intellect by this source. What happens beyond the support system is yet to be determined, since it depends on better physical knowledge. Intellectual reality therefore includes a set of experiences which may or may not indicate the existence of a Cosmos. This set of experiences, when subjected to the problem solving procedure, may be understood in a way relevant to human purposes.

Scientific epistemology therefore takes the position that there is a reality independent of the conscious intellect, that reality is the source of experience, and that experience, correctly understood, is knowledge.

* The Creative Source which gives all understanding of reality.

The concept of imagination as a source of creative behaviour, both intellectual and artistic, has a long history. The idea of the involvement of the creative faculty in the innovation of ideas considered as knowledge, has more recent origins.
Questions regarding the nature and functions of creativity have been explored in the previous part, using the scientific problem solving method. The conclusion is that creativity is unlimited intelligent power and recognises truth, subject to the requisition for truth. The general form is:

\[
\text{CREATIVITY} = \text{POWER} \rightarrow \text{KNOWLEDGE} = \text{POWER}
\]

Creativity is the power to create, and in creating the solution to the problem of experience in the form of knowledge, where knowledge is true understanding and correct mental and physical behaviours, it gives the intellect the power to deal with that aspect of reality which gave rise to the problem.

The Operation of the Intellectual System

The intellect, through its support system, is in tandem with its body during the course of natural life, and its objectives with regard to the body are executed through the cosmic system. The purposes of the individual, both practical and moral, are taken into account by the Cosmic Manager. Feedback, in terms of sensory data, is returned through the support system. Feedback, in terms of feeling, is obtained directly through the individual's emotional investment in the physical body.

The thesis of rational scientific epistemology is that both the cosmic system and the Creative Source are functions of the Holy Spirit. From external reality there is a flow of experience in the form of problems. From the Source come the solutions. Between the two the intellect grows in understanding and power. This arrangement of external physical reality, support system, intellect, and Source, constitute the entities of human intellectual reality. They function as a co-ordinated whole to promote the understanding of intellects committed to exploring the truth.

In general, the materialist understanding sees only the physical universe. Spiritual thinkers look towards the Creative Source as the origin of Divine illumination of the intellect. The completely rational intellect looks both ways. The Cosmos provides a vast wealth of learning material, physical, moral, cultural, and personal. The inner view provides access to knowledge of ultimate reality and the truth.
Ideal Reality

Holding the two aspects in tension the rational intellect makes progress towards the truth.

The individual, in approaching this reality, is faced with the task, not merely of making sense of it, but of using it to his best advantage. That best advantage should aim at more than survival in the physical universe, and should include the question of human fulfilment.
Chapter Three

Knowledge of God

The Explanation of Knowledge of Ultimate Reality

This overview surveys the ways by which individuals come to know of God. These are:

* formally by report, which is the method of education.
* subjectively, directly and rationally. This form of knowledge is based solely and directly on the events of individual experience.

The survey relies on positions established in the earlier chapters, and particularly on the account of the problem solving method and the Inner Creative Source of all new ideas. Rigorous method is not necessary to knowledge of God, as the Source as the Teacher responds to the simple desire to know formulated as a philosophical purpose.

The Creative Source provides the means to explore Fundamental Reality, using the knowledge methods that work for physical studies. Questioning the Source leads to knowledge of ultimate reality. To the more mature theological understanding, which is capable of assimilating complex answers, the flow of explanation from the Source may have the appearance of revelation, which is defined as the free gift of knowledge of God by God. However, as it is the solution to the usual form of requisition of knowledge it is better described as methodical revelation. Revelation as a free and unpredictable act of God, is outside a study of epistemology.

The Source as the Teacher of Ultimate Truth

The Source is a teaching agent through which the individual can come to know of God. The Source is capable of educating, re-educating, and restructuring the intellect to ensure rational understanding. The essential conditions for advance are the desire to know and the belief in the possibility of knowing. The individual cannot acquire any knowledge.
Ideal Reality

which he cannot understand. In order to understand new knowledge the foundation of prerequisite understandings must exist. At a minimum the individual must have a real interest in finding answers to fundamental questions. The methods for achieving this knowledge have been described earlier.

The denial of the possibility of knowledge of God is self-confirming since the psychological processes will take the denial into account and terminate. If this denial is followed by a refusal to take any interest in matters concerning ultimate reality the intellect support system suppresses further experiences of the unwanted types. No understanding is forced onto an individual by the Creative Source and the individual may be permanently locked out of knowledge of God by this type of judgment. Atheistic secular education may produce a similar effect.

Revelation

There is a moral obligation upon God to explain what is going on, which may be fulfilled through what is called Revelation. Revelation commonly includes an explanation of God's initial purposes and objectives, and some account of the problems faced and solved to produce the situation in which human beings find themselves. The explanation provides much material for further enquiry. Revelation of God is provided by the Creative Source in response to the standard form of requisition of understanding and it is subject to the same conditions. Revelation is the prerequisite to human understanding of the truth and is therefore discussed in greater detail in the next part.

Intuition

As stated above, problem solving is not of necessity a verbal process carried out in the conscious. Infants in the prelingual stage form understandings. Artists do not necessarily consciously analyse their work, but comprehend it as a whole, at the intuitive level. Their understanding is real although not verbal. Many individuals, and especially those who do not have the training to analyse and express their intuitive understandings, nevertheless form, hold and act on these understandings.

Such intuitive understandings are formed in the common way from problem understandings. They may lack precision and even truth. On the other hand, where the purpose of the individual is to pursue the truth

Divine Illumination and Revelation

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they may be as truthful as any formal understanding or theory. Pursuit of the purpose of truth, carried far enough, leads to the understanding and knowledge of God, irrespective of whether the intellect is educated and verbally competent or uneducated and intuitive. These understandings are supplied by the Creative Source and therefore have the same authority as any other understanding, theological, psychological, or physical.

Inspiration

As the fiction writer receives a flow of ideas in accordance with the specification of the story to be written, the individual may receive a flow of truthful ideas in answer to some project or other form of inquiry. The Creative Source responds to the individual's purpose and questions with a flow of understanding which exceeds any prior understanding of truth. In practice, the given solutions, as they are understood, are incorporated back into the solution specification and create the snowballing effect which appears as the flow of truth. In going significantly beyond the individual's initial state of knowledge the new understandings may be regarded as inspired. This parallels experiences of theory creation where the new theory can exceed any prior estimate of its character. The Scriptures are often claimed to be inspired in this manner.

Where the individual is highly developed spiritually his or her relationship to the Creative Source may be personal and the flow of understanding may be seen to be from God as a Person to the individual as a person and to bear the warranty of God. In such circumstances the given understanding may be described fairly as the Word of God. Some believers claim that the Scriptures, either in whole or part, amount to the Word of God.

Scriptural exegesis

The individual may also come into knowledge of God formally through religious education. This is the common method for secular belief. The most common source of religious knowledge is the Bible. The reading of the Scriptures poses many difficulties of understanding for individuals, whether educated or not. Where these problems are pursued in the spirit of truth, the Creative Source will return truthful solutions which are accommodations to the understanding of the reader. The
sympathetic reader of the Scriptures may come into the knowledge and truth that they contain. This is also true for any religious writings, including those of non-christians. The only difference at this level of enquiry is the relative qualities of these writings judged on the criteria of truth and usefulness to human needs.

The teaching of the Creative Source may be subverted by positive as well as negative prejudices. The negative thinker denies the value of the Scriptures and so learns nothing from them, but the extremely positive attitude which sees every statement as literally true blocks the Creative Source's attempts to impart a deeper truth and the student gains only a limited understanding. Imposing conditions upon the teaching of the Creative Source may lead to intellectual error.

The Knowledge of God

The individual who is trying to understand the meaning of life and who is concerned to establish the truth in his or her intellect may come into the knowledge of God in all the above ways. This is true irrespective of the religious framework within which the individual develops. This accounts for the widespread and persistent knowledge of God among the races of the world.

The religious framework within which the enquiry is pursued may be helpful or unhelpful. Obsolete religious systems with closed attitudes to experience and further knowledge ultimately limit their adherents' development. However religious knowledge, in its objective form, has a limited purpose and usefulness. Ultimately the religious researcher finds his or her way to the Creative Source, seen as the Teacher, the Inner Light, or the Holy Spirit, and further spiritual and intellectual development becomes the direct responsibility of God. St.Augustine describes the state of learning directly from God as Divine Illumination.

There is a distinction between the knowledge of God given by the Creative Source in response to formal enquiries, and knowledge of God achieved through direct experience. This direct experience may be obtained through a method such as contemplation, or may be the result of an unrequistioned religious or spiritual event. Such experiences may be emotionally overwhelming but they fall within the category of human experience and their explanations as understandings must be
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given, as a later stage, by the Creative Source. It is this type of experience that relates the understanding of God to the reality of God.
PART TWO

REALITY AND TRUTH

The ways by which the individual may come into knowledge of God have been discussed above. The nature and content of Revelation by God and the structure of Fundamental Reality are now examined. The objective is to describe how the theologian and student of religion know of God's purposes and God's Acts. The Acts of God are the Act of Generation which brought into being the Holy Trinity and the Moral Universe, functioning in time, and the Act of Ordination which created the Cosmos. Knowledge of God and God's Acts can be achieved by the correct operation of the rational scientific problem solving method.

Theological inquiry begins with questions about the origin and meaning of human life. When pursued through the rational epistemological method answers can be obtained to these questions through methodical revelation. The theologian constructs the model of fundamental reality from his understanding of revelation. Fundamental reality provides the framework for created reality as a whole and is the interface between the Infinite God and His creation, explaining God's ongoing relationships to the world.
CHAPTER ONE

ULTIMATE REALITY

The Revelation of God

The explanation for the ability of the theologian to know and discuss the character of God in some detail is God's revelation. Revelation is of two sorts. The first kind is the gift of understanding as a free act of God, and the second is in the form of answers in response to the questions of individuals. The promptings of God which are seen as the operation of the conscience are simple examples of free acts of God. The free acts of God are, by definition, not predictable and are therefore not a matter for epistemological rules.

From the position of epistemology, the explanation of revelation is that the theologian, and others, come to the questions of the nature of God and the human situation with some knowledge amounting to an expert understanding, and with clearly defined purposes which give rise to the questions. These questions are defined according to the scientific problem solving method. The questions, both original and supplementary, are submitted to the Source of Understanding in the form of a series of solution specifications. The resulting answers constitute a flow of understanding of God which appears as an act of revelation. The inquiries of individuals whose intellects are developed to the requisite standard of understanding can lead, therefore, to revelation through method. Methodical revelation is a continuing opportunity for individuals to learn about God.

Revelation is absolutely true since it emanates from the moral God, and individuals who are qualified by knowledge and experience to pursue studies at this level need no further assurances of truth.

From the point of view of objective knowledge the claim to truth rests on the proper operation of the rational scientific method. Its truth may be checked in the usual ways since answers must satisfy the solution
specification. Answers must also account for all known phenomena that bear on the problem as detailed in the problem definition and must advance the purpose of the inquiry.

**The Study of God**

The nature of the theologian's work is that of research and the description of the results of that research. The theologian comes to the study of God with an understanding of God, based on the revelation of God as given in Scripture and in personal experience, and having established a moral relationship with God in meditative prayer. The morality is based on the rules of the Moral Universe. The methodology of the theologian is given by the formal relationship with the Holy Spirit as the Creative Source and the formality is based on the rational problem solving method. The understanding of God given in revelation forms the definition of Ultimate Reality and constitutes the nucleus of the Fundamental Theory and all theological problem solving starts from this point.

Revelation differs from the more usual answers to questions by the fact that it is prompted by the human moral problem for which God has full responsibility. God is a responsible and moral being and God, through the Creative Source, is the only possible source of answers. The nature of revelation is that of an explanation. It explains why everybody is in this common situation in the Cosmos. People are morally entitled to this explanation and it is provided in a complete and clear form.

**The Moral Problem of the Human Situation**

Humanity has not created the situation it finds itself in. Human beings ought to understand what it is that is going on which results in the emergence of sensitive and intelligent individuals into a three dimensional universe, and finding themselves beset with problems. There is too much suffering and unhappiness in the world to see life as an obvious and unqualified benefit. Humanity's main problem is lack of knowledge which carries with it a consequent powerlessness.

The moral problem of the human situation in the world is a real problem of experience which may be investigated, defined, and understood.
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Using the rational method a solution specification may be constructed to requisition the solution in the normal way. The problem may be restated as that of the situation of the sensitive and intelligent individual, rather than that of the race, in the three dimensional universe. The method comes to a solution either way, and those solutions are approximately the same. The general case offers a greater scope for supplementary questioning and is preferred for objective knowledge.

Instead of a prior gift of all the understanding necessary to make the best of individual lives, there is a method for getting this understanding as purposes require. There is, however, no clear advertisement of the existence of the facility. Human beings must find out everything for themselves. Why this is so constitutes a typical secondary problem and the answer is complex in that reasons are returned which are both moral and practical. For example, the answer to the question, in part, is that the morality of self-creation prevents any interference unless it is requisitioned by the individual, in part, that random gifts of understanding could not be assimilated by the intellect, and, in part, queries why an intelligent and moral being should not expect as a moral right answers to all real questions, and cites the function of the Creative Source to both answer questions and to teach.

The purpose to understand the human situation in the world leads to the discovery and understanding of God, and God's acts. This is true for any and all individuals and this explains the widespread knowledge of God. Differences in the understanding of God between the monotheistic religions may be accounted for by the absence of a rigorous method for achieving this knowledge.

God as the Infinite Spirit

The three monotheistic religions of Christianity, Judaism, and Islam worship the same God. In a discussion of the Christian understanding of God it may be useful first to align that understanding with the Jewish understanding of Yahweh, and the Moslem understanding of Allah. In Christian theology Yahweh, Allah, and God the Infinite Spirit refer to the same Primitive Being.
Christianity has gone further than the other monotheistic religions in tracing the activity of God within reality as it is known to human beings. The Christian analysis of God's actions in the world revolves around the three channels through which God acts. The first is Love and the power to help individuals; the second is Knowledge and the teaching function; the third is Life and the capacity for choice and growth. This analysis shows God acting in distinctly different ways. The one God takes three different roles in creation which, because they act at arm's length from each other, are seen as three persons.

The theology of the Holy Trinity explains the relationships of these Persons to the Primitive Infinite God. It describes the world of the Intellect and knowledge in terms of the Holy Spirit. It sees Life and the creation of species and individuals in terms of the Christ. It explains Love and power in the world as the province of God the Father.

In Christian usage the term “God” can refer to God the Infinite Spirit, Who is identical with Allah and Yahweh. It can also refer to the Holy Trinity as a divine entity and to each of the Persons of the Holy Trinity. It may be used in relation to an activity as, for example, in God the Creator, or God the Saviour, and it may refer to a characteristic, as God is Love, and God is Truth. The meaning of the term “God”, where it is not qualified, nor implied by the context, is by default in the Christian tradition the Trinitarian God Who is the God of human experience. In the Christian tradition God the Infinite Spirit is ultimate reality and the Holy Trinity of God is the fundamental reality of the Christian system of knowledge.

Each of the three religions sets out the meaning and necessary practices of life according to its understanding of God. These operate at the level of subjective knowledge and may be compared on the basis of their respective understandings of morality and love.

Christianity also intervenes in objective knowledge or culture by defining the purposes of God in relation to that culture, and in describing the work of God in physical and intellectual reality. Christianity is a knowledge-based religion which seeks to explain all aspects of human experience. Christian knowledge is therefore progressive towards deeper understanding of the truth where truth is
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defined as the meaning of reality. It is the argument of Christianity that the knowledge of God's activity in human reality is a necessary foundation for all human knowledge of reality. Without this knowledge there can only be ignorance, conflict, and the denial of all moral law and restraint. With it the whole enterprise of life makes sense and best actions may be determined.

The theory of fundamental reality, based on the Holy Trinity, shows how God's acts are carried through to produce the picture of reality as it appears. Conversely, the rational corpus of knowledge can be traced back to God's acts, and from there to God's purposes. The fact that knowledge is a complete and orderly system stems, in part, from the fact that God intends that human beings should understand.

The Competency and Morality of God

The theologian can draw certain conclusions from the description of God. The first is that God is a responsible being and the second is that God is competent in what He undertakes. From this it is possible to conclude that God fully understands the consequences of His creative acts and whatever happens is morally perfect. The idea of a creation which has gone wrong, to the surprise and displeasure of God, is shallow and out-dated.

The character, purposes, and morality of God are the foundation of theological thinking. The prime characteristic associated with God is that of perfection. God is infinitely loving, absolutely moral, infinitely knowledgeable and powerful. The human situation is the intended result of acts of God and is always either good or potentially good. Potential becomes real through knowledge which offers choice, and the exercise of choice through willing.

The recorded history of the world reflects the understandings of humanity. It is possible to explain that history in a way which demonstrates the love, moral goodness, and competency of God, as well as indicating how failures of understanding and knowledge bring about disasters at the personal and group levels. The explanation for the fate of individuals who were victims of the terrible history of humanity lies in the failure of the human moral understanding. By the separate natures of the psyche and the physical body God ensures that the real essence of
human beings, their emotional and intelligent natures, are never harmed. The fate of the body is not the fate of the psyche.

The Explanation of the Human Situation

Revelation describes the Acts of God that have produced the situation of humanity in the world. Supplementary questions may be asked in the tradition of faith seeking understanding. Through these the theologian comes to understand why God acts as described in revelation.

The primitive situation was that of an infinitely knowledgeable and powerful Spirit, alone and self-contained. Here the word primitive means prior to that first act of creation which affects human beings. The prime characteristics of spirit are intelligence, sensitivity and creativity. From the point of view of epistemology the Infinite Spirit is a moral being with infinite power, and the will to exercise that power intelligently and morally. For epistemology power is given by knowledge and the will is the motivation to understand and choose.

The number of actual possibilities available to the Infinite Spirit is infinite. These possibilities may be divided into good and evil possibilities. The number of each sort of possibility is also infinite. Power is the ability to will and create any possibility, good or bad. It is within the power of the Infinite Spirit to realise any and all possibilities. The Infinite Spirit is rational and moral and wills only the good possibilities. The explanation for evil in the world is that it is willed by others than God.

The Purposes of God.

The explanation of God's purposes is given in revelation. Its explanatory breadth and depth, and its mode of presentation, varies between individuals because, like every other understanding, it is an accommodation to the then-current state of the individual intellect. The aim of this account is to describe, from the position of God's purposes, the meaning of human life, the origins of evil, and the origin of the need to understand.

God desired to extend His Being into every one of the infinity of good possibilities, realising and experiencing those possibilities. The
philosophy of God is based on Love of His Creation which implies the identification of God with His manifestations or expressions. The Love includes the making possible to all His creations of everything that those manifestations could desire for themselves. The risk and the suffering, as well as the joys, belong to God as the creator and the created.

One of the possibilities of God is a community of intelligent and potentially unlimited beings. To understand why human beings are born without understanding and have to acquire it through experience, a short analysis of the options open to God is necessary.

**Cloning New Beings**

In order to have community there had to be a multiplicity of self-managing beings. One, perhaps obvious, way of generating other beings was for the Infinite Spirit to clone Himself. Cloning might work in a physical environment in which the cloned entity could occupy a different place with a similar but physically different body. It cannot work in a non-physical environment. Each copy of the Infinite spirit would function exactly as the original with absolutely nothing to distinguish one from the other. Cloning does not therefore offer a solution to the problem.

**Creating Less Powerful Beings than God**

To generate, as a purposeful act, beings who are constitutionally limited in power and are therefore less than perfect and competent is morally indefensible. The Spirit desires no limitation for Himself as God, and cannot desire it for any beings He manifests. God would carry total responsibility for these beings and this responsibility would determine God's own actions forever. Neither God nor such created beings could be morally independent, and the objective of self-managing beings could not therefore be achieved through this strategy.
Reality and Truth

Self-creating Beings

The problem was solved by allowing the new beings to create themselves. In practice this was achieved through the intermediate stage of generating one being, the Christ. Absolute potential was given to the Christ, to be realised as power in time through interaction with the Holy Spirit Who is the Guardian of the Power and Knowledge. Absolute power can realise any possibility, good or evil.

The Christ, having created Himself and, in doing so become aware of God's purposes, proceeded with the generation of a multiplicity of beings. These beings are generated from the Christ's own spiritual resources and so fulfil the minimum condition of self-creation. The record of the development of life shows a series of intermediate stages in the progress towards the aim of a species of self-managing beings. The creation of human beings brought into being a species with the potential to decide and create its own future. This potential must be realised through understanding and knowledge. The Christ no longer controls the destiny of life solely but shares the responsibility with human beings. As participators in Christ every individual shares co-equally the gift of absolute power although historically individual achievement of knowledge and power is generally small.

With the creation of Man the Christ has arrived at the point of a self-creating community of intelligent and potentially unlimited beings. The achievement will be fully realised when those beings are rational and moral. The ultimate objective, for human beings, is defined as the community of moral beings in the care of God, pursuing moral ends of their own choosing.

The Origin of Evil

The intellect of the individual comprises understandings which express behaviours which may be good or bad. Knowledge which rests on truth prefers only good behaviours, both mental and physical. The power of the individual, in the absence of knowledge, can realises evil possibilities as both understanding and behaviour. Evil enters the world through behaviours which are not rational and moral and it is the product of malformed and immoral intellects. Evil is defined as the result of irrational behaviour and takes the form of destruction which is the
opposite of creation. The destruction of human beings and the cultural creations necessary to the support of life are clearly evil. Evil may exist as potential, in the form of ideas to be acted upon at some future time. Racial hatred is an example.

The containment of evil requires, not only the teaching of rational and moral knowledge and truth, but the condemnation of those ideologies that see the use of force, violence, murder, and terror as means to achieve their ends. Amoral ideologies that do not advocate evil but do not prohibit it are also potentially a source of evil since evil behaviour remains an option. God does not act as a moral police officer. Evil has real consequences in human lives and in the world in general and the human choice, at both the group and individual levels, is to tolerate the effects of evil or to insist on moral behaviour.

The Moral Obligations of God

The moral responsibility of God for His creation is not lessened by the arrangements resulting from His acts. God is morally committed to ensuring that no moral individual suffers through, or is limited by, powerlessness. This moral obligation is discharged in two ways. The first is to offer all understanding and knowledge upon simple requisition. The nature of intellectual growth requires that this flow of understanding is orderly.

The second is to compensate all moral beings for their lack of power by offering to act on their behalf. The condition is trust in God and the trust is a general one, that God is trusted to act in all matters for the good of the individual. In the Christian scheme of reality this function belongs to God the Father. Since this is a moral arrangement between moral beings immoral beings disqualify themselves to the extent of their immorality. God cannot be made a party to immorality. To ensure that God does not interfere in individual lives no assistance is given where it is not asked for and not expected.

In a world which reflects subsets of both good and evil possibilities there are real dangers to all individuals which can only be overcome by the power of God. The fundamental moral obligation on individuals is to trust God.
CHAPTER TWO

THE FUNDAMENTAL THEORY OF REALITY

The theological and epistemological model of fundamental reality is based on the revelation of God which outlines the purposes which fundamental reality serves.

The Act of Generation

The Holy Trinity

The Act of Generation created the Holy Trinity which exists in eternity and the Moral Universe which functions in time. Revelation describes three divine functions, seen in the Christian model as the roles of God the Father, the Holy Spirit, and the Christ Who together constitute the Holy Trinity of God. The Infinite Spirit manifests in each of the Persons of the Holy Trinity but in a self-imposed restrictive form which is required by purpose and morality.

The theology of the Holy Trinity is understood not only from the Acts of God as given in revelation, but from the explanations given by the Creative Source arising from other problems found in experience. Theology, in pursuing the problems of lifeform creation, reaches understandings which indicate the functional division of the creative work of God. Epistemology reaches a similar understanding in seeking an explanation for the struggle for knowledge.

These explanations give rise to the idea of Personhood. The essence of personhood is the eternal existence of self-managing rational beings. The community of saints is in this category. The set of persons is divided into the Persons of God and the persons in God. The Persons of God are limited to the three of the Holy Trinity. The persons in God are engaged in the adventure of the exploration of the universe of possibilities, in the care of God the Father.
Diagram 3.2.1 shows the relationships of the Persons of the Holy Trinity to the Mind of God which is a creative and communications medium functioning in time. The constructions of the Mind obey the rules of the Moral Universe. This schema is logically set within the Infinite Spirit.

Diagram 3.2.2 shows the relationship of the individual intellect to the Mind of God and to the Holy Trinity. The intellect interfaces to the Intellect Support System, and through that system to the Creative Source and the Cosmos. This arrangement functions within the Mind of God, although the intelligence or individual spirit which is the nucleus of the intellect is grounded in the Christ.

There is no spatial distance involved in the relationships between the Persons of the Holy Trinity or between the individual intellect and the Holy Trinity. The interfaces should be understood as logical only and the distances involved between the logical entities are the same as that distance that separates two ideas. In terms of communication it is only necessary for the individual to address God for communication to take place since such communication is within the Mind of God.

**The Moral Universe**

The effect of the first act of the Infinite Spirit is to divide the Will from the Power. The Christ represents the Will and the Holy Spirit the Power. The Holy Spirit, since She is Infinite Power without Will, never intervenes in choice, but simply realises every requisition for change, whether for good or bad, providing the prior conditions have been met. The Will in Christ may be formed by the Christ or by individual human beings as participators in Christ.

The relationship between the Will and the Power is moral, and is subject to the Moral Law. Everything that happens in the Cosmos is the result of the interaction between the Will and the Power, and that interaction is governed by the moral law. Everything that happens in life of an individual, who is a participator in Christ, is subject to the same moral law. Individual moral experience is a reflection of the individual's moral achievement and its expression in behaviour.
Reality and Truth

THE PRIMITIVE INFINITE SPIRIT

God The Father

The Mind of God

God The Mother -- The Holy Spirit

God The Child -- The Christ

THE HOLY TRINITY
Diagram 3.2.1

THE MIND OF GOD

The Cosmic System

The Intellect Support System

The Creative Source

The Intellect

THE INTELLECT AND THE MIND
Diagram 3.2.2
Reality

In order for power to be exercised the Christ, and individuals in Christ, must seek understanding from the Holy Spirit. The Power is never under the direct control of the Will, but the acts of the Will are realised by the Holy Spirit. There is a distinction between infinite power and created power. Created power modifies God's creation in orderly ways. By learning the rules of the creation the power can be used to advantage. Infinite power is not bound by the rules of creation. Miracles rest on this infinite power and are the acts of God the Father.

The Act of Ordination

The Creation of the Cosmos

The Act of Ordination by the Holy Spirit brought the Physical Universe into existence and created the means for giving effect to the purpose of the Infinite Spirit. The aim of the Infinite is the creation of a large or unlimited number of individuals to explore the infinity of possibilities. The record shows the creation of many individuals, divided into many species. By small differences introduced during the physical and intellectual development processes, each individual is different and sees different possibilities as desirable and pursues those possibilities.

The Cosmos constitutes a complex problem of understanding which has to be solved by the normal problem solving process. Christian knowledge is, in part, the understanding of the progress made so far in solving that problem. The current physical state of the Cosmos determines the allowable species, and by the problem solving process the Christ initiates those species as solution specifications and the Holy Spirit realises them as solutions. As the states of the Cosmos succeed each other the problems change and so the range of species is forced to change. There is a relationship between the different succeeding states of the Cosmos, which is that each state is specified by the Christ in furtherance of the Infinite Plan, which ensures the progressive development of higher forms of life. Each state of the Cosmos is therefore a solution to a solution specification formed by the Christ. The Holy Spirit does not initiate any change in the Cosmos, but executes all changes. The difference between the terms "specification" and "definition" is important here. The definition of the Cosmos and of life-
Reality and Truth

forms is the task of God the Mother Who is infinitely knowledgeable and wise.

The tasks of the Christ and the Holy Spirit are executed systematically. The Christ system, seen as Nature, has been created in the same way as the human subconscious intellect. Once problems have been solved their solutions are annexed to the system and operate semi-automatically for further repetitions of the problem. The development and operation of life in the Cosmos is normally managed without interference in the detailed workings of the system. However, the Christ may intervene in the operation of the system if, for any reason, exceptions must be made. The system of the Mother God is the Mind, of which the Cosmos and the Creative Source are component subsystems.

The Christ has initiated all the many changes involved in the development of Life in the Cosmos. The Christ is the common ground of all life, including mankind, and may be defined both as the community in which all forms of life participate, and as the underlying life generation stratum which is intelligent and goal seeking. Since every spiritual being, including the Christ, is self-creating, the Infinite Spirit respects this and does not impose His will upon the operation of the Cosmos. Human beings, as participators in Christ, are creating themselves and their cultural and physical environment. The only constraint is the moral law which is always unavoidable. The physical environment, like the cultural, is created by the way it is understood. Understanding is the consequence of purpose. However, the purpose changes as the result of better understanding, and therefore purpose is the consequence of understanding. This alternation is the knowledge cycle which gives intellectual and cultural development.
CHAPTER THREE

THE THEORY OF CREATIVE POWER

Self-creation and Created Reality

People, as self-creating beings, are realising themselves within a reality that the Christ and they have created for their own purposes. That reality is essential to their purposes and therefore valid and permanent, although subject to continuous change. For the individual that reality is the moral universe in its stages of realisation. For the group reality is the culture as the evolving antecedent of civilisation and it is defined by objective knowledge. In this creative process the purposes of the Christ and the true purposes of human beings are always identical. Where they appear to differ people have failed to solve their problems correctly. If true solutions to real problems are insisted upon, which rational beings must do, then they are proceeding in harmony with the Christ. Any mistakes that are made always spring from poor problem solving. The creative power rests on knowledge. Through knowledge individuals and groups create both themselves and their environment.

The Foundation of Epistemology

The division of the Infinite Power of God into the Will and the Power in the Moral Universe is repeated in the birth of every human infant. Children come into the world understanding nothing, but having a will, are therefore capable of forming purposes. By pursuing the purpose of understanding they gain power. The human being, in a similar way to the Christ, has the facility to obtain new understanding from the Holy Spirit, otherwise called the Creative Source, subject only to the ability to specify the understanding that is wanted. Each individual makes use of that facility, generally without understanding its mechanics. The understanding of how it is done can improve the flow of true and useful understanding. Epistemology is that understanding.
Reality and Truth

For epistemology knowledge is power. The creation of knowledge is therefore the creation of power. Power and creativity are the same and the process of creation of the self is also the creation of the individual's power to create. The world that the individual or group inhabits is created by them and reflects what they are.

Knowledge and the Creative Power

There is an immediate reality and an ultimate reality. Human beings create immediate reality through knowledge and its application. Immediate reality is transient, always changing in response to the acts of the Christ, individuals and groups. As manifestations of the Infinite Spirit reality for individuals is the ultimate reality of God. The ultimate reality is unchangeable. Therefore what is known of the ultimate reality is absolute, and knowledge of immediate reality is relative to human needs and purposes.

A theory of the Cosmos should see it as a means to the realisation of self-creating and self-fulfilling moral individuals, changing as the needs of the development process change. Since the development process, in a self-creating system, is internally controlled Cosmic change is guided by the purposes of Life. The mental state always precedes and determines the physical state. Belief about reality is the key to change.

The whole of creation, in terms of time and space, is under the control of the Christ. Here control is defined as the sole right and responsibility to make changes. The whole of creation, as it is known to Humanity, is under the control of Humanity in the form of the culture, through objective knowledge. The whole of creation, as it is known to individuals, is under the control of each individual through understanding. The choices exercised in the process of control are to be understood as qualified by morality.

The classical view of the Universe, which sees a fixed external reality to be investigated and understood, is not supported here. Rather, created reality takes form according to human purposes, knowledge and beliefs. Created reality is the reflection of the human understanding of it and changes as the human understanding changes. Any claim that reality is “really” something other than that understanding is either a progressive
Reality

step forward or it is irrelevant to objective knowledge and subjective understanding.
The implementation of change is always the function of the Holy Spirit through Her Cosmic management rules and it manifests as different experience.

The fundamental theory defines the metaphysics of knowledge and epistemology is dependent on this definition. The metaphysic of continuous creation is the platform of reality on which the rational scientific epistemology is based, and rational knowledge is the means of change. The management of knowledge, and therefore of the future, has for human beings been largely unconscious, but can be made conscious at both the group or objective, and the individual or subjective, levels. This ongoing creation is basic to all explanations given here.
CHAPTER FOUR

ABSOLUTE TRUTH AND KNOWLEDGE

Truth is the accurate understanding of reality. Since understanding and meaning are equivalent, truth is the meaning of reality. To know the truth about reality is to know what it means.

The meanings of ultimate, fundamental and created realities as given here amount to the truth. Since these meanings are not subject to change they are absolute and the truth they give is absolute. Truthful understanding is equivalent to knowledge and absolutely truthful understanding is absolute knowledge.

The status of absolute truth and knowledge is asserted for the understandings of reality as defined above. This must be subject to the usual conditions that govern rational scientific knowledge claims.

The Theory of Knowledge given here is derived from the corpus of absolute knowledge and the status of absolute truth is claimed for it.
PART THREE

CREATED REALITY

The present forms of the universe and its living constituents have been determined by the decisions of the Christ, and constructed by the Holy Spirit. The mission of the Christ is to give effect to the purpose of God the Infinite Spirit which is to create a large number of individuals, some of whom may form a community of self-managing and eternally existing persons. This has been done in conformity with the rules of the moral universe.

The decisions of the Christ have resulted in the human situation in which we have physical bodies existing in a three dimensional physical universe. However, since the Christ is the ground of life these decisions are to be taken as the decisions of life in all its forms. Human beings, if they were sufficiently knowledgeable, would have made exactly the same decisions as the Christ has taken. Exactly the same judgments would have been made because they are the optimum decisions. This is the best of all currently possible worlds, where the range of good possibilities is limited only by the present stage of development of life.

The current phase of the development programme for human beings as a group is the creation of a rational and moral culture. Human beings, as participators in Christ, are associated with the Christ in this mission.
CHAPTER ONE

THE IDEA OF CREATED REALITY

The existence of Reality is offered as the explanation for the set of human experience. The cognitive self is taken as the datum and all experience is seen to occur to that self, and its source is a reality external to the self. Experiences divide naturally into two categories, the one referring to the ultimate reality of God, and the other to created reality. The path to knowledge of ultimate reality has been discussed earlier. Ultimate reality and created reality meet in the scheme of fundamental reality. Ultimate reality is personal, intelligent and moral. Fundamental reality is systematic, purposeful, and benevolent. These realities provide the substrata for created reality.

In a self-creating system nothing is pre-ordained except its moral foundation and all power is freely available through knowledge. Created reality is specified by the choices of self-creating beings and created according to that specification by the Holy Spirit. However, the transient states of created reality have only a passing truth, and the absolute truth of the ultimate and fundamental realities may be relied on to guide thought and behaviour at all times. The love of God and the morality of creation are the points of departure for all thinking about human affairs.

The Model of Created Reality

In the analysis of created reality the starting point is St.Augustine's observations on the nature of time. In St.Augustine's view the cognitive self never experiences a past time nor a future. Its experiences are always in the Now. It exists in the everlasting present which is eternity.

The experiences of thought lead to the idea of the Intellect which is seen as external to the intelligent and cognitive self. The self is aware of thought and in observing the entities and processes of thought sees them objectively. The intellect may be augmented and changed, perhaps radically, with the assent of the self. There is no observation that the self is changed in these operations and the self is taken to be distinct from them. The world of thought is then external to the nuclear self. The intellect lies in time but not in space.

The experiences of space and matter give rise to the idea of the physical universe which is external to, and farther removed from, both the
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cognitive self and the intellect. The physical body is part of this subreality.

The human individual is seen, then, as an entity with three parts which are the spirit, the intellect and the body. The human spirit or intelligent and cognitive nucleus exists always in eternity. The intellect exists in time and the physical body exists in both time and space. In this model of created reality the human situation is that of the spirit as Will exercising the power of choice based on understanding as given by the intellect, and the physical reality is the external reflection of the consequences of those decisions. New understanding is given by the Holy Spirit on simple requisition. By achieving the right understandings and making the correct choices individuals can change their realities. This is a consequence of the morality of self-creation.

The Natural Divisions of Created Reality

Created Reality, as it is known to humanity, is a reflection of humanity's experience of it and that experience gives information about that reality. The analysis of experience reveals natural divisions. The natural divisions of experience are:-
- the Cosmos, including biology.
- Human Nature, including the Intellect and the emotions.
- Morality, covering all relationships, Divine, human and animal.
- the Culture: the discussion is confined to Western Culture.
- Religion, including all personal experience.

These natural divisions of experience are taken to be natural divisions of reality since reality is the source of experience.

Individuals at different stages of intellectual and emotional or spiritual development tend to see different realities. The materialist sees himself as a physical body and experiences his culture as the most immediate reality. The individual also experiences the natural physical environment as the background to the culture and understands that physical environment through knowledge given by the culture.

The idealist or rationalist views his or her intellect as the most immediate reality and sees the cultural and physical environments as secondary. The rationalist's purposes are connected with the quality of the intellect and the concern is to discover the methods and rules by which these purposes may be achieved. In this, experiences of the culture and the physical universe may, or may not, be of significance.
Reality

The moral individual is also aware of human relationships and the emotions and feelings that these evoke. He is aware that there are rules governing inter-personal behaviour and that morality is the basis of these rules. He understands the moral obligations involved in relationships and community. Many individuals become aware of the spiritual, and those experiences which lead to the awareness of God Who is the ultimate reality and power.

Hugh of St. Victor, who lived in the 13th century, mapped a progression in human lives in which the intellect developed from a materialist outlook in the immature stage to a rational state in which the individual is concerned with truth and morality, and then to a spiritual state and a relationship with God. The individual, in this progress, comes to understand the full range of human experience and to achieve a well-developed intellect.

Rational Knowledge of Reality

From the position of knowledge the total flow of experience can be confusing and unmanageable and a solution is to map that experience by analysing it into natural divisions, to allow methodical study. These divisions follow those of subjective experience. These categories of experience are taken to represent segments of reality which are also referred to as environments. For the purposes of study each environment may be treated as a distinct entity and explained by a separate theory. These theories are:

- The Theory of the Cosmos
- The Theory of Human Nature
- The Theory of Morality
- The Theory of the Culture
- The Theory of Religion

Taken in isolation each environmental theory is no more than relatively true and is limited by the truth of the philosophy that governs the search for knowledge. These environmental theories may be drawn together into one fundamental theory of reality which explains them all. The fundamental theory is therefore a theory of absolute reality or “theory of everything” and functions as a philosophy of total reality by defining the possibilities of reality and the opportunities which may be pursued. Where the fundamental theory is absolutely true and the environmental theories are compatible with it, then the environmental theories are also absolutely true.

No distinction should be made between the theories of the Cosmos and, for example, the culture on the grounds that one is given to human

Section 3.3.4 Divine Illumination and Revelation
beings and the other is created by human beings. Every division of created reality is created by Life itself, either in the Person of the Christ, or by human beings as participators in the Christ.

Morality may appear to be a different case since the Moral Universe is a law of the Infinite God which is imposed on Creation as a whole but the study of intellectual development shows that every understanding must be created afresh by every intellect. Human beings create their understandings of morality and the moral universe as individuals and as a group, and such understandings, if true, are knowledge. Reality is always defined by human knowledge of it.

The Aims of Created Reality

The task of the Christ and of human beings is to produce that set of conditions in created reality in which the survival and self-fulfilment of all human individuals may be achieved. This programme is the natural extension of physical evolution. The nature of created reality reflects both the stage of the development of life that has been reached and the dream of paradise that compels humanity to go beyond raw utility. It is a dream of a paradise, seen as the Kingdom of God or as civilisation, that can barely be grasped intellectually, but would certainly be recognised when found.

The path to the realisation of civilisation, for the human group, is through knowledge, where knowledge is the power to choose. For the individual the dream is to be realised in the Kingdom of God and the path into the Kingdom is through moral understanding. The moral individual enters into awareness of the Kingdom in direct ratio to his moral progress. Since the group is no more than the set of individuals it is necessary for individuals to develop both better knowledge of created reality and increasing moral understanding and this must be done concurrently.
CHAPTER TWO

THE MEANING OF LIFE IN THE WORLD

The Meaning of the Cosmos

Albert Einstein has said that the significant thing about the Cosmos is that it can be understood by human intellects. The Cosmos is a rational place and serves a purpose. The purpose of the Cosmos is to produce rational self-determining individuals. The objective is the development of persons who have a true understanding of themselves and their potential, and can protect themselves from dangers and errors by trust in God. The Cosmos is a teaching system and its method of working is given by the problem and solution formula which is the only way that intellects can develop. It is, from the point of view of the intellect, a set of problems which can be solved by the rational problem solving method. The Cosmos is also the infrastructure of life. It offers an adventure to be lived and enjoyed. The teaching is in part the gift of the understanding necessary to the proper enjoyment of life.

The Cosmos is a system of the Holy Spirit and is located in the Mind of God. The Mind is not a medium of thought of the Infinite Spirit but is a logical construction made in pursuit of purposes. The structure of the Mind is similar to the intellect except that, whereas the intellect is developing and therefore incomplete, the Mind exists in its complete state. A principal purpose of the Mind of God is communication of meaning. Meaning here is the same primitive language which was referred to in the discussion concerning the creation of new understandings and theories. The form of communication of meaning may be ideal or physical. The Cosmos reflects the character of Mind and consists in structured complex meanings.

The Theory of Life

The fundamental theory is incompatible with Darwin's theory of the origin of species. Darwin's explanation is reductionist and atheistic. The growing corpus of biological knowledge denies Darwin's principal claim that life has developed gradually by small changes and that this accounts for the existence of the species. It is now thought that the development of life has proceeded by revolutionary events which were the mass emergence of new forms of life in a relatively short period of time, with long periods of physical stasis. This is just the scenario that
supports theist theory, and absolutely contradicts Darwin’s. Karl Popper has said, a century after the publication of the theory, that Darwinism amounts to no more than a framework for research. This implied, in effect, that the theory ought to be returned to its promoters for further consideration. Popper has said that the process of evolution is based on problem solving. This is consistent with the rational understanding of the Cosmos as a problem set.

Lifeform development is based on the solving of problems. The problem is given by the ecological niche, and the limitations of current lifeforms. This problem parallels the theological crisis situation in which the existing theory cannot account for a new problem and a new theory is required which explains both the problem and the field covered by the old theory. In evolutionary development the solution to the lifeform problem is a new species which matches the ecological niche.

The solution, which is the new species, makes use of past solutions just as a new theory makes use of past theories, but it is also the solution to a new problem. As an example, the path of development from the Kittyhawk to the Jumbo jet contains a series of problem solutions in the forms of now obsolete aircraft, but the Jumbo represents the solution to a new problem definition and solution specification. The relationship between successive aircraft on the development path does not involve physical transformation, but successive respecification and new creation. Each succeeding aircraft incorporates new ideas and new technology and is a product of creative design. Innovation in both technology and lifeform development is based on problem solving.

The true solution to the ecological problem is knowledge. Each new species in the development path is an advance in knowledge. Physical and intellectual progress are both, therefore, based on increasing knowledge.

In practice, the ecological niche supports a range of variations of the species, resulting from the permutations of genes, but all forms within this range are true solutions which are knowledge. True solutions express the best behaviours for survival. These best behaviours are integral with the capabilities of the lifeform, as specified, and are the optimum with regard to the possibilities offered by the niche. Knowledge is power and always expresses the best actions.
Reality

Forms outside the range are errors which are not supported by the niche. Error is disabling. Natural selection serves to keep the special solution true to knowledge. In this sense, it is a quality assurance mechanism. It might be described as the elimination of the false, where the test is experience. Knowledge is always subject to corroboration or falsification by experience.

In treating the development of life as a quite normal exercise in problem solving it is then consistent to regard the development of human beings is an integral part of the rational epistemological project, which has physical and intellectual knowledge components. Psychology and biology study respectively the mental and physical components of the same knowledge development programme. Science contributes to this programme with the objective of empowering life itself to participate in the work of creation. Life, empowered by knowledge, becomes self-creating.

A new theory of lifeform development to replace Darwinism is necessary. The framework for research is given by the set of problems that have been solved in the creation of each species. Every advance in the physical and mental powers of lifeforms marks the solution of a problem. The order in which these problems have been solved, based on increasing power to function in the physical and mental realities, gives the record of development in time. The chain of problem-and-solution combinations defines the development path of each species back to the original problem of trying to interface an intelligence to some aspect of the physical universe.

Creative problem solving and not random change is the key to the explanation of life development.

The Understanding of Human Nature

The understanding of human nature is concerned with the potential of humanity and how this potential can be realised. The fundamental model sees the purpose of the life process to be that of producing rational, moral, and self-determining individuals. The Christ has operated a version of the scientific problem solving method to develop life to the level of human beings. Human individuals, with the same methodology at their disposal, can now participate in that development process.

The Relationship between the Mind and the Intellect
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The understanding of the intellect has been outlined above. In its best form of expression it is an integral part of the understanding of human nature.

The set of intellects are annexed to the Infinite Spirit in the Christ. In its role as a participator in Christ the intellect is a project of the Mind, and exists within it.

The Mind of God is shared by the Persons of the Holy Trinity. It is both a creative and communications medium. The Mind of God is defined as that intelligent entity which manages operations of experience and understanding within logical space. Logical or mental space is subject to change in time.

The Mind, which includes the Cosmic System, is the process of the Holy Spirit and constitutes a development system. The Mind supports and teaches the intellect through the intellect support system and the Creative Source of new understanding.

How the Individual Integrates with his Body

As St. Augustine says, the creation of the human individual as a unification of spirit, intellect, and body takes place at the moment of conception. The intellect at that point is without any understanding of experience, but exists within the intellect support system and is linked to the developing physical body. It functions as an intelligence receptive to, and learning from, experience from the point of conception. The embryonic individual makes an emotional investment in his body which involves the linking of the emotional or spiritual energy of the nuclear intelligence or spirit to the body. This gives the awareness of feeling which causes the individual to identify with the physical body.

The Meaning of Life in the Christian Understanding

Life is both a process of learning and the enjoyment of an adventure. As participators in Christ, human beings share co-equally the Infinite's gift of power in the form of knowledge. At the level of the individual, knowledge is necessary to the process of self-creation and self-fulfilment. Collectively, knowledge is required for the development and operation of the community of participants in Christ. Christianity, as the development of Judaism, extended the concept of the Chosen People to all human beings without exception, and all share co-equally the inheritance of Christ. This is in accord with the understanding of the equality of all in Christ.
The Christ, as the initiator and guide of life, has the responsibility to develop the conditions of life to the optimum. As human beings share in the rights and privileges of power, they also share in the responsibilities and duties. Christianity addresses itself to the problems of humanity, and seeks the knowledge to overcome those problems. This knowledge is provided by the Holy Spirit. With this knowledge the aims of the Christ can be achieved. These are concerned, not only with the conditions of humanity in the Cosmos, but the survival and eternal life of the individual spirit. The Christian understanding is that human individuals can survive the death of the body and go on to new experiences. It is the will and purpose of God, as given in Revelation, that this should happen.

The mechanics of survival are not hard to envisage. The human spirit exists within the Christ Who is not subject to death. The intellect exists in the Mind of God and is likewise neither subject to death nor to extinction. The body exists within the Cosmos and dies. The death of the body cannot cause the death of the intellect but causes the link of the intellect to the Cosmos to be broken.

However, the prepared individual may expect the Mind to replace experience of the Cosmos with another link to whatever reality God has prepared for the good of His people. It is no more than switching from one source of experience to another and the switching process may be a function of the intellect support system. The link to the Cosmos is replaced by a link to non-physical reality. On the human level, changing the source of experience is done every day by switching between channels on television sets.
CHAPTER THREE

THE CREATION OF HUMAN CULTURE

The culture is designed to accelerate the development of rational intellects and to produce the best living environment for all the peoples of the world. A better culture leads to a happier, more rational and more moral people. The greatest opportunities for humanity lie in applying rational scientific method to the improvement of the culture and through this to the improvement of human intellects. This objective has two aspects which are the creation of a corpus of rational objective knowledge and the proper education of individuals. Both these aims fall within the responsibilities of the culture. In the solution of the problems of cultural development the Christ is working through the set of rational intellects.

The Cultural and Knowledge Problem

Western culture dates from the reforms in learning inaugurated by Charlemagne in the ninth century. Western culture is knowledge-based and therefore normally progressive. A progressive culture should be able to solve all its problems and to create the best living environment for its members. A knowledge-based culture should thereby make itself better in every way than non-progressive cultures and replace them all. At the present time no culture or subculture is recognisably the best. Western culture has lost its understanding of truth and now has no knowledge.

Present cultural reality is in many aspects pre-rational, and even irrational. Existing cultural reality is characterised by pluralism, which is a pre-rational condition. There are a number of cultures, each with its merits and demerits. Within cultures there are a multiplicity of religions, philosophies and ideologies with differing concepts of reality and consequently differing purposes. The condition of conflicting understandings and purposes and consequent struggles and violence is symptomatic of irrationality. Western Culture must be classed as a pre-rational culture even though it is knowledge based because it has no truth and therefore has no means of resolving internal differences.

The majority of human beings are intellectually sub-standard and therefore irrational. People's intellects are often no more than messy...
collections of ideas. This is the direct consequence of the quality of their culture and not of their natural capabilities. The blame for this state of affairs lies solely with the cultural ideologies and of course with those whose job it is, in a knowledge based culture, to find and disseminate knowledge. The solution to the problems of the people lies in the improvement of their intellects through rational knowledge.

Cultures which do not act from rational knowledge do not understand reality and will in time go under, to be replaced by better cultures. The perfect culture is the one which supplies all human needs, ensures the maximal growth of every individual in intellectual power and freedom, and provides the groundwork to allow all individuals to lead personally satisfactory lives. The individual in a civilised state, emerges from the cultural education process fully able to solve all his problems and to pursue those objectives that he deems worthwhile.

The Real Aspect of the Culture

The culture is more than theoretical knowledge. It contains a metaphysical and physical environment which is applied knowledge. Human life means life in the real cultural environment. If objective knowledge is uniform for all the peoples of the world the application of that knowledge may introduce differences in the real environment. This may be seen in examining the various societies of the world. Many of these differences are geographically and climatically necessary. Others are the result of historical accidents and local preferences. These differences between the local environments produce corresponding differences in peoples. An objective of the Cosmos is to produce conditions which introduce small differences between individuals so that every individual is unique. Each individual then sees different possibilities as desirable and pursues those possibilities in conformity with the purposes of God. The elimination of real differences in the cultural environment and the production of a single standard type of human being is contrary to truth and to the human interest. Diversity of type taken with intellectual rationality is the proper objective. However the standard of cultural environments should always meet the requirements of knowledge that all human beings should be free and sufficiently educated to pursue individually satisfactory lives. Cultural environments that achieve these aims may be judged to be good.

Good and not-so-good cultural environments are the products of good and poor cultures. Poor cultures do little for their members. Their vision is limited to individual material gain. They produce social divisions,
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wasteful conflict, crime and street violence, and drug and alcohol abuse. Education in poor cultures is generally unsatisfactory and fails to produce the rational intellects needed for cultural improvement.

Cultural reality is a product of human purposes and is a tool designed to enable humanity to modify its future. Opportunistic and haphazard changes are not always advantageous or desirable as the state of the planet shows and progress through knowledge is rational, which means less harmful and more moral. The process of cultural development is one of improving cultural knowledge in an ever-changing, more truthful, understanding of external reality. The limits of the ranges of possibilities for reality and the culture are given by the Fundamental theory and are subject to the imperatives of morality.

In cultural problem solving humanity is in the process of creating the perfect or rational culture, which is Civilisation. In this state the problems that now afflict the peoples of the world will no longer exist. Civilisation is achievable because the cosmos is rational, and all problems may be solved through the use of correct methods, with the help of the Creative Source. The nature of man is not a barrier to improvement, because man's intellect is culturally dependent. It is the culture that both causes the problems of humanity and offers the way to improvement.

The Study of Morality

The only constraint on Life as a self-creating system is the Moral Law. This law binds even God Himself. The Infinite God does not interfere arbitrarily in the Cosmos or in individual lives.

The Moral Law specifies the design rules of creation. It may be compared to the design specification of the Internet with which all users must comply if the system is to function correctly. The Internet has experienced major problems from time to time and these crises imply that the specification of the Internet is inadequate. If there were any defect in the Moral Law, circumstances might arise to cause the collapse of Creation.

The Moral Law, as the device of the omniscient God, may be taken as perfect.

According to Confucius, none can escape the Moral Law. Since it forms the first test of all human action it is the first consideration in the
selection of behaviour. While its obvious aim is the protection of all by proscribing harmful actions, it also defines the conditions for power.

A principal purpose of the cosmic system is to teach morality. The end result of the teaching is a rational being, whose behaviour is necessarily moral in all respects. Moral problems must be understood as the prerequisite to moral knowledge and this is to be expected, since moral knowledge is a product of the problem solving method. However, there are no moral experiences which are separate from the experience of the problems of life. The living of life leads to the understanding of the necessity of morality. The initiative lies solely with the individual to seek moral understanding and to want to be a moral being or person in God. The peculiar and individual nature of the study of morality has given rise to religion as the set of theories and practices which assist in the achievement of personal moral status. This achievement rests on the philosophy and purpose of the individual to be moral in all things. In the moral intellect all understanding, and therefore all models of reality, have a moral quality. It is not possible in such intellects to divorce the moral character from the meaning of the model because the meaning is moral. The moral quality of understandings is supported by the Christian philosophy of reality. Theism is a moral understanding of reality.

The study of the Moral Law is a task of Theology which provides guidance to Ethics on questions of absolute morality. The distinction between morality and ethics in the system of knowledge is the same as the difference between God's Law as given in the Moral Universe and human law. Ethics, as a department of philosophy, defines the minimum and desired standards of cultural and personal behaviour. The difference between the two standards represents the opportunity gap to be realised through developments in knowledge and education.

Morality argues for the sacredness of all human life, including the unborn, the crippled, and the aged, and the task of Ethics is to make this effective in practice.

The Account of Religion
Albert Einstein defined religion as the theory that life has intrinsic meaning. This definition is accepted here and distinguishes the religions from ideologies which see life as a byproduct of the random movement of matter. Religion is also different from those pseudo-religious ideologies and philosophies which see meaning only in metaphysical entities such as Humanity or the People, and deny any meaning or value to personal life.

Religion is a response to the meaning of supernatural reality. It is both an individual and a group response. It may be classified as a culture and is subject to evolutionary and revolutionary development as are cultures generally. Its relationship to secular culture is complementary in that secular culture is oriented towards the Cosmos and religion towards the eternal. Their development paths in a rational cultural progression should be converging.

The religious thinker is a researcher in the same sense as a scientist, defining his interests and problems, and arriving by the operation of the problem solving method, whether formally or intuitively, at solutions given by the Holy Spirit as the Creative Source. St. Augustine, although he did not analyse his methodology as an epistemologist might, was doing just this.

Religion lies outside the scope of academic knowledge since religious understanding does not necessarily conform to the rational definition of truth, which is the requisite for knowledge. The rational scientific method gives knowledge of reality as it is, but not as it was or will be. Religion is concerned, not only with present reality, but also with past and future states of reality. Since rational truth is the meaning of reality as it is, and God is ultimate reality, the rational method can reach the truth of this reality. However, it cannot judge the truth of religious tradition.

This does not imply that religious tradition is false. The Holy Spirit, as the Creative Source, responds to the purpose of the individual to know the truth, and may, through inspiration, impart understandings of truth which exceed the understandings of problems. This parallels the experience of theory creation where the new theory may exceed any prior estimate of its character. The given understanding may be untestable against experience but this state of affairs is not uncommon even in physical science.
Religious belief in its tradition and in the realisation of the future promise rests on faith. Faith is valid as a motivator and determinant of behaviour. Knowledge and faith are complementary and their relationship may be illustrated by two simple examples.

In the first example, if a traveller boards a plane acting in the faith that it is going to his destination, he has no ground for complaint if it is not. Where the plane is going is a matter of knowledge and he had only to ask first.

In the second example, the traveller may board an aircraft, having first assured himself that he knows where the plane is going. However, whether it will actually get there is not a matter of knowledge. Travelling by air is an act of faith. Some place their faith in air safety statistics; others in God. Knowledge and faith are both necessary to living a life. Inadequate faith is a deterrent to many enterprises, besides air travel. Faith is not therefore a peculiarly religious approach to life. The Enlightenment is an enterprise of faith.

Knowledge, in the rational sense, is not a prerequisite to the understanding of God. Intuitive intellects may experience and understand God directly as Love. However, spiritual knowledge is, in the Victorine scheme, an advanced form of rationality. An approach to God based on knowledge must first be rational before it is spiritual. God must be known before any response can be made to Him. That knowledge of God must be true. False gods, like false theories, are possible. The truth in objective religious knowledge can be reached only through rational methodology, and it has been the absence of this method that has led to religious disputes and divisions.

Both philosophy and religion are concerned with the future of humanity, both are based on rational knowledge, and both are based on faith. However, the interest of philosophy is limited to the welfare of humanity in the Cosmos whereas religion is also concerned with the eternal welfare of mankind.

The Christian Religion
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The Christian religion, in its doctrines, unites the Absolute with experience. The Infinite God of ultimate reality is related to the world through the systems of the Holy Trinity. The whole of reality may be known through one system of knowledge. The system of knowledge can be justified by an epistemology which is grounded in both Christian metaphysics and experience. From an epistemological point of view Christianity is an advanced system of knowledge.

It is not possible for individuals to build their intellects by retracing the path of knowledge development from its earliest beginnings. As Karl Popper has said, it would not be possible to progress further than Neanderthal Man in a single lifetime. Christianity, as the highest achievement of rational knowledge, is the optimum platform in Western culture on which the development of the individual religious understanding may be based, and it provides guidance on the best behaviours.

Christianity is not the religion of a race or class, but addresses itself to every human being without distinction. The problems of the world are also the problems of Christianity. The ambitions of Western culture flow from the Christian view of reality which sees meaning in the human enterprise. Progress and ultimate perfection are possibilities for the Western mind. Christianity is an enlightened religion.

Christianity is a personal religion. The most distinctive characteristic of the Christian religion is the high value it places on individuals, and this is because each individual is not only a body and an intellect but a spirit or intelligence. The Infinite Spirit manifests in every individual as potential. Christianity's concern is that every individual realises his or her potential as a rational and moral being. The Christian religion sees personal life as an opportunity for individuals to learn to become moral beings and go on to a higher life after the death of the body. This understanding follows from the knowledge of God and God's purposes.

The religious individual as a person responds to God and forms personal relationships to God the Father, the Source of Grace, God the Mother, the Source of wisdom and power, and God the Christ Who is the ground and community of humanity.

The religious student has three behavioural choices in the Christian understanding of reality which, when rightly grasped, amount to moral obligations. The first choice is to accept the offer of assistance given by
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God the Father. This is in effect a choice to become an eternal self-managing person in God and is the fulfilment of God's purpose.

The second choice is to seek understanding from the Holy Spirit of the Christian religion, the Scriptures, and the meaning of life, and to conform behaviour to that knowledge. This is the programme of faith seeking understanding as defined by St. Augustine.

The third choice is that of cooperating with the Christ in achieving the aims of Life in the world. Those aims are summarised as ensuring that the peoples of the world are free of want, ignorance and oppression, and are able to live moral lives, and pursue their own ends, in the best possible living environment. Cooperation with Christ also implies cooperation with fellow participators in Christ.

The Christian understanding of the aims of life in the world is consistent with the broad aim of the Enlightenment to improve the human condition. In conforming to the imperatives of morality, and the understandings of absolute truth and knowledge, Christian Enlightenment avoids those problems of ignorance, immorality and violence which have brought the secular enlightenment into crisis. In fulfilling these religious obligations the individual is contributing to the creation of human reality in its best possible forms.
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