RELIGIOUS CERTAINTY
An Inquiry into the Nature and Conditions of Religious Certainty in Relation to the Modern Scientific Attitude

A thesis presented to Edinburgh University Post-Graduate School of Theology, in partial fulfillment of the requirements for the Degree of Ph.D.

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Religious certainty is one of those subjects which call for constant re-treatment in view of changing attitudes of thought and modes of experience. Especially in consideration of the modern scientific attitude which has become so widely accepted among the masses of thinking people, religious certainty is a fundamental question for those who seek to further religious life in this generation. Accordingly, the purpose of this essay is to inquire as to how and why persons holding the scientific attitude have arrived at a condition of religious uncertainty. Further, the inquiry will be made in the interest of arriving at a working basis from which the truths of religion may be proclaimed most effectively to modern persons.

As such then, this essay is not so much concerned with the attitude of expert or professional scientists as it is with that of intelligent persons who have taken over into their every day attitude toward life certain aspects of science. Especially in countries like The United States and Canada where education is almost exclusively secular and technical is this attitude most prevalent. None the less it is by no means confined to those countries. References therefore, to science as such will be made in the special interest of
understanding the characteristic habits of thought and presuppositions which have gone into the making of the scientific attitude as it is held by numbers of thinking persons of the present day. On the other hand there are many aspects of the modern mind which do not belong strictly to the scientific attitude. In spite of the fact that these do affect certainty in religion, they cannot be dealt with in this paper.

In some respects at least, the results of this inquiry are admittedly negative. But perhaps it is just as well that the advocates of religion should realize the limits within which they must work if what they proclaim is to be truly religious.

The purpose of this essay dictates that its procedure shall be analytic and critical. Part one is given to an analysis of the scientific attitude in view of the question: how and why has that attitude led to uncertainty in religion? Part two is a critical study of religious certainty and the facts which condition it, in the interest of throwing additional light upon the question.

Because of the differences between British and American spelling perhaps a word of explanation should be made. The spelling used in this essay is that used in American Theological and philosophical literature. In cases, however, where
the British form is given as alternative to the American, the former is preferred.

Special mention must be made of Principal T. Hywell Hughes and Professor Daniel Lamont whose counsel and inspiration have been invaluable in the preparation of this thesis. I also owe a debt of gratitude to Professor H. R. Mackintosh for the profound insight into the religious life which he has shared with the Graduate Students.

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Ferris E. Reynolds

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INTRODUCTORY
CHAPTER I

THE PRESENT CONDITION OF UNCERTAINTY

Some years ago Professor Rudolf Eucken made an interesting analysis of thinking current in his day. At present the observations to which he called attention are even more significant, because, what he pointed out as being the tendency in thought has become, in many ways, a condition of fact. He referred to the general expansion of experience facilitated by the ever broadening horizons of individual living, suggesting that this expansion of experience was throwing such a tremendous amount of raw material into the processes of interpretation that congestion was inevitable. At the same time, he laid considerable stress upon the fact that, "no steady aims guide our endeavor, no simple ideas stand out above the chaos and liberate us from its doubt and confusion." "On the contrary," he says, "we are overwhelmed by immediate impressions and our lives are disintegrated by their contradictions." ¹

As Eucken intimated, there was indeed no lack of either the disposition or ability to criticize. The critical faculty on the other hand, had begun to develop beyond the capacity to

think appreciatively and constructively. Likewise, there was no lack of material for critical and constructive thinking. But, there was no selective principle which commended itself with sufficient force and persuasion to become the norm for determining the relative worth of this rapidly increasing accumulation of experiences. The remainder of Professor Eucken's book was devoted to the search for a "spiritual principle," which would unify the divergent and contradictory aspects of these experiences and serve as a criterion for deciding their relative worth. But notwithstanding this effort, the very confusion and uncertainty to which he pointed has developed into an almost chronic condition. Nor has modern thought discovered any guiding principle according to which a solution could be made. Many philosophies are expounded, but no set of ideas present themselves with sufficient force to become the true view of things for any considerable number of men or area of experience.

Meanwhile, conflicts continue to frustrate constructive thought, contradictions persist in depriving experience of its larger value, and indecision demobilises the disciplinary forces of character. Criticism continues uninterrupted in the work of dissolving the older beliefs and estimates of experience. "The acids of Modernity," as Walter Lippmann suggests, have come into

contact with almost every belief, custom, institution and tradition of contemporary life. Time-honoured economic orthodoxies, long-respected political doctrines and life purposes have thus been dissolved. In many cases, these "acids" have found their way to the very foundations of individual and social living. On the other hand, the best attempts at constructive thought, far from keeping pace with destructive criticism, have been largely confined to a piece-meal type of investigating specified sections of fact. The result, therefore, is a wide-spread condition of uncertainty and confusion. To use the language of a present-day writer, "The modern age has drifted from its historic moorings: it has lost its assurance of security and is voyaging, without pilot, on an uncharted sea." Old orthodoxies, doctrines, and beliefs, have broken up under the keen and well disciplined force of modern criticism, whilst the program of construction has been suspended because no foundation principles such as Professor Eucken sought have been found.

3. "In every branch of our spiritual and material civilization we seem to have arrived at a critical turning-point. This spirit shows itself not only in the actual state of public affairs but also in the general attitude towards fundamental values in personal and social life." M. Planck Where is Science Going? p. 65.


5. W. G. De Burgh Article Hibbert Journal April, 1934, Traditional Morality p. 262.
MORALITY

This "breaking-up" condition is especially apparent in the sphere of morals. For most part traditional morality was transcendental. Moral laws were conceived as expressing the ultimate nature of things, hence universally valid. But, after more careful investigation by modern methods, this metaphysical groundwork has been seriously questioned. Under the scrutiny of psycho-analysis, anthropology, and the historical methods, the relations between moral laws and such facts as mental complexes, racial developments, forms of individual and social life etc., have been traced. Instead of expressing some transcendental order of being, modern thinkers are inclined to the position that moral laws express simply the collective habits, aims, and folk-ways of a given social unit at a given time.

Modern psychological study has further suggested that moral conduct is an issue of a healthy mind, whereas, what is regarded as immoral is the issue of a disturbed or wrongly developed mind. Moreover, it is pointed out that a wholesome mental life is very largely dependent upon the success with which each individual is able to make the necessary life-adjustments with his environment. From this point of view immoral action is often regarded as merely symptomatic of an unhappy inner condition, the causes of which are implicit in the complex

fabric of human existence. Such phrases, therefore, as moral responsibility, guilt, and duty, as they were traditionally understood, have little or no meaning. If there is such a thing as moral responsibility, it falls upon society in the form of an obligation that each individual be guaranteed the conditions of mental health. But, even this responsibility is qualified by the fact that so many of the forces operative in human life are hereditary and racial, hence, beyond the immediate control of social units.

Similarly, it has been urged that human behaviour is determined by the primary instincts as they assert themselves against environment. In this case, the determination of conduct resides simply in the "given stuff" of instinctive life. The thing which should be done is simply the thing necessary for the satisfaction of man's primary impulses and biological needs.7

Modern views of morality have been even more decidedly affected by the behaviouristic psychology outlined by J. B. Watson. In the interests of rescuing psychology from the uncertainty and controversy of philosophy, the "behaviourists" have tried to make it an exact and objective science. They have purposed, therefore, to deal with human conduct simply as a given phenomenon, independently of the metaphysical problems

involved in the fact of consciousness. According to this point of view, instead of referring behaviour to such subjective facts as desire, purpose, and will, it is connected with bio-chemical causes in the organism. The task of psychological inquiry then, is simply that of tracing out these causes and explaining their connection with the various aspects of conduct.

While it is to be admitted that the extreme behaviouristic position of Watson has not been accepted generally, and that its influence is perhaps on the decrease, yet, many of the assumptions and methods of behaviourism continue to influence modern psychological inquiry and results. Especially is this fact evident in the current disposition to ignore the deeper metaphysical problems of human consciousness and discard the possibility of deliberate action on the basis of certain principles and aims. At any rate, from this point of view, it is evident that traditional moral concepts and categories which assume agent-freedom, have no positive meaning. Moreover, the traditional method of referring conduct to certain aims and capacities of consciousness is no longer possible. In short, those who hold this position have the problem of completely re-interpreting moral experience. But, simply because the very method of excluding such areas of fact as purpose and agent-determination in the interest of objectivity, tends also to

exclude the very facts which make moral experience what it is, the task seems next to impossible.

There are, of course, many important differences between these modern points of view in psychology. Furthermore, no one of them has been able to win any large majority of thinking people. Nevertheless as far as the implications for morality are concerned, there is an accumulation of evidence against traditional morality which has coerced the thinking of masses of men. Consequently, under the force of this testimony modern men are inclined to agree that the claims of transcendental morality are unjustified. Even the expressions "moral law," "ethical principles," and "categorical imperative," have been forced out of current usage. In place of them one finds modern writers referring to "patterns of conduct," "conventional dispositions," and "society habits." Moral concepts are no longer thought of as expressing objective reality at its deepest dimension, but merely as describing an historical life-process. They no longer stand universally valid above the tides of change and flux, but are constantly involved in those life movements. In the language of a present-day thinker, "The name by which a pattern of conduct is known easily changes from time to time, with changes in the natural conditions of adaptation, that is, with changes in the conditions of living;

9. This contrast may be seen by comparing Hawthorn's Scarlet Letter, with some modern novel, such as, D. H. Lawrences
Lady Chatterly's Lover.
or with changes in intelligence. The moral is not something final: it is a function of the situation at any specific time."

Thus, according to the view suggested by scientific research, moral principles and ideals are simply issues of the life-process observed at a particular place and time. The claim which they once made for absolute and unqualified obedience is regarded as a mistake in apprehension. In many cases, however, this mistake was a rather happy one for such an attitude toward moral demands gave meaning, direction and dignity to the life-process. Still, to make such a claim for moral principles and ideals in the face of what recent study has discovered, is quite impossible. Moreover, the custom of comparing newly proposed moral ideals with the nature of the moral order as that order is confronted in moral experience, is really incorrect. Even a comparative judgment between the morality of two different groups should not be attempted for that also involves a standard of judgment and a point of view, in some way independent of either group. Such a standard and point of view is quite contradictory to the nature of the moral life as it is understood by the scientific method.

Dr. Hart, Professor of Education at Wisconsin University, U.S.A., has enjoyed a long and enthusiastic participation in the more liberal thought of his time. This fact, together with his profound appreciation of the more idealistic modes of thinking makes his remarks highly representative and significant.
On the contrary, the nearest approach to a standard or principle of judgment from this point of view would be, "that which furthers the interests of the particular social unit in question," which, of course, raises the more ultimate question, "what interests should be furthered?" Also, even if the latter question is ignored, obviously, the application of such a principle must wait until the particular age under observation has become history, before an intelligent appraisal can be made.

This, no doubt, was what Professor Eucken had in mind when he called attention to the lack of a guiding principle. Regardless whether or not the transcendental morality of the past was grounded in a condition of fact, it did furnish guidance in the form of a standard of judgment which could be applied before a purposed way of conduct was begun. In this sense morality was prophetic. It dealt not merely with the past, but what was far more important, it dealt with the future. On the contrary, the modern view of morals makes it a historical science. For this reason, it may be exact because it has to do with what has become crystalized. But as such, morality does not function in human life as it did when prophetic guidance was offered. Fumbling, trial and error, thus take the place of a steady aim. Moral confusion and frustration is the natural result. Many ways of conduct suggest themselves, but there is no way of knowing which is most valuable, at least, not until it has been tried, and then the knowledge is of minor
Meanwhile, people are confident that the old standards of judgment cannot vindicate their demands upon human conduct, but they are unable to find anything to take their place which offers the security, satisfaction, and hope in the future, at one time furnished by moral principles conceived as transcendental.

RECENT BELIEFS

It is entirely too much to expect that the forces which have resulted in a general "breaking-up" within the structure of modern society would not find their way to religion. On the contrary, modern persons have been almost as diligent in their critical inquiry of religion as they have in other spheres. Accordingly, religious phenomena, beliefs, and institutions have been subjected to the same rigorous treatment which orthodox morality and science have received. With the technique of psychology, inner religious states have been examined. The historical method has been applied to the prevailing beliefs, ceremonies, and moralities of great religious traditions. With the skill and knowledge of sociology, scholars have endeavoured to get at the origins and nature of religious life. Anthropology, likewise, has been useful in

12. "We are still living to-day in the midst of the great process of dissolution which has overtaken the faith in the absoluteness and independence of all these values." B. Bavinck, Science and God, p.24
showing the relations between religious and racial developments. Referring to this modern approach to religion, Dr. E. S. Ames says, it "justifies the common character of various faiths, as springing from the same deep impulses of human nature but flowing in different cultures. And just as different languages and literatures may be translated into one another, so the great faiths, when scientifically understood, not only become intelligible to one another but become co-operative forces in the spiritual life of mankind." In general this view is shared by "The Layman's Inquiry of Foreign Missions." Professor Hocking sums up the position in these words; "You cannot begin to use the word 'religion' in the plural without the suggestion to your mind that religions are different simply because human beings are different, that religions fit the minds and habits of the people who profess them, the differences being 'relative' to those peculiarities, that none of them is absolutely valid, and that all of them have some relative good in them."

According to this type of investigation various accounts of the origin and nature of religion have been given. To many the belief in God and the corollary beliefs in Divine Grace and

15. W. E. Hocking Article The Journal of Religion April, 1934 Christianity and Intercultural Contacts. p. 129. Much the same claim is made for this approach to religion by E.S.Ames, Psychology of Religious Experience p. 5f.
Providence, are regarded as projections upon the actual world with no valid object apart from the subjective states from which they are derived. Jung goes on to suggest that the motive behind these projections, though unconscious in most cases, is nevertheless, just the desire for assurance and protection against the brutality of life. He urges further that even Christianity was accepted in order to escape the brutality of antiquity. 17 Freud, on the other hand, links the idea of God with the "father-memory," which having been suppressed by adults, finds expression in a different form as God the Father. 18 This idea, in turn is projected into the nature of things, where of course, it has no valid object.

Durkheim and Wundt find the origin of religious beliefs in the sentiments of clan or society, which through repetition have become crystalized.

In this manner, the modern methods of inquiry and characteristic approach to facts and problems, have brought forth their results, which indeed have been far-reaching in their influence and importance. However, it is becoming increasingly clear that if man has projected God into the structure of things

16. J. A. Hadfield defines projection thus: "Repressed complexes which we refuse to recognize tend to attach themselves to persons and objects of the outside world." Psychology and Morals, p. 34. See also L. W. Grensted, Psychology and God, p. 35, f. for a treatment of projection in religion.
18. S. Freud, New Introductory Lectures on Psycho-Analysis. In this more recent work of Freud's, he has not changed substantially the views upon religion stated in his earlier works, Psychopathology for Everyday Life and Totem and Taboo.
for any purpose whatsoever, or if the concept has simply emerged from a given set of psychological facts such as complexes and repressions, religious experience can not long continue with that knowledge. "If it is true that man creates God in his own image, it is no less true that for religious devotion he must remain unconscious of that fact... Once he knows that he has created the image of God, the reality of it vanishes like last night's dream." 19

Similarly, more liberal religious thought has urged that even though religious beliefs do originate in the manner claimed by these schools of psychology, the beliefs are none the less valid. For, the origin of a belief does not determine its validity. This position over-looks two important facts. In the first place, there is an equivocation in the term validity. It is quite true that because an idea arises among the ordinary set-up of psychological facts, it is none the less valid. Indeed, that is the way most ideas arise. But, when the validity of religious beliefs is questioned, validity is not simply a formal consideration. When men ask for valid religious beliefs they want beliefs which represent an actual condition of fact. In short, a valid religious belief must refer to a real object. However, when it is held that the idea of God arises from certain psychological states and is projected upon the outside world, something more than

formal considerations are implied; a metaphysical assumption is made. It is assumed that the object to which religious beliefs refer has no reality apart from its persistence in inner mental states. Surely it could not be maintained that a religious belief is not decisively affected by such an assumption regarding its object.

In the second place, it is highly important to see that beliefs cannot be treated independently of the influence they have upon the persons who hold them. Regarding this, to say that religious devotion is greatly affected by knowledge of the origin and nature of beliefs is to state a truism. For example; supposing a man believes that his friend is dishonest. But, when he comes to examine the belief carefully he finds that it has been evoked really by a secret jealousy which he has entertained because of the friend's attainments; also, that he has been influenced in this belief by associating the thought of his friend with another person who had proven dishonest. In such a case, would not the influence of the belief be definitely altered by this knowledge of its origin and nature? Of course, the mere fact that belief was thus arrived at does not prove that the friend was not really dishonest. Yet, unless this fact were established on other grounds, the belief would not escape serious suspicion.

Similarly, if the religious devotee is convinced that his belief in God has been created by his own psychological faculties, and that the creation has been projected into the nature
of things wherein its object has no independent status, it is altogether doubtful if the belief will continue to exert a decisive influence over him. Of course the belief may be valid in spite of the fact that it originated in this way. But, as a belief, in a large measure it ceases to be coercive over thought and conduct. Practically speaking, it matters little how much the adjective "deep" is attributed to the impulses behind religious ideas, when men realize that the source of those ideas is to be found in mental states and nothing else, the influence of them is impaired. Even apart from numerous other considerations, the very fact that religious persons have been mistaken in the view that their beliefs originated in and assumed their nature from a Reality beyond themselves, is enough to blight the influence of those beliefs. In fact, most modern persons when convinced of this mistake prefer to denounce religion stoically, rather than enjoy its benefits in the knowledge that it is delusion.

In the same manner, it is unlikely that a kind of syncretistic faith derived from a common denominator of all the great religions should inspire the great sacrifice or evoke the enthusiasm that a truly final faith has produced. Even those who take this view of religion have their misgivings about its practical effectiveness. For example, Professor Pocking admits in viewing

religion this way something essential to it is lost. He admits further that if there is nothing distinctive or final about Christianity, then missionary effort is left without a motive. At any rate, the modern spirit and method of inquiry go on raising more questions than they have either the ability or disposition to answer. Religion, instead of being a solution for the greatest human problems such as sin, death, suffering and destiny, has become itself a major problem. In fact, some exponents of religion today speak of it as the disposition toward a particular kind of life-hypothesis.

Dr. E. S. Ames sets forth clearly and concisely another source of the confusion and uncertainty in contemporary religious life. He says,

"A still more difficult situation developed for religion when scholars chiefly within the fold of religion itself ventured to apply scientific method to the Scriptures themselves and were able to present an overwhelming array of literary and historical facts setting forth inaccuracies, discrepancies, contradictions, and abundant evidence of the human limitations of the authors of biblical writings. These authors were found to be subject to social environment, to individual temperament, and to the influence of widely different conditions and institutions of national life."


Note - The thought of a problematical religion is really self-contradictory. If religion is anything it is an answer; not a question. Therefore, it might be more correct to say, "what is presented to the modern mind as religion is problematical."


See Footnotes p. 17.
Accordingly, the Christian believer today is obliged to read his New Testament with these kinds of questions in his mind: "Why was this book accepted in the canon?" "Does the text follow the manuscript nearest the original thought of the Christian community?" "How much did the early church influence changes in the original thought of Jesus?" "What is to be made of the apocalyptic passages?" Nor is it possible to accept the opinions of the best scholars, for they by no means agree. Moreover, psychological studies in the inner life of Jesus, St. Paul, and the writer of the fourth gospel, while they have facilitated a better understanding of the gospel story, have also raised many problems which perplex the layman.

Doubtless it is true that these results of modern biblical research and criticism have cast a helpful light upon many of the obscure places in the Bible. By such efforts the eternal glory and freshness of the early Christian message has been wrested from the mass of extraneous materials of the local environment in which it happened to be cast. Furthermore, it is altogether likely that the benefits of this kind of endeavour will continue as research develops in skill and technique.

Nevertheless, while this is being admitted, it is equally important to realize that the Bible, once an answer to every

Also, A. Sabatier, Religions of Authority, p.192, f.
R. Sockman, Morals of Tomorrow, p.234.
human problem, has itself become a serious problem. There is something profoundly true in the analysis made by Walter Lippmann, "But once it is allowed that each man may select from the Bible what he sees fit, judging each passage by his own notion of what is 'abidinb', you have stripped the Scriptures of their authority to command men's confidence and to compel their obedience."\(^{23}\) Psychologically, religion must have objectivity, if it is to evoke absolute obedience and certainty. The Roman Church has confronted each man's life with an infallible and divine institution. As Sabatier suggests the Reformation leaders filled the vacancy left by the "Infallible Church," with the "Infallible Book."\(^{24}\) Regardless of whether or not these institutions can support the claim made for them, their power to evoke obedience and certainty cannot be gainsaid. On the contrary, it is obvious that the surrender of objectivity in religion and subsequent retreat into uncriticized "experience" which has come in reaction to the fall of these institutions of authority, has deprived religion of a great power to evoke certainty. In the case of Modern Protestantism,\(^{25}\) the devout who have become accustomed to rely upon the Bible to give faith objectivity and certainty, now find it necessary to secure another basis for faith sufficiently strong

\(^{23}\) W. Lippmann, op.cit., p.48.
\(^{24}\) A. Sabatier, Religions of Authority, pp.176 and 184.
\(^{25}\) In this connection it should be noted that some strong communions of Protestant Christians have insisted that faith in Christ is the foundation of Christian faith and the principle of understanding the Bible. (cont. next page)
to maintain the Bible as a religious book, while the endeavour to determine what in it is revelation and what merely framework is being carried on. Nor would this be so difficult were it not for the fact that the same way of inquiry which calls the Bible into question calls into question also the religious object and the reliability of awareness of such objects. Hence, with the validity of the religious object under suspicion, religious beliefs charged with projection and rationalization, religious ethics stripped of its final and transcendental character, and the Bible, on which religious life has been nourished, resolved into a puzzle, modern religious faith has been cut off from its chief sources of strength.

26. c.f. Wm. E. Hocking, op.cit., p.133, "God does in truth speak to men through the Bible, but that speech must be heard by each individual for himself, as a response of his whole being to the living and present spirit beyond the printed word." 25.(std.) The Revelation of God in Christ, therefore, has given their religion objectivity, and evoked certainty. Yet, this faith in Christ is by no means independent of the biblical account. If say, the position of Drews were established,(A.Drews, The Christ Myth, p.19) "that more or less all the features of the picture of the historic Jesus, at any rate all those of any important religious significance, bear a purely mythical character, and no opening exists for seeking an historical figure behind the Christ myth," would not the objectivity of "the Revelation of God in Christ," be impaired?
CHAPTER II
DISTINCTIVE FEATURES

Some thinkers who are inclined to view the present situation more calmly have called attention to the numerous instances of history when established institutions and orthodoxies have given way before the forces of criticism. This is, of course, too obvious to be disputed. But, the present situation is significantly different for two reasons. In the first place, the instances of dissolution offered by history can be accounted for largely by reference to internal decay, over-devotion to luxury, lapse into formalism, or some other kind of stagnation. But, can such a charge be made legitimately against the present generation? Quite the contrary, modern persons have not been content with an easy-going or complacent attitude toward life. There has been no lack of philosophical inquiry or arrest of moral earnestness. Nor is it just to say that religious beliefs have wasted away because there was no interest in them. Exactly the opposite is true. Tireless efforts, anxious inquiry, and a genuine desire for reliable knowledge, have contributed to the "breaking-up"
Secondly, "break-ups" which have occurred in the past have almost always contained the seeds of new growth. In many cases new and more adequate beliefs have actually up-rooted old decadent ones. But Lippmann, along with other observers of modern life are unable to see any signs of such growth or to believe that it will take place in the near future. But, why should there be so much doubt as to whether or not the present condition contains in itself the forces of reconstruction? It is probably because the modern habits of thought and methods of research, in the very process of dissolving traditional beliefs, have impaired the awareness of that order of being described by them. Moral ideals of the past purposed to interpret the ultimate nature of things of which people were aware in moral and religious experience. Any claim for validity asserted for a particular belief had to vindicate itself in the presence of that awareness. When in the development of experience these proposed interpretations became inadequate, they were broken up under the force of criticism. It is clear, therefore, that the criticism itself involved a corresponding reconstruction. Accordingly, the moral sanctions espoused by

1. "This is the first age, I think, in the history of mankind when the circumstances of life have conspired with the intellectual habits of the time to render any fixed and authoritative belief incredible to large masses of men. The dissolution of old modes of thought has gone so far, and is so cumulative in its effect, that the modern man is not able to sink back after a period of prophesying into a new but stable orthodoxy. "Preface to Morals, p.12."
one generation have been challenged by the succeeding one. However, the criticism of the present generation is not directed simply against the interpretation of ethical and spiritual reality confronted in experience, but also against the awareness itself and the object which that awareness claims. The very attempt to understand these experiences and find adequate beliefs to interpret the objects which evoke them, has given rise to a situation in which the whole matter, beliefs as well as their appropriate objects have assumed a dim unreality.

The results of this type of investigation, then, have suggested strongly that what men are confronted by in moral experience is not something actual like the objects of sense perception, but at best, something created by and sustained in subjective states. As such, many social, hereditary and psychological factors determine both the nature of this creation and the way it develops. Moreover, these factors seem to change as individual, social and racial life continues. Consequently, what men are confronted by in their ethical life is subject not only to certain life-factors, but to constantly changing factors. The idea of a universally valid moral tenet, then is a fiction. On the contrary, each moral tenet, in the very nature of the case, is qualified by at least two conditions; namely, by the fact that it is an individual opinion; and by the fact that it is made at a particular time in the development of human life. In short, modern research and methods
of dealing with human experience have brought about a situation in which not only the interpretations of ethical reality are questioned, but one in which it is doubtful that the object of moral experience has anything more than a subjective existence. Consequently, the task of reconstruction in ethics is quite a different matter than it has been in other periods of revolt. It is not merely the task of finding more adequate terms by which to describe moral laws and obligations, but a case of re-establishing moral laws and obligations in the structure of things. The dissolution has not only affected the super-structure of ethical theory, but also the foundations upon which both moral experience and interpretation are based. Unlike the moralists of yesterday, modern theorists cannot begin with the awareness of moral reality and build a system of beliefs to interpret it. Some other starting place must be found. Consequently, reconstruction involves different and more fundamental considerations.

In religion likewise the revolt of each generation against the beliefs of the previous one is a common matter. In fact history seems to intimate that such a process is indispensable for vital religion. However, these periodical revolts have been directed against the way religious values, divine Reality,

2. The term existence is used here in the broadest possible sense. The mere fact that psychologists recognize a thing as present in consciousness, implies that it exists in some sense.
and religious truth have been represented. Creeds, systematic formulations of doctrine, biblical exegesis, and forms of Church polity were revoked. But, in each case, a new creed, formulation of doctrine, or plan of church administration already had evolved before the old way had been abrogated altogether. It was possible, then, for each generation to arise in revolt against traditional religion and settle back into a new but more satisfactory orthodoxy, as long as the criticism was centred in the representations of what men were aware of in religious experience.

The present condition, however, presents a peculiarly different problem. Certain methods of research, habits of thought, and presuppositions have proven highly satisfactory in other spheres of investigation. By these research methods amazing discoveries have been made in the physical world. So many of its mysteries having been revealed, the physical world has become objective and concrete, and as such has become something of a standard of actuality. Thus equipped with such a successful method of research the modern mind has sought to examine and understand more fundamentally, what is contained in the traditional beliefs of religion. From this point of view, what men are aware of in religious experience is seen to be determined by individual and social conditions. Like the object
of moral experience the religious object is regarded as some-
thing created and maintained in personal subjective states
under the changing conditions of living. The religious object
is not something ultimately real as was assumed by the tradi-
tional religion, but a projection of certain aspects of person-
al experience, human qualities and interests which happen to be
uppermost at a given time, for the purpose of affording harmony
to life. Accordingly, the world of purpose, human freedom,
Divine regard for individuals, etc. instead of being the real
world is simply an imaginative creation. If the Divine Being
Himself is simply a projection, then what are commonly referred
to as spiritual things also lose their validity. Hence, the
religious object along with the world of spiritual things condi-
tioned by Him, is destined to endless change depending upon
changes in social and individual living.

As this kind of research is continued the actuality of the
physical world tends to become more and more overwhelming as
the actuality of the religious object becomes less and less con-
vincing. Awareness of the physical world, therefore, becomes
more reliable whilst awareness of a world conceived in the tra-
ditionally religious manner, fades into the realm of individual

see also, J. H. Leuba, A Psychological Study of Religion, Ch.VI,
The Making of Gods and the Essential Characteristics of Divinity,
3.111-105.
And, S. Freud, Civilization and Its Discontents, p.36.
fancy. With increasing completeness scientific research has mapped out the features of the actual world, relegating that to which religious beliefs refer— that which men are confronted by in religious experience, to the regions of imaginative construction. In so doing religious experience and beliefs have been divorced from the object to which conflicting beliefs were referred for judgment. Therefore, as in the case of ethical reconstruction, the programme of building new religious beliefs has no place to begin or guiding principle for judging the value or validity of what has been built. There is a feeling that not only the traditional beliefs are unreliable, but that all possible religious beliefs are likewise unreliable. Thus, in the very process by which men have sought a certain understanding of religious experience, and more accurate ideas of what confronted them in that experience, both the religious object and the awareness of it have become vague and unconvincing. Moreover, as religion is conditioned by such an awareness and religious beliefs fashioned to interpret it, the very roots of religion are destroyed. Therefore, the uncertainty and confusion of present day religion is not simply that involved in the natural development of religious life. On the contrary, this

4. Often referred to as the "spiritual world." That is, a world energized by a personal Deity in the larger interests of personality and its fullest realization.

confusion arises from a situation created largely by modern methods of research and habits of thought in which the primary awareness of Divine Reality has been dimmed under the constant suggestion that its object has no place in the ultimate nature of things.

To be sure, this is by no means the first time religion and morals have been accused of subjectivity. The point is, this is the first age in which the very methods of research and habits of thinking themselves have contrived to force the accusation. On the other hand traditional ways of thinking based upon the assumption of an ideal world in which laws of thought were sustained, led toward a compelling objectivity. When research was pursued along those lines, therefore, the charge of subjectivity seemed more and more unfounded. But, exactly the opposite thing happens in the case of modern persons. The more they endeavour to disprove the accusation of subjectivity by careful study of the facts, the more they are forced to admit that moral and spiritual reality has no ontological status apart from its persistence in subjective states.

While, in this manner the people of this age have been losing their grasp upon the basic ideals and beliefs of life, the nature of modern life demands with even greater force, that they maintain a firm grasp upon those verities.6 The complexity of modern industrial society gives rise to difficult moral

problems which require clear and profound moral judgment. The
discovery of great powers and the development of speed, etc.,
call for clearer moral discernment and more powerful resolve.
If psychological knowledge is to be used constructively, well
defined human purposes and ideals must be determined.

That is not all. In the very nature of moral experience
ideals of the good, and demands for obedience must be clear and
certain. The absoluteness of their nature must be vindicated
with absoluteness. No man will submit himself to an ideal un­
less it is disclosed to him unmistakably as representing some­
thing actually final. Such certainty is at once the condition
of moral experience and the sustenance of its growth. Hesitancy
with regard to duty always detracts from the value of moral ex­
perience. 7

Likewise, the facts of modern life impress upon modern per­
s ons the need for dependable religious beliefs. Many have come
to know intense suffering strangely inflicted by such impersonal
forces as faulty distribution of resources and employment. Others
are bewildered by the exorbitant price offered for personal in­
tegrity. Still others are tempted to accept an aimless futility
in which it is actually hoped that "nothing matters." Everywhere
men are confronted with the need to believe. That very need
haunts unbelievers. 8

But, as in the case of moral life, religious beliefs, in order to be satisfactory, must be apprehended with certainty. Long-sustained uncertainty is the negation of religious experience. Whenever the object of religious devotion and personal commitment becomes problematical, religious experience passes over into metaphysical speculation. Believers have said always, "I am confident." Philosophers have said, "I think." Take the element of certainty from religious experience and it is no longer truly religious experience.

In modern life, therefore, the need for adequate moral and religious beliefs is even more drastic than in simpler epochs of life. Men have been tireless in their search for satisfactory beliefs. They have employed the very latest methods of research and by them have made many amazing discoveries. But, these discoveries, instead of giving a clearer vision of spiritual reality as absolute and finally authoritative over human life, inversely, have made the object of religious experience seem fanciful and subjective. Paradoxically, the very quest for certainty has turned out to be a basic cause for uncertainty.

Some have viewed this situation as the, "Modern fall of man." In the very event that man has made great discoveries and released titanic powers, he has made his own life appear relatively insignificant, because these accomplishments make it increasingly absurd that man holds any uniquely important place in the universe. 9 The more he has gained power over

9. R. Sockman, Morals of Tomorrow, p.70. (footnotes next page)
physical nature the less he is able to feel sure of his control over human nature.\textsuperscript{10} For, by the same type of inquiry the principles by which that control was effected have faded into dimly outlined subjective fragments.\textsuperscript{11} In short, the "spiritual principle," which Eucken sought has retreated farther and farther away from the modern mind.

At first the novelty of the modern movement was sufficiently engrossing to detract attention from the implications of it. Likewise, the sheer joy of destroying something antiquated, linked with the feeling that the movement was a crusade in the interest of truth and the delight of a newly-found freedom, obscured a clear view of the consequences. But, that having largely disappeared, the fuller import of the movement becomes apparent. The pessimism entertained by so many thoughtful persons is therefore more understandable. For centuries men have lived in a world whose ultimate nature was conceived as supporting man's highest ideals and aims. The principles with which men sought to relegate their conduct were regarded as expressing the nature of Ultimate Reality - God. Minds became accustomed to seek recourse to this ultimate nature of things, when pressed by questions or confronted by judgments. In short, men felt at home in the universe thus conceived. Then,

\begin{itemize}
  \item \textsuperscript{10} Substantially the idea of Sockman, op.cit., p.70.
  \item \textsuperscript{11} c.f. R. Hutcheon, Frankness in Religion, p.23,f.
\end{itemize}

9.(ctd) See also, S. Chase, Men and Machines, especially Chapt.I, Slaves and Philosophers.
to be cast out suddenly from that world fashioned along humane lines into a world utterly indifferent, if not positively hostile, to the highest human aims and experiences, could not be reconciled easily. In the language of Lippmann again, "It is not easy to accept the knowledge that desire, that prayer, that effort can and often are frustrated, that in the nature of things, there is much fumbling, trial and error, deadlock and defeat." Cold illimitable space is not an inviting concept for the average man. Nor is it pleasant to think that he must continue to live in a world in which he is essentially a stranger. Indeed, if "there is no more reason to suppose that events in one's own life have any more meaning than those of the humblest insect that crawls from one annihilation to another," pessimism is not at all ill-founded. Professor W. P. Matthews calls attention to much the same fact in the Introduction to his book, "The Gospel and The Modern Mind," He says, "There is a note of tragedy in modern literature which reflects the feeling of masses of reflective persons. The indifference of nature, even its apparent hostility is a constant theme. . . . The world of space and time has not as a result of scientific research become more like our home." 12

Also, c.f. J. K. Hart, Inside Experience, p. 6, for an energetic protest against the modern world-view.
The distinctive features of the present condition of uncertainty, have their source, then, to a large extent, in the methods of inquiry and habits of thinking employed by modern persons. Indeed, this particular way of dealing with the facts of life has accumulated so much force over the modern mind that very often it is tacitly assumed to be the only way. Therefore, conscientious attempts at a more satisfactory understanding of the finer experiences of life end only in a situation where the objects confronted in those experiences seem fictitious and any judgment of them unreliable. Moreover, every increase of effort along this line tends simply to increase this failure to sense moral and spiritual reality, hence to increase the feeling of uncertainty.

When the results of this analysis are thought of in connection with religious certainty, the first task of a modern apologetic becomes evident. It is necessary to examine these methods of research and presuppositions in view of determining how this attitude has led to uncertainty, and, if there is any alternative approach. Or, must intelligent persons be content with the surrender of moral and religious values? The next section of this work will be devoted therefore, to an examination of the modern scientific attitude in view of answering these questions.
PART ONE

THE MODERN SCIENTIFIC ATTITUDE
CHAPTER III
THE MODERN ATTITUDE
AND THE DEVELOPMENT OF SCIENCE

This modern scientific attitude has its roots far back in the development of natural science and the inductive method. Previous to the beginning of the thirteenth century Platonism and Neo-Platonism, as it was embraced by the leading churchmen, gave direction to the efforts of thought. Its method was highly speculative, moving along lines more idealistic and mystical, than rational. With the publication of Aristotle's works, a significant change was effected. Thinking took a more rational and scientific bent. Interest in physical nature began to assert itself, and the method of observation began to be preferred to the traditional method of deduction.

1. R. A. Millikan, in his McNair Lectures, "Time, Matter, and Values," 1932, University of North Carolina, makes this significant statement: "I think there can be no shadow of doubt that the great characteristic feature of our times, the one thing that distinguishes our civilization from all that have preceded, is the discovery of the scientific method and the results that have followed upon its application." p.75. See also, E. S. Ames op.cit., p.4
Soon Dominican Albertus Magnus, 1193 - 1280, announced some observations of botanical principles. At first the new movement of thought was viewed with alarm by the Church leaders. But, the student and disciple of Magnus, Thomas Aquinas was so able to interpret the new way of thinking in terms of Christian dogma that for several years the early efforts of science enjoyed the patronage of the Church.

Although these earlier advocates of the scientific viewpoint did much toward laying the foundations for subsequent natural science, from the point of view of understanding the modern attitude, the efforts and spirit of Roger Bacon are more significant. Bacon was born about the year 1210, and educated at Oxford. Here he was greatly influenced by two men; Adam Marsh, a brilliant mathematician, and the Bishop of Lincoln, whom Bacon regarded as a real scientist. Soon he became devoted to science and captivated by the new experimental method. On the other hand, he was outraged by the way prejudice and ignorance had corrupted the understanding of the New Testament, and longed for a really scientific treatment of those Scriptures which would allow them to stand in their original power and glory. Constantly he advocated the ideal of an "open mind." Reading extensively from original manuscripts of Arabic, Greek, and Latin writers, he attempted to verify their statements by observation. 3 According to his conviction, the causes of human

error are; undue regard for authority; habit, prejudice, and conceit of knowledge. Hence, he set about to apply the new experimental method to the tradition and dogma of his day. Likewise, Bacon's interest in mathematics, optics and other instruments for research links him with the thought of more recent times. His insistence upon getting at the original sources and bases in observed fact seems to belong to this age rather than an earlier one. At any rate, the spirit of the twentieth century finds a real companion in this early leader of science.

Bacon's position and spirit were largely taken over by subsequent scientists who confined their studies to more limited spheres of research. Peurbach (1423 - 1502) and Copernicus (1473 - 1543) concentrating their efforts on astronomical observation greatly extended the boundaries of the universe and exposed one after another the errors of accepted authorities. By this time, something of a revolution was taking place in the thinking and beliefs of the period. Old superstitions were being up-rooted and mechanical inventions were developing rapidly as a new epoch of human life emerged. Meanwhile, Tycho Brahe, a Dane, was busy gathering the valuable astronomical data, from which his able assistant Kepler, drew

4. Not an exact quotation but substantially the words of Dampier - Whetham, op.cit., p.90.
6. Known as the Copernican Revolution.
some very significant conclusions regarding the order in the physical world. He showed that the heavens were alike in that they followed universal and mechanical laws which were ascertainable by observation and communicable in mathematical formulæ. In 1609 Galileo trained a crudely made telescope on the heavens, establishing the conclusions of Kepler and Copernicus. Galileo also carried the scientific method a step further by claiming for it the privilege and task of reading the mind of God in the mechanical necessity of nature and the ability to control the forces of the physical world for human ends.\(^7\)

It remained for Descartes, a brilliant young mathematician and philosopher, to clarify the new way of thinking and put it in systematic form. He outlined the causes for error in human thinking under four headings: (1) Prejudices carried over from childhood, (2) A failure to forget prejudices, (3) Judging from pre-conceived opinions, and (4) Attaching concepts to words which do not answer accurately to the reality,\(^8\) observing roundly "that it is good to have examined all things, even those most full of superstition and falsehood, in order that we may know their just value, and avoid being deceived by them."\(^9\) He also believed that of all those who had sought for the truth in the Science, the mathematicians were the only ones who had produced reasons which were evident and certain.\(^10\) Therefore, he purposed to use

\(^{7}\) From Randall, op.cit., p.239.
\(^{8}\) Descartes' Philosophical Works, Haldane and Ross
Principles, LXXI, LXXII, LXXIII, & LXXIV, pp. 249 - 252.
\(^{9}\) Ibid p. 94
\(^{10}\) Ibid p. 93.
mathematics in a more general way to understand the ultimate truths of existence, advancing the doctrine that the relations between various parts of the universe were essentially mathematical relations, hence, that nature could be interpreted most accurately along mathematical lines. By the use of "algebra man could hope to discover the secrets of the universe, this was the key to the great cipher of nature, this the new method men had been seeking." 12

The relation between new developments in science and philosophy is seen even more pronounced in the work of Spinoza. That exactness, precision and certainty which the new method of science afforded, deeply impressed the youthful philosopher. He came to believe that mathematics could be applied to the realm of human life and conduct in such a manner as to eliminate the error and uncertainty which had characterized earlier moral philosophy conducted along speculative lines. He therefore, proposed to deal with human actions, desires, and purposes in the same way that the mathematician deals with lines, planes, and solids. Spinoza's great work, Ethics, Demonstrated in the Geometrical Manner, resulted. His influence upon subsequent thinking has been excelled perhaps only by Kant. Especially in more recent thought, what might be called, "the romance of order and necessity," championed by Spinoza, has affected deeply the efforts of thought. Professor Wolf, in a paper given to

the British Institute of Philosophy says,

"Again, the infinitely rich universe as conceived by Spinoza has a thorough going orderliness such as it has in almost no other system of philosophy. . . . Nothing is represented as arising out of nothing. The infinite variety of natural phenomena is represented by it as a manifestation of what is already provided for from all eternity, as the expression of infinite powers acting in accordance with eternal laws." 13

From the time of Spinoza 14 and Descartes, philosophical effort was more inclined than before to accent the findings and assumptions of science. Isaac Newton's, *Principia Mathematica*, and John Locke's, *Essay Concerning Human Understanding*, carried the work still further by more completely identifying the mathematical ideal of science with the entire field of thought and conduct. 15 However, this early kinship with philosophy deeply affected the nature of science. These early men of thought were striving for a satisfactory world-view. In short, philosophy was profoundly metaphysical in its aims. Perhaps no other age has presented such thorough-going systems of thought. Accordingly, when the breach between science and philosophy came, science retained much of the world-view held by these early systematic philosophers. Hence, from that time almost to the present, science has assumed that the events of the world are causally related; that they can be stated in mathematical terms, and that the world exists.

14. The affinity of Spinoza with the modern mind was brought forcefully to the writer's attention by observing the reactions of groups of graduate students studying the Ethic in seminar.
independently of subjective states. At the same time, because of the divorcement between science and modern speculative thought, science too often has given the impression that it holds no world-view and as often its less-professional devotees have insisted on this point.

For purposes of this study, it is important to see further how the scientific impulse affected views of the mind and gave rise to modern experimental psychology. In a very real sense John Locke and the Empiricists, David Hume, Holbach and Hobbes, applied scientific principles in the attempt to understand the human mind. But, the study of mental processes scarcely can be termed a science in the stricter sense until much later.¹⁶ Psychology was, on the other hand, simply a branch of philosophy, until the work of Wundt. In 1879, the first Psychological laboratory was set up in Leipzig. This marked a very decided change in the manner of approaching the human mind, and viewing mental facts.

"The general result has been the transforming of psychology as a whole from a largely speculative science - to a science empirical and practical, whose facts can be verified, as in the case of physics or chemistry, by observation carried out under definite and rigorous conditions." ¹⁷

However, it should not be overlooked that such a change in psychological inquiry was implied in the general attitude of a much earlier date. Similarly, it is evident that the modern

¹⁷. Collins and Drever, Experimental Psychology, p.3.
views in Psychology as expressed in Behaviourism and Psycho-
Analysis, are simply developments in this general movement of
thought, hence deserve to be treated as such in a study of the
modern scientific attitude.

Further application of the scientific method and spirit
is apparent in the rise of the social sciences, especially
sociology and history. To men like Hume, Rousseau and Voltaire,
social life seemed to be burdened with convention and supersti-
tion. Consequently, they assumed the task of criticizing these
social encumbrances. Therefore, in utilizing the scientific
method for this enterprise, they set a precedent for subsequent
students of social life.

Perhaps it is within the scope of mechanical invention
and medicine that the scientific attitude has exerted its most
persuasive influence over the popular mind. Indeed, there is
something almost irresistible about evidence from practical
results. Popular confidence seems to move "from faith to faith."
If the methods of science have done so much to eliminate
drudgery, disease, and human limitations, then, it is easy to
believe any new claims asserted in the name of science. 18
Therefore, most modern persons are willing to recognize the
results of scientific inquiry without offering much critical
opposition. 19 Likewise, they are prepared to entertain the
scientific attitude as far as they are able, in confronting

the facts of life. Indeed, that attitude, in some form, has become almost universal among persons of this generation. It is a part of the very atmosphere that people breathe. It has made possible their motor cars, radios, and comforts. Their existence is definitely linked with the discoveries of science and their personal safety depends largely upon scientific precision and successful manipulation of natural forces. Truly, there are some who are not so hopeful about the future successes of science. Even some outstanding leaders in Science have their misgivings in the matter. Still, among the masses there is a widespread belief that the accomplishments of science have just begun.20

Professor Millikan is perhaps one of the most enthusiastic supporters of the New Age.21 He thinks that the scientific study of energy along with astronomy will provide control of natural catastrophies and the utilization of those gigantic powers for human ends.22 "The disasters that can befall mankind merely because of erroneous conceptions of the nature of the world in which we live are well illustrated by the historic record of the miseries that came upon the earth in the year, 1000 A.D. because of the widespread belief that the world was

20. Ayers quotes a creed for science in his polemical work, *Science the False Messiah*, p. 199. While it is more clever than accurate, there is an element of truth expressed therein.
21. Professor J. Robert A. Millikan. This view also is supported enthusiastically by Leuba.

Creed: "I believe in atoms, molecules, and electrons, matter of heaven and earth, and electrical energy its only form."(ctd.)
Likewise, calculations of mathematical science, discoveries concerning energy, friction, motion, and the chemistry of natural elements are regarded as the sure instruments of industrial development. Biological sciences together with the study of anthropology are supposed to indicate the goal of human development. Moreover, diseases that thwart human achievement and cause so much misery will come under the control of medical science. Some who place such faith in science venture to believe that it will give a solution to vexing moral problems. 

"It is of the essence of the scientific attitude to inhibit reactions wasteful of energy . . . and to make, instead, fine adjusting movements under conditions of emotional quiet; . . . In this respect the marks of a truly scientific age would be the cultivation of good judgment and elegant skill, to replace wasteful driving action in the social, economic and political spheres, . . . which means in the last analysis the intelligent adjustment of means to ends." 

Professor de Burgh likewise entertains high hopes for the scientific method in solving moral problems. Thus he writes, "Here science, which is so rapidly transforming the conditions of civilization, points the way; if man can thus win control over Nature, shall he not, by the same method win control over his own life?"

See also, J. A. Hadfield, Psychology and Morals, p. 147 - 181.

Creed (ctd.): I believe in modern science, conceived by Copernicus and borne out by Newton, which suffered under the Inquisition, was persecuted and anathematized, but rose to be
In this somewhat superficial survey of the modern scientific attitude there has been no desire to disparage, either the contributions which science has made to common life or the possibilities that it may realize in the future. On the contrary, those successes in hygiene, mechanics, and in social studies make it easy to understand the enthusiasm with which men accept any new pronouncement of science, and the readiness with which they fall into the habits of thought employed in arriving at those results. At the same time, any attempt to understand the modern mind must examine the habits of thought, methods of dealing with facts, and assumptions which science finds so useful and which the popular mind so largely has accented.

Creed (ctd.):
the right hand of civilization as a consequence of the fact that it rules the quick and the dead. I believe in the National Research Council, the communion of scientists, the publication of discoveries, the control of nature, and progress everlasting. Amen."
CHAPTER IV  
METHODS AND PRINCIPLES  

The term "observation," has occurred many times in this brief survey; and not without reason. In fact, it would be possible to write a history of science in the form of an account of observation made of various phenomena under different conditions, and by diverse techniques. Science, as it is understood today is a development of the common sense practice of viewing events with care. The well-known proverb, "seeing is believing," lies very near its essential nature. To be sure, observation is not confined simply to the sense of sight. A man might observe that a river-bed was made up of clay or gravel, by simply wading up the river at night. Likewise, a chemist might observe by his sense of smell the result of mixing two kinds of liquid. Or, perhaps the philosopher might observe an equivocal term in an opponent's argument, without the use of any particular sense organ. Plainly, they are all genuine observations, yet somewhat different in content and method of perception. Moreover, in each of these kinds of observation there is a constant element, namely, a subject is
attending to an object. Some "thing" is observed.

In science, therefore, observation is made under various and prescribed conditions, with the help of certain instruments, these observations being systematically recorded. Again, these conditions, instruments, and methods of recording have changed greatly with the development of science. Similarly, the subject matter under investigation greatly affects these factors. Yet, throughout all this change and diversity, observation continues to characterize scientific effort and procedure.

In like manner, experiment has played an important role in the development of science. It was soon found that definite situations could be set up for observation which would facilitate new discoveries, and give proof either for or against already existing beliefs. Experiment, then, goes a step further than observation to alter the observed situation.

Like observation, experiment is a development from a common place practice. Trial and error seem to be fundamental not only to human development and achievement, but also to the simpler organisms. What has really happened is that in science the practice of trial and error has been carried out under definitely described conditions, and often guided by insights and opinions.

2. A number of recent writers have called attention to the fact that experiment is often used by scientists to prove theses which have come to them in flashes of insight following continued reflection.
In a similar fashion mathematics has been used effectively by science for the purpose of expressing the extensions and relations of observed objects and events. Indeed, since the days of Descartes many scientific thinkers have conceived the relations between various aspects of the universe to be essentially mathematical. In any case, the fact that scientific observation has found mathematics extremely useful, is very apparent.

For the purpose of further facilitating observation, analysis and abstraction have proved highly effective. Although both procedures are closely related, for purposes of clarity it should be pointed out that analysis refers to the process of breaking a matter down into its constituent parts, while abstraction denotes the process of excluding all excepting just those parts which are to be observed. Again, this way of dealing with matters at hand is a development from common sense. The plain man assumes very naturally that he can best know a thing when he can see it distinctly separated from other factors which may be present. There is, indeed, an impulse of the mind toward simplification which gives itself readily to analysis and abstraction. For this reason, the plain man takes his motor car apart and studies each unit separately. When, by such a procedure he learns

how carburation takes place, how ignition is initiated at the proper time and how power is delivered to the driving wheels, the man assumes that he has some knowledge of the motor car. There is, in fact, some reason to believe that the inclination to analyze and abstract is native to the very structure of mind, and essential to its apprehension of things. This is, at the same time, a metaphysical question about which there may be considerable dispute. The fact remains, that the modern mind falls into the habit of analysis and abstraction with perfect ease. Further, it is apparent that a procedure of this kind is implied in a development of the common place practice of observing objects.

Now in many instances this practice of reducing everything to its constituent parts has been linked further with the common sense demand for simplicity. Complex phenomenon is then not only reduced to its structural parts, but reduced to its ultimately simple parts. After this observation is made both sure and easy, for simplicity is much more readily comprehended than multiplicity or complexity. Accordingly, the method of abstraction has developed into a sort of guiding principle to scientific inquiry. It might be stated in this way. "A matter is best and most accurately observed after it has been reduced to its simplest possible form." Some scientists even have claimed that knowledge of things thus observed in their elementary form is alone reliable, and inversely, only those matters that can be seen simply can be really known.
Doubtless Descartes' insistence upon clear perceptions of things has done much to commend this principle to scientific thinkers.

Abstraction has a still more special use in scientific inquiry. Subjective factors such as desire, purpose, interest, and devotion, not only complicate the task of observing, but in many cases, actually disturb or bias the view. Science, therefore, finds it convenient to exclude these subjective factors from its pre-view. As Professor Tennant puts it, "Science abstracts from the subjective factors involved in knowing, and regards its objects, though it calls them phenomena, as if they were as independent of all subjects as they are of any one subject." Professor Max Planck goes further to insist that, "The first and most important quality of all scientific ways of thinking must be the clear distinction between the outer object of observation and the subjective nature of the observer." When this subjective element is thought of as part of the scientist himself, the term disinterestedness denotes the process by which its influence is excluded from the situation.

Again, Professor Planck expresses a great faith in this manner of dealing with the facts of life in a detached manner. He says, "In order to carry out this plan of action (dealing

5. F. R. Tennant, Philosophy of the Sciences, p. 135.
6. M. Planck, Where is Science Going? p. 138. Professor Max Planck seems to be highly representative of modern science as it is connected with the past. Therefore, much that he says is of first importance in this study.
with our lives scientifically), the facts of our lives which we now place under observation would have to be distanced in the past, so that our present complex of living emotions and inclinations would not enter as factors into the observation. If we could possibly carry out the plan in this detached way, then each experience through which we have passed would make us immeasurably more intelligent, than we were before, so intelligent indeed that in relation to our earlier condition we should rise to the level of super-intelligence postulated by Laplace." 7

After this fashion, then, disinterestedness toward the objects of experience has become a sort of dogma or principle of scientific inquiry as well as merely a mental habit. Subjective elements are looked upon with something of contempt while stoical resignation to what is actual, is commended. 9

"There is a natural antithesis between the scientific and the emotional mood; when one is in the saddle it must keep the other at spear's length." 9 "Science is essentially unemotional and impersonal, and its analytic, atomizing or anatomizing methods are not to be, in their matter-of-factness, destructive of artistic unités and poetical interpretations." 10

7. W. Planck, op. cit., p. 162 (Parenthesis supplied by writer.)

9. A psychological analysis of the stoicism in the modern attitude would be interesting and helpful. Many persons have found very keen enjoyment in bowing before the stern and relentless inevitable. They are happiest when their hopes are blasted - that is, the hopes which they parade before their fellows. One cannot help feeling that some such psychological facts lie behind much of the modern stoicism.


10. Ibid.
The pursuit of more effective observation carries science into still another type of abstracting. L. S. Stebbing describes it in this manner. "Science abstracts in order to obtain a universal standpoint so that an external world may be secured. Externality is thus bound up with the repudiation of the individual standpoint. That which is individual can only be 'lived through'; it cannot, therefore, be communicated; hence it is alien to scientific knowledge. Science must in some sense transcend the individual passing and seek the permanent in the flux of events."\textsuperscript{11}

Professor Herbert Dingle gets at the same thing from a slightly different angle, in his book, \textit{Science and Human Experience}. Early in the book he makes it clear that science is interested only in what is common among experiences.\textsuperscript{12} It is this common element in human experiences which makes it possible to verify conclusions, and posit the reality of an external world. On the other hand, there are individual experiences which, no doubt, are valid, but which must remain outside the province of science because they are not common to the experience of normal people. Professor Dingle admits this, but goes on in a treatment of morality and aesthetics, to limit these experiences until there is little of any significance left. Still, Professor Dingle is surely right in

\textsuperscript{12} On page 14, he defines science in this way and proceeds through the remainder of the book to explain the definition and apply it to the various areas of human experience.
starting his exposition of science with the principle that science deals only with what is common among human experience. Apart from that principle, verification and demonstration are quite unthinkable, for these efforts of science obviously have recourse to a universal, and in many ways external viewpoint, quite beyond that of any particular individual.

At the same time, common or collective experience is clearly an abstraction. It is a construction arrived at by a selection of elements in actual experience. Professor Dingle is aware that strictly speaking there are no common experiences. Every experience involves an individual element. Professor A. E. Taylor puts the point clearly, when he says, "To begin with, 'a collective experience', if it has any meaning at all, is a contradictory expression. For experience, as we have seen, is essentially characterised by unique individuality of aim and interest; in this sense at least, a true experience must be that of an individual subject, and no collection or aggregate can be an individual subject. The so-called 'collective experience' is not one experience at all, but simply an indefinite multiplicity of experience, thrown together under a single designation." 14

When, therefore, science confines itself to what is common in experiences all that is distinctly individual has to be excluded by the use of abstraction. To be sure, this is a quite legitimate procedure, and very effective in dealing with many areas of human experience, but the fact should

never be lost sight of that common experience is a construction arrived at by a rather arbitrary process of abstraction. Surely, if what Professor Taylor pointed out is true, such a collective experience should not be used as a criterion for what is real.

Likewise science finds it useful to abstract from its data all events that are irregular, novel or in any way disconnected from other classified events. Nor is this practice peculiar to the efforts of science. It is, on the contrary, an almost universal human disposition. Men are not content with a view of life which sees events as merely arbitrary and unrelated. There seems to be a very deep impulse in human life toward a predictable order of some kind. Therefore, in so dealing with its data, science is again taking over the disposition and assumptions of common sense, and refining them into more highly specialized methods of research.

"The problem of science," says Eddington, "is to discover the scheme underlying the regularities in our sense-data. . . . By defining our method we limit the subject matter of physics to the study of regularities. . . . This dropping of a variety of types of sense-data is also responsible for the wide gulf that now exists between the familiar world and the physical world." 16

Science then, following the common-sense impulse to see events fully related, abstracts a variety of sense-data, which appear

to be unrelated to the already discovered order of events. In this manner areas of fact dealing with irregularities, novel events, and miracles are simply delegated to some other discipline or more often, simply ignored.  

A specialized form of abstracting is evidenced in the common tendency for science to departmentalize the human personality. As Dr. Hart says,

"There are scientists and logicians who would like to separate intellect from emotion and even from sensation and make it a sort of pure white light shining above the wilderness of passion, sense, and primitive impulse. In their efforts to deal honourably with mind they tend to cut it off altogether from life, making art academic or perhaps supercilious and making logic and science intellectualistic. Such outcomes are inevitable as long as our psychology remains traditional and invidious."  

However, it can hardly be urged that science alone tends to abstract the intellect from the other faculties of personality. Intellectualism controlled thinking long before the dawn of modern science. Furthermore, the history of philosophy gives evidence of this tendency in the general efforts of systematic thinking. Still, on account of the way science looks upon certain aspects of feeling, this intellectualistic tendency is considerably emphasized.

The extreme to which science so often carries this abstracting process is very clearly illustrated by the description Eddington gives of the scientific observer.

"If you read about Einstein's theory, you will often find references to a peculiar person called 'the observer' - the man who is always tumbling down lifts or getting transported by aeroplanes travelling at 161,000 miles a second. Now you have a picture of him. He has one eye (his only sense organ) which is colour-blind. He can distinguish only two shades of light and darkness, so that the world is like a picture in black and white. The sensitive part of his retina is so limited that he can see in only one direction at a time. I should mention that we allow him any number of assistants equal like himself, so that they can keep watch on different parts of an experiment simultaneously and compare notes afterwards. We have deprived him of a sense of touch, so he can scarcely do the experiments himself. We do the experiments and let him keep watch. The point is that the whole of our knowledge of the physical world as it is conceived to-day in physics can be demonstrated to him. If we cannot convince him, we have no right to assert it."20

It should be admitted that the "observer" thus described and employed in scientific research, is a highly specialized kind of person. In fact, it is hardly necessary or even possible that he be a person in the stricter sense of that term. Because, not only is the intellect segregated from the rest of personality, but all the intellect excepting one or two highly specialized faculties is closed off. Indeed, any considerable use of the more general faculties of intellect would detract from the effectiveness of the "observer." At the same time, it is apparent that most scientific observers express more of their personality in their work than this described by Eddington. Yet, to be an observer of this kind is a sort of ideal for science which must be approximated if the most accurate and dependable results are forthcoming.

Therefore, in so far as the scientist himself approaches this sort of competency, he really becomes an abstraction. At least, it is difficult to imagine how changed life would be on this planet if it were peopled with "observers" such as Eddington described, instead of what are considered normal individuals. Admittedly, for purposes of method when certain areas of fact are at hand, this abstracting principle is both useful and necessary. Nevertheless, it should be kept in mind that the scientist is not really just an observer, but a man possessing all the qualities and possibilities of a man. Obviously, to be an observer may be an ideal in strict scientific procedure, but it is surely a very poor ideal for manhood in general.

In practical scientific procedure just where science becomes descriptive instead of merely observational is difficult to determine. The data of observation pass very quickly and in most cases very naturally into descriptive form. In fact, observation often impresses a person in the form of descriptive symbols. For example, a person looking at an orange gets the impression that it is yellow. The symbol yellow is descriptive, yet it is almost impossible to distinguish between the impression and its descriptive symbol. Even so, it is clear that upon any careful examination there is an essential difference between observation and description. In observation the subject is perhaps as nearly passive as in any other
attitude of attending. There are only two terms present, i.e., "the observer" and "the observed." When description is ventured, however, an entire world of persons is addressed and the subject, which, in mere observation is almost completely passive, becomes expressional. The subject casts his lot in the great human struggle to convey the content of impressions to others. The whole matter of symbolism becomes involved, which, even the most exact mathematical form, is an imperfect means of conveying impressions. Moreover, regardless of the exactness of the symbols used, that is, how perfect the terms of expression really are from the formal point of view, accuracy of expression depends also upon what is evoked in the individuals who are addressed. In other words, description because it addresses itself to another world of listeners, introduces an element of personal equation and fallibility which does not apply to mere observation. 21 Still further, this is true largely because observation is an individual matter. It is a matter between subject and the events observed, while, description is a communal or social matter. An individual impression may reign unchallenged until it is cast out to become social property.

Science, therefore, has developed a particular mode of communication by which data may be described most successfully.

Classification according to similar or identical properties, occupies a large place in this language of science. Jevons thus describes the manner in which scientific classifications are determined. He says,

"It is impossible to detect a point of similarity between two or more objects without thereby joining them together in thought, and thus forming an incipient or potential class. . . . classification is the placing together, either in thought or in actual proximity of space, those notions or objects between which identity has been detected." 22

In each case, however, these classes do not include all the properties of the object or objects. Elements of difference and individuality are therefore abstracted from the data at hand, while only similarities and identities are indicated.

In the effort to correlate past occurrences and predict forthcoming ones, science has found the principle of causality very useful. Perhaps J. S. Mill has stated the principle as well as anyone. He says, "We may define, therefore, the cause of a phenomenon to be the antecedent, or concurrence of antecedents, on which it is invariably and unconditionally consequent." 23 Of course, the plain man would not state the matter in this way. On the contrary, it would perhaps never occur to him that such a common-place matter called for definition. Nevertheless, that each event must have a cause, or that it should at least, have a cause, seems to be rooted in the very nature of experience itself. G. F. Stout, in his

Gifford Lectures, insists strongly upon this point. In fact, he endeavours to show that the causal principle lies behind the various animistic attempts to explain experience, and is supported by a "genuine insight into the nature of things." This disposition to employ the principle of causality, Stout terms, "the Causal animism of Common Sense," which through the ages of development has sought to account for events by reference to personal agency as suggested by awareness of themselves as agents. Of course, the success of this endeavour has been impaired by the anthropomorphic fallacy. But, "However untenable certain special and shifting shapes may be which it has assumed in various stages and phases of human development, the general principle remains unshaken by direct criticism." Thus, Professor Stout argues that the "Causal animism of Common Sense," cannot be discredited simply by the charge of illusion, or projection. On the contrary, there is a strong presumption in its favour, and it remains for those who reject it to furnish a cogent reason for doing so along with a logical equivalent to take its place.

Whether or not Professor Stout is able to defend this position is not the primary concern of this discussion. It is rather the way he links the causal principle with common sense, that is of special interest here. The plain man looks for

27. Ibid, p. 36.
28. Ibid, p. 36.
causes almost without realizing it. He assumes that an event is not known significantly until its cause has been determined. In a real sense, knowledge is to him causal knowledge. When, therefore, science makes use of the causal principle, it merely carries on the common sense search for causes, in a special manner. Again the relation between science and common sense is apparent. Furthermore, it is apparent that this affinity with common sense has contributed largely to the success which science has attained with the masses.

Generally speaking, present day scientists are not inclined to apply the causal principle as rigorously as the scientists of last century. In fact, the causal determinism which characterized the orthodox science of last century seems to be less and less acceptable. Various attempts are made to avoid the extremes to which such a determinism leads. Professor DeRuggiero avoids this extreme, and yet maintains causality as a principle, by distinguishing between causes in the external, deterministic, and scientific sense, and causes in the qualitative sense which describe the internal personal motivation of purposive agents. D. W. Gotschalk suggests that there are many kinds of uniformity or unifying connections, such as qualities and relationships, which are entirely independent of

the causal category. Hence, the causal claim furnishes

uniformity of just one of many types, and determinism, in the older sense of the term, is denied.\textsuperscript{31}

Professor Max Planck is nearer the position of science as it manifests itself in the modern scientific attitude. For him the causal principle is not simply a method of relating events as more liberal scientific thought maintains, but it is something transcendental, whose nature it is to relate events regardless of whether or not the relation is recognized by the researcher. He says:

"The conclusion therefore is that the highest types of intelligence are subject to the causal law in the processes that result in even their greatest achievements. This is the first part of our conclusion. And the second part is that in principle we must reckon with the possibility that a day will come when the more profound and increasingly more refined development of scientific research will be able to understand the mental workings not only of the ordinary mortal but also the highest human genius in their causal relations; because scientific thought is identified with causal thought, so much so that the last goal of every science is the full and complete application of the causal principle to the object of research." \textsuperscript{33}

However the causal principle is viewed and employed by modern scientists, the fact remains that science seeks to relate the various events of experience to their respective causes. In fact, experiment very often has been simply the manipulation of possible causes and the recording of effects thus produced. In the words of Jevons, "The great object of the art of experiment is to ascertain exactly those circumstances

\textsuperscript{31} Determinism will be discussed further under the subject of scientific law, p. 65 f.
\textsuperscript{32} W. Planck, \textit{Where is Science Going?} p. 157.
\textsuperscript{33} Ibid, p. 158.
or conditions which are the requisite for the happening of
any event 'X'."34 Hence, determining causes have been an im-
portant part of the scientific programme of control.35 Science
becomes an instrument of control when and because it discovers
the causal connections between events and conditions of fact.
Regarding this Professor Dewey says,

"What science actually does is to show that any natural object
we please may be treated in terms of relations upon which its
occurrence depends, or as an event, and that by so treating it,
we are enabled to get behind, as it were, the immediate quali-
ties of the objects of direct experience present, and regulate
their happening instead of having to wait for conditions be-
yond our control to bring them about." 36

As was suggested earlier in this chapter, experiment is
very closely linked up with preconceived opinions and insight.
In its more developed form this insight or "hunch" of the un-
professional investigator, becomes an hypothesis. As Professor
Planck points out,

"The Physicist is bound, by the very nature of the task at hand,
to use his imaginative faculties at the very first step he
takes. For the first stage of his work must be to take the
results furnished by a series of experimental measurements and
try to organize these under one law. That is to say, he must
select according to a plan which will in the first instance be
hypothetical and therefore a construction of imagination. . . ."37

"Every applied hypothesis which succeeds in throwing the search-
light of a new vision across the field of physical science rep-
resents a plunge into the darkness; because we cannot at first

34. Jevons, op. cit., p.22.
35. Cf. p. 33 of present work.
See also B. Bavink, op. cit., p.75.
reduce the vision to a logical statement." W. S. Jevons goes even further to urge that, "Even when we are engaged in apparently passive observation of phenomenon, which we cannot modify experimentally, it is advantageous that our attention should be guided by some theoretical anticipations." Bavink speaks of hypotheses as a "product of scientific imagination," a creative act, "which is on a like plane with the productive activity of an artist."

Herbert Dingle makes an interesting classification of hypotheses. According to his point of view some hypotheses are of such a nature that they may be verified by subsequent experiment. Others have actually been verified to the point where they have become criteria for judging newly proposed explanations of fact. Still others pertain to areas of fact in such a way that they cannot be verified but are none the less useful.

"For example, many of the other diverse phenomena of the solar system can be correlated by assuming that a few million years ago a star passed close to, or collided with, our Sun. Unless we can live through passed times and watch events from a suitable viewpoint elsewhere in the universe, it is impossible to see how this hypothesis can be verified by observation.

As a matter of procedure it is to be admitted that the use of hypotheses is indispensable, and even natural in the attempt to unify experiences. But, this only intimates how

38. Planck, op. cit., p. 90.
41. Dingle, op. cit., p. 23.
closely the scientific procedure follows the impulse to explain. In fact, events of experience are usually most satisfactorily correlated when some explanation of them is offered. That is, correlation is not so much different from explanation. For example, in the instance of an unverifiable hypothesis quoted from Professor Dingle, the "diverse phenomena of the solar system," receive a plausible explanation, and the value of that hypothesis for correlating those elements, lies in the plausibility of it as an explanation. Even a purely instrumental hypothesis, after being used successfully for a time, develops quite naturally into a possible explanation of events. If, however, the hypothesis is partially or completely verified, it comes to be recognized as a plausible explanation instead of merely an hypothesis. It may be possible to insist that, "As biologists it does not matter to us whether the higher forms of life actually emerged from the lower ones or not," so long as the evolutionary hypothesis correlates the facts. But, if it were demonstrated that the higher forms did not emerge from the lower ones the hypothesis simply would not correlate the facts, and as such would not be useful. In short, the usefulness of an hypothesis to correlate experiences depends largely upon the success with which it explains the events experienced. Hence, there is little difference between a recognition of the truth or actuality of

42. Dingle, op. cit., p. 46.
43. See Jevons, op. cit., p. 131.
an hypothesis and its usefulness in correlating experiences. Here again, the kinship between science and the common sense position is apparent. Science has taken a place along with mythology and theology, in the attempt to account for the facts and events of experience. It is needless to suggest that one of the chief reasons for the popularity of science in the past three centuries was its promise of a reliable explanation for the very facts which myth and theology once sought to explain. Also, the sphere of science may be rigorously limited by some modern scientists to include only certain special functions such as experiment and measurement. But, the fact remains that historically science has offered explanations, and, it is in that kind of science that the modern mind was born and reared. It is apparent, that the hypotheses suggested to the popular mind during the last three centuries have not been merely instruments. At least they have been considered to be plausible explanations based upon observation of actual fact.

Still further, two things should be pointed out concerning the use of hypotheses. In the first place, the difference between hypotheses is very often overlooked. Those of the unverifiable kind often times become norms of judgment, or even metaphysical systems into which all new experiences are forced. Accordingly, most scientific assertions should be prefixed by a statement of the hypothesis upon which it is made, and how

44. See B. Bavink, op. cit., p. 37, f. for a criticism of the positivist view of science.
far that hypothesis had been actually verified. And, secondly, the process by which hypotheses are verified or are claimed to be verified is not without its difficulties. For, the hypothesis accepted naturally will govern largely the results of investigation made on the basis of it. For example, if the evolutionary hypothesis is accepted, the results of investigation made from that assumption are not likely to contradict it. In other words, the hypothesis will, in the nature of the case, affect decisively the results of investigation. A near-sighted person could scarcely learn that he was near-sighted by the use of his own sense of sight, for he sees things only through a near-sighted vision. In like manner, it is difficult for a person looking upon experience through the windows of a certain hypothesis to test the perfection of those windows.

The use which science has made of "law" has been a subject of much debate, especially by those who were interested in religious apologetic. It is connected with the interest of science in regularities, causes and continuity. Professor Whitehead suggests that the conceptions of scientific law may be classified under four heads. First, law conceived as immanent, that is, "the order of nature expresses the characters of real things which jointly compose the existences to be found in nature." A law of nature, therefore is a statement of the character of existences in their relation with one another. Secondly, there is the thought of law as imposed by an externally
related metaphysical reality usually identified with a Deistic God. Thirdly, laws are thought of as merely observed succession, or the description of apparent regularities. And, fourthly, there is that which Whitehead calls the conventional interpretation. According to this view a physical law is simply a formula for interpreting facts and occurrences in the physical world.\(^4\)

As to which of these conceptions is correct scientific opinion is by no means agreed. It might be possible, however, to classify this opinion under two headings. First, there are those scientists in the same stream of thought as Professor Dingle, who look upon the laws of nature as instruments or formulae by which the experiences of physical objects and events are correlated. And, secondly, there are those who regard scientific laws as in some way part of the nature of things. However, it cannot be claimed, as some apologists of religion are inclined to do, that scientific opinion is generally willing to identify itself with the first class. Indeed, it is quite doubtful if the majority of scientific opinion is on that side, even among modern scientists. Historically, science has followed, rather, the second class of thought. Therefore, it must be recognized that apart from the admissions which certain modern scientists are willing to make regarding the nature of scientific laws, generally speaking, the modern mind thinks

45. Whitehead, *Adventures In Ideas*, p. 142 - 144.
characteristically of laws constituted in the nature of things. To the popular mind the law of falling bodies is not simply a statistical report on the activity of bodies, or a formula for the correlation of events. It is, on the contrary, a principle or law constituted in the nature of things which literally governs events. Therefore, it is easy to over-estimate the apologetic value of these more recent views of natural law. 46

46. Especially those modern scientists who accept the quantum theory favour indeterminism as against classical determinism. They are inclined to look upon so-called laws as statistical and measurements as symbols which do not comply exactly with that property which is measured. See V. F. Lenzen, Article in Journal of Philosophy, Vol. 30, No. 11, May, 1933., Indeterminism and the Concept of Physical Reality, pp. 281 - 288.
CHAPTER V

PHILOSOPHICAL ASPECTS

SCIENCE and PHILOSOPHY

During the first few centuries of scientific development, philosophy cooperated so well with the efforts of science that the classical relationship between the two continued. In fact, with the exception of a few clashes between the more religious type of philosophy and naturalistic science, this relationship has been maintained until comparatively recent times. The last century, however, has brought a decided breach of the relationship. After realizing her success in attaining control over nature, science has regarded the claims of philosophy over the entire scope of experience with considerable misgivings. Also, the precision and concreteness of scientific procedure has led many to look upon the more speculative method of philosophy with suspicion. Some leaders of thought have been impressed so much with this apparent certainty of science that they have endeavoured to make philosophy scientific, while among some

2. Professor John Dewey, Whitehead, and E. G. Spaulding are notable examples.

* In this connection the term 'philosophy' is used broadly to include metaphysics.
schools of science, philosophy actually is repudiated. Representatives of this position claim that there is no longer any need for philosophy, because the knowledge once afforded by speculative efforts can be furnished by science without the element of uncertainty which has always characterized the philosophical method. Science, they say, deals with facts while philosophy merely speculates about facts. At its best, philosophy can afford only the most probable opinion, while science leads to knowledge, the objectivity of which banishes all element of doubt. Likewise, those who look upon philosophy in this manner emphasize the point that philosophy can judge the validity of judgments only according to a theoretical standard which itself may be subject to question, whereas, science has an objective standard, namely, observed situations of fact.

That this position should appeal to the less professional section of thinking people is quite understandable. Many of them feel quite out of place in the regions of speculative thought. They seem to think that the efforts of men who are competent in this sphere are quite futile. Also, an engrossing interest in practical matters has tended to make theoretical pursuits unpopular. On the other hand, objective knowledge from which all elements of doubt are cast is what men have been seeking. Therefore, the masses of intelligent

people are inclined to join in the denunciation of philosophy and to look upon the pronouncements of science with unusual favour.

Notwithstanding these claims of divorcement science and philosophy are very closely related. There has never been a science which has operated entirely independently of a philosophy of some kind. That is, behind every effort of science there is a theory of being and a theory of knowledge, apart from which effort would be without direction or significance. Even the denial that this is so implies its affirmation. When a person says, "there is no need for philosophy," he assumes first, that the nature of things is such that reflective thought is ineffective in attaining a satisfactory knowledge of it, and secondly, he assumes that one kind of knowledge is more dependable than another. Obviously, the first assumption involves a theory of being or Reality, and the second, a theory of knowledge. Professor A. E. Taylor puts the point clearly when he says:

"As we cannot, so long as we allow ourselves to think at all, avoid asking these questions as to what 'is' and what only 'seems', it is clear that the attempt to dispense with metaphysical speculation altogether would be futile. We have really no choice whether we shall form metaphysical hypotheses or not, only the choice of whether we shall do so consciously and in accord with some intelligible principle, or unconsciously and at random." 5

Generally speaking it is true that philosophy can determine validity only in accordance with a theoretical system

5. A. E. Taylor, Elements of Metaphysics, p. 5.
for which no complete logical or empirical proof can be offered. In a real sense the postulates of this system are more fundamental than proof itself. Proof is possible, on the other hand, only on the assumption of them or other postulates similar to them. But, philosophy is not unique in this necessity to determine validity according to postulates which are quite beyond conclusive proof. Indeed, any attempt to consider validity in its ultimate implications is faced with the same limitation. After all, there is no logical or empirical reason why immediate perception should yield knowledge any more valid than any other kind of awareness. If immediately perceived knowledge is to be considered as a criterion for validity, it must be assumed the same as any other criterion. Nor is there anything in the nature of what is objective in the sense of being independent of subjective factors, to prove conclusively that an apprehension of it is any more valid than an apprehension of something more closely related to subjective states. On the contrary, immediately perceived or objective knowledge can be set up as a standard for determining validity only as a postulate which is partially justified by practical results, but which, strictly cannot be proved. That is, the claim often made by the supporters of the scientific viewpoint for a standard of validity which is above the

6. See Parsons, The Universe of Our Experience, p. 23, for an account of how common sense empiricism becomes a theory of knowledge.
limitations and uncertainties of a theoretical system is simply mistaken. The difference between science and philosophy is not that science has a proven standard of validity whereas philosophy has only a theoretical one. In either case a theory of knowledge and a doctrine of Reality are necessary, but beyond the possibility of complete proof. Rather, the difference lies in the fact that philosophy seeks to examine these postulates whereas science simply takes them for granted.

Suggestion has been made already to the effect that much in the speculative system of Descartes and Spinoza regarding the nature of the world and the knowing subject has been taken over into the scientific position. At the same time, the content of this world-view, has been related so closely to the assumptions of common-sense that the fact that it has been taken over from speculative thought is obscured. As in everyday life it is believed that sense-perception is the valid basis of knowledge, so also, it is believed in

7. In order to simplify this discussion the term 'world-view' will be used to denote the system of postulates and beliefs regarding the nature of the world and the knowing subject. That is, a world-view includes a theory of reality and a theory of knowledge, which is too fundamental for absolute proof, but which cannot be avoided in any attempt to think. In thus using the term, world-view, the idea of a picture of Reality is excluded. "No psychological inquiry or any investigation of human conduct can long be kept away from the problem of how and by what sanction of authority we presume to investigate and know anything." Taylor. Fact, the Romance of the Mind, p. 75.
science. However, regardless of how simple these beliefs about the world and experience are, or how natural and effective, they are after all, philosophical and speculative. They represent a world-view even though it is a common-sense world-view. Consequently, when science revolts against philosophy, what it really opposes is not philosophy as a possible coherent system of postulates, but such a world-view as would render the efforts of science of second rate importance. On the contrary, science has presupposed a very definite view of things without which it could never have exercised the influence it did upon the modern mind.

Some modern scientists like Eddington, Jeans, and Whitehead, being conscious of these assumptions have endeavored to examine and systematize them. Others, being aware of the philosophical problems implied in scientific inquiry, attempt to get around them by accepting a phenomenalistic standpoint. According to this theory, science deals simply with experiences or impressions of things and relegates questions of their actuality to metaphysics. Herbert Dingle develops this position in his book, Science and Human Experience. Yet, it is apparent throughout the treatment that Professor Dingle is setting forth a philosophy in spite of the fact that he does

8. c.f. F. R. Tennant, Philosophy and the Sciences, Sec. V, p.130
Also, D. Wringer, Article, The Relations of Science and Philosophy, in Philosophy, April, 1927, p. 154.
9. See Bradley, op. cit., p. 122, for a more complete statement of this viewpoint.
it in order to avoid the problems of philosophy. For, phenomenalism, or positivism as it is better known, holds an important place among the leading world-views. Whether or not this position is the position of modern science is quite another matter. Likewise, its integrity as a world-view need not be discussed. The point is that in accepting this standpoint science does not divorce itself from philosophy, nor does it raise itself above the uncertainty which theoretical considerations involve. On the contrary, science really changes its affiliation from realism to positivism and in so doing, while it evades the problems of realistic philosophy, it involves itself in the limitations of positivism.

More often, however, the observation made by Dr. Tennant is correct. He says, "The scientist does not make it his business to explore his own presuppositions and as certain their own epistemological standing." Or as Professor Hart puts it, "Contemporary scientists are rarely able to make critical examinations in the realm of mind. Their training has not fitted them for critical examination of their own processes."

Moreover, when science confines itself to pure experiment and description, the philosophical basis is by no means so important. But, a closer inquiry into the development of

10. See A. C. Ewing, Idealism, a Critical Survey, Chapt. VII, pp. 290 - 382, for an able summary of these limitations.
11. Tennant, Philosophy of the Sciences, p. 20.
science and its influence over the popular mind reveals that scientific effort has not been confined always to measuring and describing objects of experience. On the contrary, "when it reaches a sufficient degree of maturity of judgment and self criticism, it breaks through its own shell, and definitely in the name of scientific truth claims to pass over into a new way of researching and theorizing." In the language of Professor Eucken,

"The tendency towards bold speculative thought has deserted the philosophies to find a home with the natural scientists; in their case there is no lack of bold raids into the land of truth, and the commingling of philosophical assertion with capable research work prevents many people from realizing the outrageous character of the speculative attempt." 14

Parsons is doubtless correct in affirming that, "... every scientist becomes a philosopher immediately he leaves his observations and experiments and attempts to find, in the realm of pure thought, some interpretation of the facts that he has collected." 15 But, what is even more significant, is the fact that science has ascended to a place of honour and leadership in the lives of modern persons, not so much by offering accurately tabulated observations, as by suggesting an interpretation of the facts of experience. In short, it is as philosopher that the scientist is most popular. James Ward then was right in saying that apart from the philosophy upon which

Philosophy Oct. 1933.

14. R. Eucken, Main Currents of Modern Thought, p. 27.
modern science is based, "... science would have been a very feeble thing and its future would have been most precarious and uncertain." However, simply because the assumptions of this new way of viewing things were so closely related to the assumptions of common sense, the fact that science was really philosophy, did not become apparent. Therefore, the difference between verified fact derived from experiments carried out under rigorous conditions, and philosophical beliefs has been obscured. The world-view or philosophical outlook of science has been accepted by modern persons more or less indiscriminately along with observations and results. Indeed, this acceptance has been so complete, owing to the cumulative force of scientific results, that this particular world-view has become fundamental to the structure of the modern mind. If, therefore, one is to understand this attitude of modern persons he must examine these beliefs which go to make up the world-view along the lines of which people of this generation are constrained to think.

THE WORLD - VIEW

A. Metaphysical Doctrines Concerning the Nature of Reality.

(1) Scientific inquiry of almost any kind necessitates the assumption of a very definite type of world. The existent objects in this world must appear fundamentally the same to all possible observers. Indeed, scientific verification is possible only because it is taken for granted that an object will appear essentially the same to all unbiased observers. What is strictly individual in experience, therefore, is ignored or labelled subjective. It is excluded from the world assumed by science not simply because it cannot be verified, but also, because the very nature of individual experience precludes a description of its object in precise and intelligible terms.

At the very outset it is to be admitted that this way of regarding objects of experience has produced many valuable results. By no means least among these is the ability to predict and control natural events and forces for human ends. Also, this way of treating objects has made it possible to classify and systematize valuable knowledge of the physical world in such a way as to make it more precisely and completely communicable. Therefore, as part of a method of dealing with certain areas of experience, especially that in relation to physical objects, there is considerable justification for assuming the existence of such a world.
At the same time, there is little or no justification for the inference so often drawn, namely, that the "objective world" conveniently assumed for purposes of inquiry, is the one and only Real world. For, strictly speaking, every object is an object of individual experience. No two persons ever observe even the simplest object in exactly the same way. It is a high degree of similarity rather than identity in the experiences of all normal persons which makes it possible to regard these experiences as common. Strictly speaking, therefore, a common experience is an abstraction. As Professor Taylor clearly points out, "experience . . . is essentially characterised by unique individuality of aim and interest, in this sense at least, a true experience must be that of an individual subject, and no collection or aggregate can be an individual subject." Common experience, on the other hand, is a construction constituted of elements selected from individual experience on the basis of similarity. To be precise and consistent in this position objects should be classified on a percentage basis. That is, objects which were observed with the greatest degree of similarity by the largest number of accurate and unbiased observers would be classified as say, ninety percent existent. However, simply because complete identity in

17. H. Dingle, op. cit., p. 17.
18. op. cit., p. 60.
the experience of the same object is an hypothetical condi-
tion, which is never quite attainable in practical life, the
one hundred per cent mark would never be reached.

At the same time, the degree of similarity with which a
given object is experienced by normal persons varies accord-
ing to the type of object under consideration. For example,
in observing a single cell by the aid of a microscope, the
degree of similarity with which an ordinary group of persons
would experience the object would be comparatively high. Al-
though the similarity could never become complete identity,
for purposes of scientific inquiry it might be permissible
to assume that the observation was identical. But take the
example of an object of beauty. In this experience there
would be a much greater degree of difference. Still if there
were no similarity in the experiences of beauty, such a thing
as a collection of artistic productions would be quite impossi-
ble. The problem therefore, is to set the limits as to just
what degree of similarity is necessary before an observed ob-
ject can be regarded as existent in the objective world. In
his book, Science and Human Experience, Professor Herbert
Dingle, claims that this distinction between experiences
common to all normal persons and those peculiarly individual
in character mark off the domain of science from other aspects
of life. 19 "The aim of science, in short," he says, "is to

see how far it can establish a rational correlation between common experiences. 20 Yet, Professor Dingle never says precisely how common, or what per cent of similarity in experience is necessary to establish an experienced object as existent in the objective world. In a purely practical connection, he really is not called upon to do so. The matter is quite different, however, if it is assumed that everything which is Real is included in the world thus defined and everything which is not is subjective and unreal. This is a metaphysical postulate; not a practical assumption. Dingle is aware of the tendency for persons engrossed in scientific investigation to pass over from the practical assumption of an "objective world," to the metaphysical affirmation that it is the only Real world. Therefore, he goes at some length to guard against it. In his own words:

"It is sometimes claimed that in the scientific investigation of Nature the assumption is made that such things as beauty and moral values do not exist. This, however, is untrue. Science leaves these things out of account because they are not common experiences but individual ones. . . . Science selects its field as that of the experiences which are common to all normal people, but makes no assumption that that field includes the whole of experience, and it explores that field without prejudice of any kind." 21

While this may be true in the case of Professor Dingle and some leaders of science, the fact remains that the masses of men who have accepted the scientific viewpoint, under the

20. Dingle, op. cit., p. 21
necessity for a world-view, have universalized this technical postulate of existence into a metaphysical dogma. Accordingly, they regard only those objects as Real which occupy a place in the "objective world" thus defined.

Some exponents of the scientific viewpoint are inclined to deal with this so-called "objective" world as if it were given. Like Margaret Fuller's Universe, it simply is to be accepted without further argument. However, the question naturally arises, "given to whom?" That is, the very term "given" implies an experiencing subject, and an experiencing subject can not be some corporation in which individual experience is actually transcended. In other words, to say that this world is "given" does not take away the individual element so carefully guarded against by those who espouse the "objective" viewpoint. Furthermore, if everything is to be accepted as "objective" which is "given" in human experience, obviously this so-called "objective" world of common experiences does not exhaust everything by any means. For, in vast areas of experience such as religion, morals, and aesthetics, the common elements are admittedly small in proportion to the distinctively individual elements. Therefore, to proceed as if the world necessarily assumed for purposes of certain types of inquiry actually and exclusively were "given", is unjustifiable. On the contrary, to establish an identical relation between the conceptual framework of this "objective world" with the actual or real world, requires logical reasons the same as any other metaphysical postulate.
(2) In the same way scientific observation and experiment is possible only on the assumption that the world of objects is such that no decisive change is rendered in them by the scientific process. That is, it is assumed that the phenomenon under observation is not affected by the fact that it is being observed, and that the manipulation of conditions involved in experiment does not alter the essential nature of the objects which are being considered. Rather, it is only as these objects are regarded as unaffected by these processes that accurate and dependable knowledge of them can be attained.

Again, the success of this assumption within the limited scope of scientific inquiry combined with the need for a world-view has led many advocates of science to make this methodological assumption into a metaphysical doctrine. Hence it is affirmed that the nature of Reality is such that observation and experiment applied to various aspects of it make no essential change in its nature. Reality stands in its own right unaffected by whether it is observed or not. At the same time, some leaders of science have become aware of this fallacy. According to a recent work by Sir James Jeans, "... science has gradually discovered that its nature 'standing by its own strength' was an assumption rather than an ascertained fact. . . ."

Even so their discovery has not been made among the masses of scientifically minded men. On the contrary, popular thinking

along scientific lines is prone to accept the philosophical position that the "objective world" is unaffected by observation and experiment, and to assume that the position has been established upon empirical evidence in a way that is quite beyond question.

The assumption is to be admitted that observation and experiment do not affect certain types of objects to such an extent as to render the treatment of them in that manner impractical. Yet, this limited success is by no means sufficient grounds for generalizing the postulate into a principle of Reality. For purposes of some types of inquiry it may be legitimate to assume that the objects of experience are affected in no essential way by observation and experiment, but it is quite another thing to say that the nature of things is such that they are unaffected by the scientific process. The first is a methodological principle, the second, a metaphysical dogma.

No amount of empirical evidence could prove the latter for empiricism assumes it to begin with. As a matter of fact, the scientist is faced constantly with the problem of how much the conditions of his experiment actually alter the nature of the results observed. He must always assume that a leaf is the same under a microscope as it is on the plant, yet, he knows this is not the case.23 Moreover, there is an element of truth

in the idealist contention that things are only as they are in relation to the fact of mind. Completely passive observation is an abstraction. This was made clear by Kant when he insisted that the mind was spontaneous and even coercive in relation to the objects of experience. At any rate, as a metaphysical doctrine the affirmation that objects in the actual world are unaffected by the fact of observation and experiment has never been proved, and cannot be proved by empirical evidence. As such, therefore, it must stand or fall like any other metaphysical doctrine on the basis of its own coherency as a view of reality.

(3) Much the same holds true in the case of analysis. Its success as a method of dealing with certain sectors of fact has been demonstrated. But, this success is possible only on the assumption that analysis does not change in any essential manner the nature of what is being observed. Moreover, for practical purposes, in dealing with certain types of objects, the assumption does not involve any considerable degree of error. For example, a small bit of stone may be taken from a cliff and studied quite apart from its native relations without affecting any serious change in the composition of the stone. But, when for purposes of inquiry, the heart is removed from a living organism an essential change has been wrought which the skillful investigator must keep in mind. In relation to the circulatory system and other facts of animal life, the heart is one thing, but, removed from that context
it is little more than a structure of muscles and valves. It depends largely upon what type of knowledge is desired, whether or not analysis of this kind is practical at all. But in any case, it is apparent that analysis makes a difference in the nature of what is investigated. Even in the instance of the isolated bit of stone, before a thorough understanding of it could be attained, the relations severed by analysis must be re-established as far as possible in the imagination of the investigator.  

For practical purposes, then, in dealing with certain areas of fact, from some points of view, it is quite permissible, indeed necessary, to assume that analysis does not alter the nature of the material at hand to such an extent as to make analysis impractical. Further, it is possible for the imagination of the investigator to reconstruct much that is destroyed by analysis. Yet, this by no means warrants the inference that the nature of things is such that analysis does not affect them essentially. This metaphysical inference is often made more or less unconsciously by exponents of the scientific method and stated categorically in this manner, "objects in the Real world may be analyzed without altering their essential nature and inversely, any object which will not submit to analysis is not Real!"

24. Especially in using the principle of analysis effectively, the imagination of the scientist is vastly important. However, such imaginative re-construction does not re-instate the relations broken by analysis, although, for practical purpose, it is valuable.
As in the case of observation and experiment, the practical assumption becomes a metaphysical dogma for which there is little or no empirical evidence. Moreover, the practical results of the assumption justify it only in the sphere or spheres where those results are manifest. Consequently, to say that an object is not Real because it will not submit to analysis without a serious change being effected in it, goes quite beyond the grounds of logic or even common sense.

(4) In much the same way, scientific inquiry necessitates the assumption that the objects under observation may be separated from their normal relation with subjects of experience and regarded in an "objective"manner, without altering their character in any decisive way. Science even insists that only by thus treating situations of fact can they be most accurately understood. Professor Max Planck calls this the first step in every specialized branch of science. Defining it further he says,

"In other words, the fundamental principles and indispensable postulates of every genuinely productive science are not based upon pure logic but rather on the metaphysical hypothesis - which no rules of logic can refute - that there exists an outer world which is entirely independent of ourselves. . . . The first and most important quality of all scientific ways of thinking must be the clear distinction between the outer object of observation and the subjective nature of the observer."

Over against this position is that of Subjective Idealism. Although Kant insisted upon the importance of mind in the structure of Reality, it was Berkeley who first maintained a

thorough-going idealist position. In his own words, "... all the choir of heaven and furniture of the earth, in a word all those bodies which compose the mighty frame of the world, have not any subsistence without a mind - that their being is to be perceived or known:" 26. "... For as to what is said of the absolute existence of unthinking things without any relation to their being perceived, that is to me perfectly unintelligible." 27

While Professor Planck may be right in urging that no amount of argument could disprove the hypothesis that the objects of observation are independent of the subjective nature of the observer, the same thing is true of the idealist position. Perhaps what has made Idealism a constant force in modern thinking is just the fact that any demonstration of Reality involves a thinking subject, for it is quite impossible to cite an instance of Reality which is actually independent of some thinking subject. Possibly, Reality is independent. Common sense seems to suggest that it is. But as far as logical or empirical evidence is concerned Idealism can hold its ground. Even so, a thorough-going Idealism has never become a practical creed. The common man revolts against the doctrine that an object which has never yet come into a relation with a thinking subject does not exist. At the same time, the abiding truth of Idealism has never been successfully refuted; namely that Reality and experience are indissolubly united. Nor does this truth contradict the dictates of common sense which has sought always unity in experience. Although it may be possible

27. Ibid p. 40. See also G. D. Hicks Berkeley p. 77f.
28. See Taylor op. cit., p. 81.
to disregard Subjective Idealism in its more extreme form, yet the truth which it has sought to convey, and which has made it so influential in modern thinking, cannot be gainsaid. At any rate, Independent Realism such as Planck advocates is not conclusively self-evident.

Still further, if the assumption of an "objective world" independent of experiencing subjects is more than provisional, then a dualism is inevitable; for, according to this view there are two distinct and independent realms of being, namely, "objective world," and experiencing subjects. The only way this dualism could be dissolved would be to relate the two realms in some fundamental way. But, if this relation is really fundamental, then surely to regard the "objective world" as if there were no such relation to subjective centers of experience, is unjustifiable. In fact, any effort to dissolve the dualism would seem to contradict the assumption of "objective world" standing in its own right independently of subjects.

Now, Dualism and Pluralism as systems must not be regarded as impossible world-views. Simply because this doctrine of the independent world involves such a system does not, ipso facto, prove it untenable. At the same time, it is clear that neither Dualism or Pluralism is supported uniquely by either logical or empirical evidence. Inversely, they must depend for their justification on the same grounds as any other view of things. The scientific attitude, then, may hold such a philosophy, but it may do so only in the face of the same criticism to which
any other philosophy is held. In short, the presumption
that the scientific world-view is uniquely valid is in-
defensible.

(5) Much the same must be said concerning the postulate
that events and facts in the world observed by science are
causally related. Professor Stout insists effectively that
causality is supported by common sense, and as such occupies
an advantageous position. As a practical assumption, more-
over, it cannot be disregarded. Prediction and control which
have become so important in scientific effort, are possible
only on the assumption of causality. Thus far, the principle
goes unchallenged, because it is purely practical in nature
and implications. But, many who insist upon regarding every-
thing scientifically move more or less unconsciously from the
position that causality is a necessary assumption for scientific
investigation, to say that events and facts actually are caus-
ally conditioned. Accordingly, every event must have a cause,
and given the cause, the event must follow. Taken thus as a
metaphysical postulate, David Hume's skeptical argument has
never been successfully met. He insisted that,

"From the mere repetition of any past impression, even to
infinity, there will never arise any new and original ideas,
such as that of necessary connection; and the number of im-
pressions has in this case no more effect than if we con-
fined ourselves to only one." 30 "Thus, not only our reason
fails us in the discovery of the ultimate connexion of causes

Edited, T. Green & T. H. Grose. See also, F. H. Bradley,
Appearance and Reality, p. 56, f.
and effects, but even after experience has informed us of their constant conjunction, 'tis impossible for us to satisfy ourselves by our reason, why we should extend that experience beyond those particular instances, which have fallen under our observation." 31

Professor Taylor calls attention to much the same fact. He says, "Actual experience is certainly not sufficient to show that every event is absolutely determined by its antecedent conditions; at most the success of our scientific hypotheses based upon the assumption of causality only avails to show that events may be inferred from their antecedents with sufficient accuracy to make the causal assumption practically useful." 32

Furthermore, even if it were possible to fasten upon a cause for every event, how could it be proved that the subjects of experience which conceived the situation did not establish the relation which before then did not exist as fundamental to the event. Professor Stout is doubtless correct in arguing that causality is very native to human experience. The concept has become a convenient category under which objects are apprehended and used. But, what is to prevent one from insisting that causality is a property of experiencing subjects which is fastened upon objects in the act of apprehension and for the purpose of control? 33 This question is even more difficult to answer in view of the fact that all instances of causality which ever could be produced to show that events in themselves actually are related to appropriate causes, in the nature of the case are related necessarily with subjects of experience from

31 D. Hume, op. cit., p. 392. See also B. Bavink, Science and God, pp. 54 - 55.
33. Bradley brings up this alternative. op. cit., p. 56.
which they might have derived the property of causal relation. Also, the idea of causality from the first is linked closely with anthropomorphic suggestions derived from the activity of purposive agents. It is highly probable, therefore, that cause as a more universal category is related fundamentally to personal agents and that to see events causally related is a special prerogative of personal subjects because they are themselves personal causes.  

Bradley also calls attention to the fact that

"The cause not only recedes backwards in time, but it attempts laterally to take in more and more of existence. And we are tending to the doctrine that, to find a real cause, we must take the complete state of the world at one moment as this passes into another state also complete."  

There is, however, no reason why the causal assumption should not be made in the interests of certain types of investigation, nor should the so-called causal knowledge of science be regarded as altogether unreliable. The point is that the scientific mind too often passes over from this practical assumption of causality to a metaphysical dogma according to which all aspects of Reality are causally related. Again, there may be persuasive arguments that this actually is the case, but they are not uniquely different from the arguments in favour.

34. Tennant argues this point, op. cit., p. 81.
37. c.f. Parsons, The Universe of Our Experience, p. 19, for a statement of the practical advantages of these assumptions as a working basis for controlling the external world.
of any other metaphysical doctrine. That is, the position stands or falls according to its own effectiveness as a rational account of what men actually experience.

(6) Determinism has usually followed upon the assumption of causation. If events must have causes then the world is such that no spurious or un-caused event is possible. The causes of these apparently novel events may not be obvious. Indeed, they may remain undiscovered almost indefinitely. Still, it must be assumed that once they are really understood, the causal connection will be manifest. Spinoza was, of course, the great exponent of this position, but modern science has further developed it in the light of so-called "scientific Laws."

As was stated in the previous chapter, this conception of the world has a strange attraction among the people of this generation. Therefore, it has made a profound impression upon the modern mind, and in many cases actually has become fundamental to the modern outlook. According to Max Planck,

"The principle of causality must be held to extend even to the higher achievements of the human soul. We must admit that the mind of each one of our greatest geniuses—Aristotle, Kant, Leonardo, Goethe or Beethoven, Dante or Shakespeare—even at the moments of its highest flights of thought or in the most profound inner workings of the soul, was subject to the causal fiat and was an instrument in the hands of an almighty law which governs the world." 39

On the other hand, there are some leaders of science today who no longer hold to the doctrine of determinism, at least not

in the metaphysical form. For example, Eddington claims that, "The result of our analysis of physical phenomena up to the present is that we have nowhere found any evidence of such a deterministic law." He goes on to argue that science uses the term "law" to cover regularities for which there is a high degree of probability. But, that does not mean that events must occur in accordance with it, but only that it is highly probable that they will. L. M. Parsons goes on to show that these "laws" are a kind of "conceptual shorthand which helps us summarize experience. . . ."

Notwithstanding these statements from some leaders of science, the modern scientific attitude is still largely deterministic in its outlook. Indeed, that is one of the underlying reasons for so much uncertainty regarding the things in life that matter. In scientific research it was necessary to assume that events are causally determined and that they must act in accordance with certain "laws." This assumption has been universalized into a metaphysical dogma which asserts that events are thus determined. In short, this "conceptual shorthand," as Parsons put it, has been identified with the Real or actual world. Dr. T. Hywell Hughes points out that this is a form of projection in the wider sense of the term. In any

40. Philosophy, Jan. 1933, Article, Physics and Philosophy, p. 38.
41. The Universe of Our Experience, p. 18, f.
42. New Psychology and Religious Experience, p. 103.

Parsons is of much the same opinion. op. cit., p. 18.

He says, "... we must realize that we are not justified in projecting these shorthand methods into regions of thought where they may not be applicable."
case, the assumption ceases to be methodological and becomes metaphysical. Therefore, it is beyond any proofs which science may give, hence, must be defended on the basis of its coherence and intelligibility as an account of the facts and events of life.

(7) In dealing with certain aspects of the world objectively, that is, from the point of view of a detached and disinterested observer, looking at the world as existing independently of subjective facts, science has produced many gratifying results. In fact, strict scientific procedure limits itself to only those aspects of the world which can be treated in this fashion. Under the influence of this success, however, there has been an inclination, especially on the part of the more enthusiastic adherents to the scientific approach, to go a step further. It is concluded, therefore, that the world is such that it can be understood only in response to that particular kind of investigation. Whether or not this conclusion or belief is a valid one is a debatable question. The point is that for purposes of method it may be legitimate to make such an assumption. Scientific results have doubtless given the assumption ample support as part of a methodology for dealing with certain aspects of the world. But, it is apparent that such results do not necessitate the universal conclusion regarding the nature of the world, namely that the world is of such a kind that it can be understood only by this particular approach to it. Of course, as a categorical judgement or basic assumption about the world, this conclusion may be defended. But as such, it
becomes a philosophical tenet instead of a scientific instrument of research. The modern attitude, then, in so far as it holds that the world can be understood truly only as it is regarded objectively, does so, not on scientific grounds, but by a sally into the domains of philosophy. E. E. McClaverty has summed up the point in this manner,

"Therefore, when any philosopher appeals to the findings of modern physics as giving anything else than empirically ascertained measure-numbers and mathematically ascertained relations between such measure-numbers, he is appealing to a tribunal that has no jurisdiction in the matter, and therefore has no authority to hand down a decision in the case." 43

(8) That interest in simplicity and clarity which science took over from Newton and Descartes has influenced beliefs regarding the nature of the world still further. Very often, therefore, the man of science is led to assume that what is Real is ultimately simple rather than complex, and inversely, what cannot be reduced to simple and clearly defined terms is not a condition of actual fact. In this case, it is clear, that simplicity and clarity of apprehension become criteria of reality.

Of course the task of proving that reality is simple rather than complex and thereby justifying this commonly-used criterion of reality, is indeed difficult. For, after all, the objects of experience which strike people as most real are infinitely complex and their stammering efforts to describe them give evidence of a lack of clearness in apprehension. For example,

friendship is considered very real by most common-sense persons, yet, it is by no means simple. Doubtless most people would have to admit the truth of Descartes' famous argument for the existence of personal self-consciousness, yet, who would say that self-consciousness is either simple or clearly apprehended? At any rate, the belief that reality is ultimately simple cannot be proved by scientific evidence. It is an assumption regarding the nature of the world, and, as such, is part of a world-view. Therefore, as a metaphysical belief, it must resort to metaphysical reasons for its justification.

B. Epistemology - Assumptions concerning the nature of the Knowing Subject.

(1) The success with which scientific principles and methods have been carried out has also led many modern persons to infer that the nature of knowledge and the knowing subject is such that only by approaching the objects of experience in this detached way can they be truly known. In other words, the technical method of arriving at an understanding of certain types of phenomena is generalised into a comprehensive system of epistemology. From the proposition, let the subject deal with conditions of fact in a disinterested manner, it is inferred that the subject is so constituted that only by thus treating those conditions can it truly understand them. But, such an inference is nothing less than a metaphysical
dogma regarding the nature of the knowing subject. The empirical evidence in support of this position is not conclusive by any means. In fact, here science, or at least those scientifically minded persons who hold this position, part company with common sense. The plain man may not be able to explain in detail how he knows certain things. When pressed for an answer he may say simply, "I feel it," yet, in practical life he is constantly relying upon knowledge which is of quite a different sort from that yielded by detached observation. Moreover, the claim of the mystic for knowledge may not be valid, but it cannot be dismissed without some fairly conclusive argument. The point is, that such a doctrine of the knowing subject as that so often taken for granted by modern exponents of the scientific approach, is not self-evident. Quite on the contrary, it can be asserted in this universal fashion only on the basis of its coherency and inclusiveness as an account of knowing subjects as they are found to be actual individual centers of experience.

Sir Arthur Eddington's interesting description of the ideal "observer," is a good illustration of this point. When dealing with some areas of fact an "observer" of this kind is able to furnish the most accurate account of what is happening. But, to assume that all possible knowledge of what confronts people in experience must come through that "single eye," is quite another matter. Hugo Munsterberg.

44. See p. 54.
brings the point of this criticism in a way that makes it quite obvious. He says,

"The consciousness which knows the mechanical universe is thus no longer the individual with his will and his purposes, but merely a passive spectator, a consciousness which is without any interest simply becomes aware of the interplay of energies in this world. Such a personality, of course, is not a real man... The knower of nature is ultimately an impersonal consciousness which has not even any individual place in its system." 45

(2) As far as theory is concerned, science may be content to leave questions of validity to metaphysics. Especially is this true of the positivist position represented by Herbert Dingle. Still, it can hardly be claimed that science as it is understood by the masses of thinking people, has left considerations of validity at one side. On the contrary, efforts of science have been motivated by a desire for dependable knowledge of the world which confronts men in every-day life. The so-called scientific discoveries, verification of hypotheses and critical examination of the grounds of traditional beliefs are simply aspects of the general quest for reliable knowledge. Indeed, that is one of the principal reasons why the scientific viewpoint has been able to attract thinking people from philosophical and theological pursuits. Science offered empirically verified knowledge, as over against the apparently more speculative knowledge of the other disciplines.

See also T. Lafferty, Some Metaphysical Implications of the Pragmatic Theory of Knowledge, Article, Journal of Philosophy, Vol. 29, No. 8, April, 1932.
In answer, therefore, to this need for dependable knowledge, the scientific attitude has arrived at a more or less definite theory of knowledge and criterion of validity. This has been pointed out oftentimes by the critics of science. Furthermore, it is important to see that the theory of knowledge employed by these advocates of science is closely related to that employed by common sense. When the ordinary person of the street is questioned as to the knowledge of a thing he almost invariably resorts to an affirmation of how immediate his impression was. In much the same manner, the scientific mind assumes that immediate knowledge is valid knowledge. Likewise, as the plain man goes about testing the validity of a bit of knowledge by referring it to other unbiased witnesses, so also science verifies assertions of truth by reference to the observations of unprejudiced investigation. Perhaps it would be possible to outline the criteria used by scientifically minded persons for testing the validity of knowledge.

(1) Reliable knowledge is that based upon first-hand observation reported by a detached and disinterested observer, from whose view such elements as desire, aims, feelings, preconceptions and appreciation have been eliminated as far as possible.
Moreover, this observation is of such a kind as may be verifiable to any and all normal persons.

Further, it has been analyzed carefully, described and classified according to its general characteristics, and duly related to the continuity of similar facts and events.

And, as knowledge, thus having been arrived at, it must satisfy the rational and critical faculties of human nature.

For practical purposes, therefore, the very method of science becomes a standard of validity. All knowledge based upon the results ascertained or ascertainable by it, is considered reliable; and, inversely, that which cannot be discovered by, and verified according to the scientific procedure operating within the limits presumed by it, is held under suspicion or at best, in suspended judgment. With regard to this epistemological position of science, Dr. Van Dusen, in his apologetical work, The Plain Man Seeks for God, says,

"The truth supremely prized is that which can be caught in the meshes of this particular net - those facts which admit complete analysis and description, and which submit to classification as instance of a general type. Indeed, so authoritative have these norms become that the plain man tends to accept as 'truth' only findings which satisfy their standards." 47

To be sure, there is no reason why the scientific attitude should not employ such criteria to test the validity of what is presumed to be knowledge. As was pointed out earlier in this chapter, a theory of knowledge is almost inescapable if any assertions are made. Furthermore, within the scope dealt with by the scientific method this theory of knowledge

47. Van Dusen, The Plain Man Seeks for God, p. 61.
has justified itself by practical results, and is sanctioned by common sense. Yet, when it is generalized from a useful assumption into a universally valid system, according to which all possible knowledge must be verified, that is a quite different matter. At least, in this realm of metaphysical postulates, the doctrine holds no unique position. Furthermore, if it is supported principally by common sense and practical results, in any area where the results are not forthcoming, and common sense points toward a more inclusive position, the criteria should be abandoned.

CONCLUSION

What has happened, then, is roughly this. The modern attitude, under the necessity for a world-view has taken over many of the assumptions necessary for scientific inquiry and universalized them into metaphysical postulates and doctrines, thus arriving at a world-view. Moreover, it is often taken for granted that the success with which these assumptions are made within the limited field of scientific investigation, along with their kinship with common sense affords unique and self-evident proof of their validity. Indeed, many modern persons proceed as if the postulates of that world-view were proved beyond any measure of doubt, or more often as if no proof were necessary at all. Accordingly, this world-view becomes the habitual instrument of the modern mind. No light is

considered reliable unless it is emitted through the portal thus established.

If this examination of the modern scientific attitude is accurate, what was spoken of in the introductory section as a dimmed awareness of moral and spiritual reality, is more understandable. The world-view through which modern persons habitually survey the objects of experience and test the validity of their impression of them, by its very structure and nature prevents those persons from attaining to an awareness of moral and spiritual reality in which the original power to evoke certainty has not been vitiated. In other words, the reality of what confronts men in those higher experiences is pre-judged by the very outlook of modern persons to be subjective and unreal. Therefore, the impression made upon them by that order of being is deprived of its convincing power. Indeed, the relation with moral and spiritual reality is rendered so artificial by this habitual view of things, that experience of it is not sufficiently genuine to have any coercive influence over belief.

(1) All of this may be illustrated by the various tenets of the modern scientific world-view. Take first, the doctrine that Reality is what is experienced substantially alike by all normal persons. On the other hand, moral and religious experience is marked by qualities of uniqueness and individuality. In some ways, even those common elements which are present are relatively unimportant. If the reality of the
religious Object is to be tested by the agreement of reports concerning it, then, the reality of God is open to serious question. Therefore, if this view of Reality is the only valid one, then moral and spiritual experience does not have what is Real for its object, but something created by individual imagination.

(2) Also, the doctrine that what is Real is unaffected by observation and experiment denies the deeper promptings of the moral and religious consciousness. Indeed, the very hope and challenge of the higher life is derived from the belief that what is Real responds to and actually initiates experience. Modern persons, therefore, entertaining this view of Reality, sensing that what confronts them in spiritual experience actually is affected by their relation to it, conclude that it cannot be Real.

(3) The same result follows from the doctrine that Reality is not affected by analysis. With this conviction, modern persons proceed to examine what confronts them in ethical and religious life. But, like the experimenter who dissects an animal only to find that in the doing a strange fact called "life" has vanished, modern persons find that the very thing which seems to make the moral and religious object what it is in experience has been lost in the process. Hence, only one conclusion is possible from that premise: namely, that what seems

49. Understood as that capacity of human nature to have moral and religious experience.
so real in those intense and satisfying moments of higher experience, is but a figment of imagination which, under strict analysis, fades from sight.

(4) Further, if Reality is identified with what is "objective" in the sense of being independent of subjects of experience, then what men have experienced in their deepest moments of moral and spiritual life has been essentially unreal. At first sight this may not seem so true in the ethical as it is in religious life. For, moral laws have impressed men as standing in their own right, binding our conduct regardless of whether or not they are heeded, whereas in religion, a relation between deity and the subject has been primary. Nevertheless, moral laws have no meaning apart from some relation to human nature and conduct. Much of their apparent independence is not independence of the fact of subjects, but independence of the recognition of a particular subject or group of subjects. Consequently, when men have realized that the objects of these higher experiences are related so fundamentally to themselves, and, at the same time believed that only what is independent of subjects is actually Real, they have concluded that what they were aware of in those experiences was not Real at all.

(5) The postulates of causality and determinism present much the same problem to the modern mind, but, because they have been treated at greater length than the others just mentioned, perhaps just a suggestion or two will suffice to show
how such a view of what is Real contrives to dim awareness of moral and spiritual reality by pre-judging the ontological status of the objects to which it refers. Freedom of choice, is of course, as fundamental to the moral life as divine operation or intervention is to the religious life. If neither man nor God can do anything, but must submit themselves to a pre-determined order of events, then both morality and religion are delusion. In short, the Real world conceived as causally determined and the world which men experience in their ethical and spiritual life, are contradictory. If then, determinism is an essential characteristic of Reality, the world in which men live their moral and religious life is essentially unreal.

(6) In like manner, the conviction that Reality is simple has lost ground in recent years. Still, because it lies so near the assumptions of common sense, the modern mind continues to be influenced greatly by it. At any rate, if it is assumed that what is real is fundamentally simple, moral and spiritual objects are surely expelled from ontological standing; for it requires no particular insight into those higher experiences to see that what men are confronted by is not simple, but manifold and complex. The deeply religious man scarcely ever feels that he has touched more than merely the "hem of His garment."

50. As was suggested earlier, the doctrine of determinism is rapidly losing its influence in scientific circles. Yet, the popular mind is still dominated by it, to a large extent.
He lives in almost constant bewilderment in the presence of God's infinite capacity to keep every thing intrusted unto Him. Likewise, the moral man is confronted by complicated obligations which render the conviction that ethical reality is simple quite impossible. If then, only that which is simple can be Real, then the conclusion must follow that in those higher experiences men are not confronted by what is Real.

The theory of knowledge employed by modern persons affords another example of how the awareness of spiritual things has been dimmed by the world-view which those persons have been inclined to accept. According to this doctrine Reality can be truly known only in so far as it is accurately observed in the detached and disinterested manner employed in special scientific research. And inversely, any judgment which is not based upon knowledge thus arrived at by detached observation is not valid. In short, the "observer" described by Eddington is the reliable "knower." In this case man becomes the "spectator," and only as such can he obtain valid knowledge. All that purports to be true must vindicate itself according to the criteria previously outlined. 51 To use Van Dusen's figure, it must pass through the meshes of this particular net.

When, however, this theory of knowledge is applied to moral and religious matters, very little that is of vital

51. Used as an alternative expression for "moral and spiritual reality," for literary purposes.
52. See p. 99f. of present paper.
importance can be regarded as true. In the first place, truths which have played the most important part in religious life simply cannot be demonstrated in this manner. Nor are they based upon observations in any strict sense of the term. The religious man as also the moral man is not a "spectator" but a "participant". His convictions are forged out of activity in response to the demands of moral and spiritual Reality upon him. To stand out and observe as a spectator the whole thing can appear but little more than a struggle. It is only when he is in the struggle that one can realize that it is a "vale for soul-making."

In short, there are many profound areas of human experience in which "to know" means much more than "to observe." A person might observe his next door neighbour from various angles, yet, on that basis he could scarcely claim to know his neighbour. Nor is this distinction merely a matter of social convention; for, to know an individual character involves a relationship with him which is by no means exhausted by the role of a "spectator". Knowledge of individual persons follows after an intimate relationship in which each has given of himself to the other. Comradeship in some great crisis or enterprise often deepens this relationship until genuine knowledge of character results.

The world-view or philosophy which characterizes the modern scientific attitude, however occupies no unique place

53. Or, more strictly, judgments which have been asserted as true.
among metaphysical theories. Nor can it be proved conclusively as valid above other systems by empirical evidence. In the very nature of the case, these metaphysical dogmas are too fundamental for scientific verification. They are, as a matter of fact, the basis upon which alone, such verification is possible. Once the basis is taken for granted the procedure is quite dependable, but any justification of the basis can not be made upon the assumption of it. For example, in Euclidian Geometry an answer may be reached by careful mathematical procedure and verified by an elaborate system of equations, axioms and formulae. This answer may be correct unquestionably, but surely its correctness could not be used to establish the truth of Euclidian Geometry over say, a four dimensional scheme. Any amount of demonstration, however correct on the assumption, let a x b x c = the dimensions of any object, would not prove that a x b x c actually did represent all possible dimensions. Similarly, any justification of the scientific world-view as described in the previous chapter cannot be scientifically established.

Scientists are often inclined to dismiss the problems of metaphysics on the grounds that one system is as good as another. At least, there is no sufficient reason for preferring one to

54. Descartes gives a good example in point. He says, "For example I saw very well that if we suppose a triangle to be given, the three angles must certainly be equal to two right angles; but for all that I saw no reason to be assured that there was any such triangle in existence. . . ." p.103 - 104. Descartes' Philosophical Works, Haldane and Ross.
another excepting individual tendencies and purposes. But, obviously such a condemnation of metaphysics falls with equal force upon the world-view assumed by science. Consequently, if the religionists and moralists choose to accept a different world-view, the judgment that moral and spiritual experience has no valid object in Reality implied in the world-view of science need not be taken seriously. But, regardless of theoretical claims, men are not content with such an agnostic position. In practical life, at least, conflicting world-views cannot be held alongside each other without any attempt to dissolve the contradiction between them. Therefore, the bold assertions on ultimate questions so frequent in scientific writings are understandable even though they are perhaps not wholly justifiable. Further, the very assertion that one metaphysic is as good as another implies that the metaphysical system upon the basis of which the assertion is made is more valid than the view of things from which a contradictory assertion might be made. Consequently, such an assertion implies its own denial. Moreover, if one world-view is as good as another, all distinctions between truth and falsity are ultimately meaningless.

(1) But, granted that world-views are at least, more valid or less valid, how can a preference be justified? In this regard, there are at least three criteria which are used, sometimes
consciously but more often without awareness. First, is the principle of practicality. If a world-view produces results it is considered justifiable. But, to be sure, this is not the final test. At any rate, pragmatism has not been able to persuade thinkers to dispense with all other principles of judgment. For one thing, the question, "practical for what?", renders the principle difficult in application. None the less, if a world-view produces satisfactory results, there is considerable reason to prefer it over one that does not.

(2) Secondly, but not less important, is the suggestion from common sense. If a view of things contradicts the judgment of the plain man, it is not necessarily invalid, but the weight of probability is against it. Indeed, there seems to be an increasing tendency for thinkers to refer their theories to the man of the street for verification. At least, the assumptions which have the approval of common sense are recognized to occupy a defensive position. It remains for opposing views to prove their case.

(3) In the third place, metaphysics has always found the principle of rationality immensely useful. If a theory of life makes its events and facts orderly and reasonable it is considered valid. Non-contradiction and coherence play a large part in the use of this principle. Professor A. E. Taylor sets forth this criterion in the second chapter of his work on, *Elements of Metaphysics*. He says,
"Freedom from contradiction is a characteristic which belongs to everything that is real and ultimately to nothing else, and we may therefore use it as our test or criterion of reality. For, as we have seen in the last chapter, it is precisely our inability, without doing violence to the fundamental structure of our intellect, to accept the self-contradictory as real which first leads to the drawing of a distinction between the real and the merely apparent; on the other hand, where we find no contradiction in thought or experience, we have no valid ground for doubting that the contents of our experience and thinking are truly real." 55

When the advocates of the scientific attitude are confronted by ultimate questions as to the validity of their assumptions regarding the nature of things, they immediately resort to the principle of practicality to justify their position. Accordingly, they proceed to point out how these assumptions have led to fuller understanding and control of the events and facts of life. Indeed, the cumulative force of this success is overwhelming and cannot be gainsaid. For dealing with certain types of objects this success does justify the method of approach. But, when the scope of this method is universalized into a comprehensive world-view and definition of Reality, the admitted success in one area of fact is not enough to justify it in areas where the success is not so apparent. If the principle of practicality proves anything it is simply, that the viewpoint is valid in the sphere in which it is successful. But, as was pointed out in the introductory section, the scientific approach and viewpoint when applied in the spheres of ethics and religion have produced a situation in which the awareness of ethical and spiritual reality upon

which the higher life of man is nourished, has been impaired. The certainty necessary for satisfactory moral and religious experience is dissolved by this kind of a procedure. Higher values which serve to guide human effort and interest, and give them meaning and dignity are strangely dissolved. Confusion, pessimism, and shallow aimlessness result. Thus, while it might be argued that the world-view entertained by the scientific attitude is valid, and should be applied in spite of the damaging effects upon man's higher life, the principle of practicality scarcely could be cited in favour of this position.

In case then the principle of practicality is applied to the scientific viewpoint, the validity of it over certain specific sections of fact is established, but, its inadequacy for wider application becomes also apparent. The principle, therefore, offers no justification for universalizing this viewpoint into a coherent world-view and definition of what is ultimately Real. Simply because it is advantageous to assume that an "observer" such as Eddington described can know certain objects most accurately affords no valid reason for the general assumption that all objects are most accurately known by a similar "observer." It may be that a certain type

56. See Krutch, The Modern Temper, for an able and thorough-going treatment of the damaging effects of the scientific attitude upon the higher life of man. This treatment is especially significant because the author holds to the modern view in spite of its damage to moral and spiritual life.
57. See p. 54.
of telescope is most efficient in studying the far-away stars, but that does not mean that anything which cannot be seen through the instrument, ipso facto, does not exist.

Attention has been called repeatedly to the affinity between science and common sense. Moreover, the principle was set down as a means of determining the relative validity of conflicting world-views. Admittedly, the modern scientific attitude has gained much of its popularity with groups of thinking persons because of this relation to common sense. Most persons simply refuse to be argued into a position which contradicts their common sense. At least, such a position should fail to evoke any considerable degree of conviction. Yet, the strange thing about it is why the modern scientific attitude so closely allied with common sense should accept the dictates of common sense on one or more matters and reject it on others without realizing that a very conclusive reason is necessary for doing so. For example, this modern attitude accepts common sense realism regarding physical objects but rejects the same common sense impulse to believe in the reality of moral and spiritual objects. Surely the common man confronted by such a forceful moral imperative that he would sacrifice almost anything in obedience to it, believes that he is confronted by something Real. Similarly, common sense has never suggested that the object of religious experience is a fictitious character of subjective creation. Of course, no attempt is being made to set up common sense alone as the
judge of metaphysical beliefs. At the same time it cannot be disregarded altogether. Furthermore, if the scientific viewpoint is justified in insisting that common sense assumptions are valid until sufficient reason has been produced to declare them otherwise, surely, the same contention can be made in the moral and religious spheres. In any case, if there is a preponderance of opinion in favour of common sense assumptions, any disavowal of them should not be made without exceptionally good reasons. Therefore, a world-view which at the outset assumes that the individual experiences of religion, morals and aesthetics refer to no objective reality must be proven overwhelmingly. Likewise, if it is assumed that all purpose in the life of the world is subjective and unreal, common sense must be refuted, for the idea of purpose seems to be as deeply implanted in human consciousness as that of cause. In fact the two go hand in hand as common sense beliefs. Precisely the same thing is true of the assumptions regarding the knowing subject. To say then, "men can know only by a detached observation of the matter at hand," is to refute the assumption of common sense.

Then the criterion of "non-contradiction" is applied to the world-view of science what is the result? Does the metaphysical system which incorporates these various postulates concerning Reality and the knowing subject make the events and facts of life orderly? In one sense, the answer must be affirmative; for, every fact and event which
contradicts the system is, ipso facto, regarded as subjective hence unreal. Moral imperatives and freedom, divine providence and experience of grace, purposive action toward ultimate aims and the like flatly contradict the doctrine of Reality which lies behind the modern scientific attitude. But, by regarding these as fiction rather than fact, the coherency of the system is not in jeopardy.

However, from both the practical and common sense points of view upon which the advocates of science rely, such a method of attaining coherency is scarcely justifiable. On the contrary, from this practical and common sense point of view, even though purposive action, freedom, and the like may be illusion, they are of first importance. In fact, for practical living these so-called illusions or fictions make all the difference there is. Further, it seems necessary to proceed as if they were real or submit to impossible confusion. Therefore, the plain man as well as the practical man would surely remonstrate against a view of Reality which entailed the confusing doctrine that what seems to be most real in the conduct of life is not real. Hence, the coherency of this scientific world-view is by no means satisfactory. Whatever else it may do, it does not make the facts and experiences of human life intelligible. Nor does it give a consistent and satisfactory account of these facts. On the other hand, there are reasons for agreeing with Eucken when he contends that the
requisites of man's moral and spiritual self-preservation afford an index to the nature of Reality.\footnote{Christianity and the New Idealism, (London,1908) p.146.} At least, no one should be asked to abandon beliefs which are necessary for man's moral and spiritual self-preservation excepting upon absolutely conclusive evidence.\footnote{C.F. Hughes, New Psychology and Religious Experience, p.100,\textsuperscript{a}.} Furthermore, it is highly probable that a system which involves moral self-destruction and spiritual decay has not been consistent with all the important facts of life. At least, until there is such an overwhelming reason to entertain such a view that a failure to recognize it would involve a blasting of men's mental integrity, there is some justification for an alternative view which would make human life more than meaningless confusion. As L. W. Parsons puts it, "In the best interests of both ourselves and those around us, it is necessary that our view of the universe should be of such a nature that we retain with vigour the conception that 'life is real, life is earnest'."\footnote{The Universe of Our Experience, p.10.} 

59. C.F. Hughes, New Psychology and Religious Experience, p.100,\textsuperscript{a}.  
60. The Universe of Our Experience, p.10.
PART TWO

THE NATURE AND CONDITIONS OF
RELIGIOUS CERTAINTY
CHAPTER VI
THE NATURE OF CERTAINTY

DEFINITION

Thus far it has been argued that the world-view employed by modern persons has resulted in a condition of moral and religious uncertainty. Further, an attempt was made to show that this world-view has been arrived at largely by a process of generalizing the postulates of scientific procedure into metaphysical dogmas or doctrines of Reality. Some illustrations were cited to show how the world-view thus derived has led to uncertainty in morals and religion, but a further application of this thesis must await an examination of what certainty is in its broader aspects, what distinguishes religious certainty from certainty in other spheres, and what are the conditions necessary for religious certainty. The present chapter then will be devoted to an examination of what certainty is in its broader aspects.

(1) Tennant's Definition. In his Ternier Lectures on the "Philosophy of the Sciences," Dr. F. R. Tennant develops a

theory of cognition in the light of genetic psychology in the
interest of relating knowledge arrived at by the various
branches of science. His treatment of the subject is especially
suggestive from the point of view of arriving at a suitable
statement of what certainty is in its broader aspects. At the
outset he distinguishes between certainty and certitude in what
he regards as the conventional manner. "Certitude," he says,
denotes "the state of an individual's mind that is known as con-
vincedness and is announced when one says 'I am certain that...,'
and may possibly then proceed to utter a false proposition;" 2
whereas certainty indicates "the objective character ascribed
to propositions independently of whether this or that person
believes them, as is expressed by the words 'it is certain
that...". 3 In the event of simple and immediate sense per-
ception of conditions in the external world such as perceiving
blue, those conditions by their overwhelming objectivity and
often 'brutal impact' compel such a high degree of certitude
or convincedness that no element of doubt can remain. Here
certitude and certainty become "concomitant." 4 The two spheres,
that which includes the subject and its state of convincedness
and that which constitutes 'other than subject' move into a

3. Ibid, p. 69. Note.--This is substantially the same as the
definition given by Henry Barker in his article, Certainty,
Hastings Encyclopedia of Religion and Ethics, and as Dr.
Tennant suggests, it may be regarded as the conventional
definition.
4. This is the word he uses, Ibid, p. 70.
sort of total eclipse, in simple and immediate sense perception.

Similarly, in dealing with formal or ideal entities such as those of mathematics or formal logic, relations between these entities are "read off" with much the same immediacy, so that belief has no option. Even though the content of perception is vastly different from the perception of actuality, the result with respect to belief is much the same. In the perception of actual fact, certainty is demanded by the particular and concrete character of the object, whereas in reading off ideal relations, certainty is compelled by the precise nature of universal forms. The certain knowledge derived from sense-perception, therefore, is individual and momentary. That is, it has neither universality or thought-connexion, but is present only in that moment when an object is thrust upon an individual subject. After that, subjective conditions such as memory, constructive imagination and preconception qualify the impression in such a way that it can no longer be characterized by certainty. For, whenever the content of memory has ceased to be sustained by the immediate impression, confusion between the object which initiated that impression and imagined objects or constructions is likely to occur and there is no principle by which this confusion may be determined and set right. "There is," he says, "brute matter of momentary fact

5. Tennant, op. cit., p. 73.
6. Ibid pp. 73 - 74.
for an individual subject, with no thought-connexion and no universality." It is, of course, not communicable because it is completely a matter of the individual subject. Not until these impressions have been conceptualized or interpreted into propositional terms by the subject can their content become common knowledge such as that dealt with by the sciences. For this reason Dr. Tennant insists that "the whole of the so-called knowledge we use in the conduct of life," or the knowledge classified by the various sciences, is not characterized by the certainty of immediate sense-experience.

On the other hand when the relations between ideal entities such as those of mathematics are "read off" with immediacy the content of knowledge thus derived is universal, hence communicable, but it contains no matter of fact. That is, it is not knowledge of the actual but of the ideal or abstract. So Dr. Tennant concludes that knowledge of the actual world by which men live is characterized by neither the certainty of mathematics or that of self-evident sense. With respect to the actual world all knowledge is "but probable belief." From the outset it involves what he calls an "alogical trust which is justified only by its results." Further, the principles by which the actual world is made amenable to scientific investigation, such as causation and conformity, are not given in immediate sense

7. Tennant, op. cit., p. 73.
8. Ibid pp. 72 - 73.
9. Ibid pp. 73 - 74.
perception nor read off with formal certainty but are essentially "alogical and psychological." Accordingly, knowledge for the conduct of life or presumptive knowledge, as he terms it, is characterized only by certitude and is correlated with certainty only in so far as memory of past impressions is sufficiently immediate to render nil the possibility of error.

(2) Criticism of Tennant's Definition. From the point of view of understanding the nature of certainty there are three objections which should be raised against Dr. Tennant's view. The first centres in the way he distinguishes between certitude and certainty on the basis of subjectivity and objectivity. The second pertains to the sceptical implications of his theory of cognition. And the third objection arises from the extreme empiricism from which he derives all knowledge of the actual world.

(4) With regard to the first point Tennant speaks of certainty as describing the objective character of propositions, while certitude pertains merely to the individual's state of mind. Certitude, that is, indicates a subjective condition, whereas certainty refers to an objective condition. In the first place, however, the term objective as contrasted with the term subjective is used with many somewhat different meanings. In some cases the thought of externality or concreteness is denoted. At other times, the term is used to describe a thing which is more or less independent of inner states of feeling.
and striving. Similarly, objective is sometimes used either to modify or indicate what is Real as over against what is only imagined or seems to be. In other instances an objective situation is regarded as one which stands in its own right or as the traditional philosophers called it, "the thing in itself." Here also, the idea of independence from inner states and appearances is emphasized, but what is objective in this sense is not what confronts the subject in experience. Experience, on the other hand pertains to the appearances or modifications of "the thing in itself." Thus, what is objective is that which underlies the various types of experienced phenomena. In other connexions, the term is used to denote what is actual as contrasted with ideas or ideal entities which are either created by or in someway sustained in mental states. Still further, the effort to treat everything objectively has led psychologists to consider a thing objective which has been objectified by the subject. Thus, a dream or hallucination may be objectified in such a way that some of its aspects at least may be treated in much the same way as the scientist would treat a portion of material. While it may be possible to argue that dreams and the like do represent some reality, it is clear that what is objectified cannot be regarded as objective condition of fact in the same sense that a stone, saw, is thus regarded. At least in thus using the term the idea of concreteness and independence from subjective states no longer holds. On the contrary, the whole process of objectification is closely linked up with
imagination.

Also an objective situation often denotes universality as contrasted with what is individual or particular. Here again the thought of independence from inner states is present but that of concreteness or actuality is not. 'Man universal' is regardless of being perceived by any particular subject. Still, 'man universal' has no actual existence excepting in so far as he denotes universalized qualities or characteristics of 'particular man.' Professor Dingle gives quite a different meaning to the term objective. According to his view, because a thing is experienced in practically the same way by all normal persons, it may be regarded as existing in the "objective world." Here objectivity is simply assumed in order to account for the similarity of experiences. The idea of concreteness is almost completely lacking while universality is stressed. "While this "objective world" is independent of individual experience, it is directly dependent upon common experience, which, in so far as it is experience at all, is surely a condition of individual subjects. In brief, according to this definition, what may be regarded as objective is ultimately dependent upon subjective states, even though they are taken collectively.

10. That is, 'man universal' does not become known through sense-experience, excepting in so far as he is experienced as 'individual man.'
In view of these widely varied meanings attributed to the terms objective and subjective, to use them in the definition of certainty is very likely to be misleading unless an attempt is made to state more precisely what is meant by them in this connexion. Indeed, it is just possible that these terms are as difficult to define as certainty and certitude. Even so, there seems to be little hope of understanding the nature of certainty apart from the distinctions usually referred to by the terms objective and subjective. Further, there appears to be a core-meaning running through the manifold usages of these terms. Whatever else is meant by the term subjective, it usually refers to the subject or centre of experience as contrasted with object or 'other than subject.' The idea of the object being independent of subject is probably derived from this 'other than' relation. Likewise, universality as contrasted with individuality or particularity is suggested by independence from particular and individualizing subjects. Concreteness and reality as contrasted with feeling and imaginal creations also suggest attributes of what is 'other than' subject. To be sure, these modifications and inferences are important. None the less, apart from them, in this connexion at least, it is possible to say broadly that subjective and subjectivity refer to conditions or facts of the subject as contrasted with objective and objectivity which refer to 'other than subject.' Consequently, for present purposes it is advantageous to use the terms in this way without any designation of reality or unreality, concreteness or abstractness.
With this definition of terms the certainty of immediate sense-perception upon which Dr. Tennant builds his view of knowing is compelled by an objective condition. The subject is certain of something 'other' with which it is confronted. But the question arises: is the 'other' objective because it compels certainty in the subject, or is it objective merely because it is 'other than' subject? If mere 'otherness' compelled certainty then it would be difficult to see how there could be uncertainty or doubt. On the other hand if a thing is objective because it compels certainty in the experiencing subject then in defining certainty the term objective is quite useless because it is itself defined in terms of certainty. That is like saying blue is what strikes the eye in such a way as to suggest 'blueness,' and what strikes the eye as 'blueness' is blue.

There is still a third possibility, namely, that what is 'other than' subject compels belief because of its nature and its relation to the subject. Yet certainty, while conditioned by the nature of object and the relation between subject and object is nevertheless a subjective fact because it is a condition of subject rather than a condition of object. The fact that certainty is momentary and incommunicable reveals this. If certainty were a matter of objects it would persist with objects and could be described as an object hence it would be communicable. Strictly speaking "it." could not be certain excepting to a subject. In this sense all certainty is
subjective because it is a condition of subjects. Yet, because the subject is certain of something, certainty could not be completely subjective. Further, when the objective condition of certainty attains a sufficient degree of force and immediacy the person may say "it is certain." This, however, is an inference from "I am certain." In syllogistic form it might appear thus:

All men are affected by objective situations in the same way. This situation affects me in such a way that I am perfectly certain. Therefore, all men will be affected by this situation in such a way as to make them certain.

If then certainty is a condition of the subject evoked by the nature of and the relation to what confronts it, what is the difference between certainty and certitude? According to Dr. Tennant's definition certainty is a state of mind or belief which, because of the overwhelming quality and immediacy of what confronts it, has no option, whereas certitude seems to be a similar state of mind "in vacuo," or suspended from any reference to an objective condition. But surely he does not mean it in this way. However highly subjective certitude may be it is certitude of 'some thing.' That is, there will always be some kind of an objective reference. Edwards puts this point more generally when he says,

"But it is of supreme importance to bear in mind that experience is not merely subjective, but also implies an objective reference... In all experience there is an objective element, something given, something presented to us, coming from some source which has at least all the appearances of being originally independent of us, something not ourselves which we do not create but are forced to
take account of." Eucken argues the point from a slightly different angle. He says,

"The life of a spiritual being does not begin and end with its subjective condition; it includes the objective also, and must get into a relationship with the objective: it is driven to insist that the rift between subjective and objective shall be overcome, and feels confinement to the merely subjective conditions as an intolerable restriction." 12

At any rate, this is the axiom of realism, and has the support of common sense. Moreover, from the way Tennant insists that all imaginal entities are ultimately derived from what is presented to the subject in sense-experience, it seems that he should agree to this position. In fact he says so in a categorical statement with which he begins to discuss the objectivity of religious experience. These are his words, "Every experience, whether cognitive or affective, is one in which a subject is necessarily confronted with an object." 14

If this position stands, it follows that certitude cannot be simply a state of mind with no connexion or relation to an objective condition. Further, if certitude is of some thing then the state of convincedness is in some way and to some extent related to and evoked by that objective situation. At the same time the distinction which Dr. Tennant makes between certainty and certitude is not altogether unfounded. Doubtless

11. W. Edwards, Christianity and Philosophy, p. 34.
13. Tennant, Soul and Its Faculties, p. 63. Philosophical Theology
what confronts subjects in various types of experience does not affect them in the same way. In some cases the object seems to be of such a nature and stand in such a relation to the subject that belief has no option, while in other situations the object appears to be less compelling with respect to belief either because of its own nature or because of the remoteness of it from the subject. Beliefs therefore, which are thus compelled are characterized by certainty whereas beliefs which are not are characterized by certitude. Probably this is the distinction which Dr. Tennant seeks to make. At the same time, if both certainty and certitude are states of convincedness which are connected with and have reference to some objective situation and they depend for their intensity upon the nature of the object and the relation between subject and object it would seem that the distinction between them is more a matter of degree than of absolute difference. Furthermore, the immediacy and overwhelming nature of objective situations depends not only upon the nature of the object but also upon the subject itself. Such facts as selective interest and capacity of subject are by no means negligible. For example, some delicate shade of blue may impress the trained artistic eye in such a way that belief is conclusive while the layman may not be at all sure whether it is blue or green.

If this is the case it would seem that certainty is really a matter of degree depending upon three factors: (1) the nature of the object with which the subject is related, (2) the
immediacy of that relation, and (3) the capacity of the subject to perceive distinctly. Especially is this a better way of putting the matter if Dr. Tennant is right in emphasizing the fact that in actual human life there is no such thing as a pure perception. In his larger work on, The Soul and Its Faculties, he carries this point to some length. 15 "Again, psychology must deny," he says, "that philosophy can put its finger on any bit of actual experience, and say that there we are in touch with reality, in the sense of objectivity pure and subjectively undefiled. . . there is nothing perceptual that is not subjectively fused, and tinged with the incipiently or implicitly conceptual. The perceptually real contains more than temporally present datum; and the objective datum, in being received, is overlaid with subjective contribution - retention, integration, etc." 16

As he says, what is objective is "humanised" in the act of being attended to by subject. In short, subjective activity goes beyond the datum of "bare impression or simultaneous reception of several already distinct impressions." 17 The subject is impressed interpretatively. None the less, while there is no actual pure "sensum" as he calls it, and no hard and fast limits between sensum and partially interpreted sense datum or "sensatio," they are distinguishable at ideal limits. That is, an immediate sense impression is not really possible apart from subjective conditionings and qualifications, yet in psychological thinking it is convenient to regard pure sensum as a sort of

15. This point is emphasized in the Tanner Lectures but developed more fully from the point of view of psychology in the larger work.
17. Ibid p. 44.
ideal or pole of actual knowledge distinguishable in thought
but in actuality inseparable from subjective facts.

Other students of the psychology of cognition have called
attention to the same point. For example, Henry O. Taylor says,
"there can never be any sheer and simple self-limited observation. For
the first impression, the initial movement of apprehension
passes on at once into further processes of interpretation,
coordination, construction." Or, in the words of Whitehead,
"sense perception, as conceived in its ideal purity never enters
into experience. It is always accompanied by so-called inter-
pretation." 19

This same position is taken by C. E. M. Joad even though
his general position is realistic. He says,
"In this sense it is true that all perception involves an
element of judgment: there is in fact no such thing as a
pure awareness of the given. In all perception we go beyond
what we actually perceive, and it is in this activity of going
out beyond it that we provide an opportunity for the
operation of what is called judgment." 20

In theory, therefore, an occasion might arise when an
objective situation of fact might effect a complete correla-
tion between certainty and certitude. In other words, an im-
pression might be so free from subjective elements that
there is no possibility of error. Yet, in actual life, this
complete correlation is quite impossible. Even in the case
of formal certainty concerning the relations between posited

18. Fact. The Romance of the Mind, p. 84.
entities, certainty and certitude would never be quite con­comitant. For, while the subject would be far less likely to fuse these relations with anything of itself, none the less, a man could never deal with such entities "in vacuo," that is, apart from some element of desire and purpose. Also, there is always the possibility that such entities will suggest something to the subject which is easily confused with the actual nature of the entity. For example, the relation between forces pulling at 90° angles may be determined according to formulae and the result read off with immediacy. Still, "force", "pulling" and "angles" may suggest a number of things to a subject which conceivably might enter into the "read off" result. In short, even in formal certainty, there is a subject to be con­ sidered and subjects have a subtle way of qualifying immediate impressions however distinct the object of the impressions may be.

At the same time, both the likelihood of subjective qual­ification and the degree to which it is carried in formal con­siderations is admittedly less than in the considerations of actual fact. Therefore, it would seem that according to Dr. Tennant's definition of certainty and his view of perception, the certainty of immediate sense-impression and that of relations between ideal entities "read off" with immediacy, is not equally pure, because in formal certainty the correlation is much more complete owing to the distinct emptiness of the enti­ties attended. In this case, perhaps the term 'certainty' should
be reserved for the so-called pure sciences or for abstract philosophy. In any case, however slight the subjective qualification may be in a given impression, if it is always present certainty is after all a matter of degree. And inversely, however great the subjective factors may be in an experience some connexion with something 'other than subject' is necessarily present even though it is remote. Consequently, the terms certitude and certainty used in the conventional way simply refer to degrees in which the subject qualifies that which confronts it. If this is the case then, it would seem much better to use simply the term certainty and avoid the misleading suggestions involved in the conventional definition.

Perhaps it would be better then to say that certainty is a state of the individual's mind known as convincedness which is evoked by a more or less immediate impression from something other than subject and that the degree of certainty is roughly in proportion to the immediacy and overwhelming nature of the impression plus the capacity of the subject to receive such impressions without confusing their respective objects. In a sense, therefore, certainty is always subjective because it is a condition of mind. Yet, it is a condition of mind with respect to something other than mind and does not exist apart from this objective content. Consequently the cognitive and objective elements are constantly present in certainty. But because certainty is a state of an individual's mind, it is
a way of feeling. This is so regardless of how compelling or 'brutal' the impact of the objective situation upon the subject may be. Even in the most conclusive cases of formal certainty where relations are read off with almost complete immediacy, certainty is a way of feeling. Even so, however closely or remotely this feeling is connected with a condition other than subject, it is connected. Consequently the cognitive element is never completely divorced from the feeling of certainty. However much the subject qualifies what is presented in sense-experience 'something' is qualified. In short, the cognitive core is always present.

(B) The sceptical implications of Tennant's position are quite manifest. In fact, there are striking similarities between his view of cognition and that of David Hume. In a sense, however, Tennant goes further than Hume when he asserts that a return to the self-evidence of primary perception is a return to data already qualified by the conditions of subject. In this case, empiricism is only relative. Yet, it is relative to the impressions of pure sense, which, while they are always qualified by the subject, none the less possess a core which is polar to all knowledge. Furthermore, Tennant's insistence that knowledge for the conduct of life involves an alogical trust or adventure of faith, saves him from the extremes to which empiricism of that severe type has led so many thinkers in the past.
This scepticism perhaps has its roots in the assumption that subjective activity such as memory and interpretation actually corrupts the pure knowledge that is given in immediate and simple perception. Doubtless error is introduced by the subject's activity in relation to the data of sense. Surely any theory of knowledge which fails to recognize this, i.e. extreme realism, is ipso facto inadequate. Yet, error is intelligible only in relation to that which is arrived at by an active subject operating upon sense data. It is only in so far as an impression is qualified by subject that it can be referred to as true or false. To speak of an impression or impact as erroneous is unintelligible unless that impression or impact has been at least partially interpreted by the subject. It is the datum of knowledge, or the 'raw stuff' out of which understanding of the external world is wrought. Naturally all element of doubt is absent in that datum. It is possible to doubt a representation or interpretation of sense-experience, but not possible to doubt experience as such. Bosanquet puts the matter in this way:

"What we ought to mean is that sensation is not true but for the same reason for which it is not true, it is also not false; for it is not a judgment at all, and nothing but a judgment can be true or false. ... And, granted that judgment affected by it may intelligibly be 'nearer to sense' it still remains quite untrue that judgments dealing with determinant concrete objects of our perceptual world are necessarily judgments thus near to sense." 21

Truly it is within the scope of the subject's activity that error arises, but it is equally true that what knowledge there is also arises within that scope. To say then that the activity of the knowing subject introduces error means simply that error exists only within the sphere of knowing. It is possible to rule out error in the way suggested by Dr. Tennant, viz., by negating all the subjective factors, but in so doing not only error is excluded but knowledge is excluded also. Moreover, what impresses the subject in immediate experience is not an entire object such as a table, but a part of two legs, perhaps, and a top. The subject takes these fragmentary impressions of the object and fills in the absent parts in such a way as to attain some general knowledge of the complete table. It is true that error arises in the process by which fragmentary impressions become conscious knowledge, but, to use the words of Oman, "Unless we accept knowing as the way to knowledge, there seems to be no possible beginning..." In other words it seems necessary to accept the possibility or even the probability of error in order to attain some knowledge. If what might be called the universal attitude of the subject in simple perception does not yield knowledge; but simply the data of knowledge, then it is obviously incorrect to speak as though the knowledge process introduced error into perfect or undefiled knowledge derived from immediate sense-evidence.

This assumption that the subject introduces error into the perfect knowledge of immediate sense has its roots possibly in the belief that the knowing relation is an artificial one in the sense that it is added or more or less arbitrarily or incidentally to the other relations in which objects stand. This belief is indeed common among modern thinkers. As it appears in modern philosophy perhaps it is a "hang-over" from the classical substance philosophy. At any rate, what a priori reason is there to assume that this relation which becomes apparent in knowing is not fundamental to the nature of things? In other words, why should it be assumed that this cognitive relation is not just one of the permanent relations in which objects qua objects stand? For one thing, there is the fact that all objects about which there is or conceivably could be any knowledge actually stand in a cognitive relation to some subject or subjects. Secondly, the intimate relation between mind and body, however that relation may be explained or interpreted, suggests that such a relation is fundamental between objects and subjects. And thirdly, to assume a fundamental cognitive relation of this kind offers an escape from a type of scepticism which is practically impossible as well as repugnant to common sense. Therefore, it would seem justifiable to assume that knowing, instead of introducing foreign relations to the known object, is really possible because the cognitive relation is fundamental to the nature of things.
Especially after David Hume formulated the empiricist position in its radical form both the apologists of religion and the exponents of idealistic philosophy came to regard radical empiricism as their common foe. On the one hand high religion has almost always held that "no man hath seen God at any time." That which confronts men in their most sublime moments of religious experience admittedly does not confront the ordinary physical senses. In spite of various attempts to set forth a perfectly natural view of religion, as a matter of historical fact Oman is doubtlessly correct in maintaining that in religion men have felt themselves environed by the supernatural. At least religious persons have claimed that their perceptions have gone beyond what is given in sense-experience, and upon that claim they have staked everything. On the other hand, however ethical imperatives and principles have been regarded, it is difficult to see how they could be perceived directly by the physical senses. An empirical view of ethics must, it seems, resort to objectification of perceptible fact in order to allow for experiences of ethical imperative. In this case certain sense impressions are accounted for by moral ideas which are in turn objectified and in that way become objects of moral experience. Thus, the sense of moral imperative is not sense-experience of the actual world but experience of an objectified

23. See J. Oman Natural and the Supernatural, p. 64, f.
scheme of ideas designed to interpret certain quasi sense-data. In any case, therefore, ethical imperatives and principles do not confront the physical senses. Like the God of religion, no man hath seen, heard, touched, or tasted them at any time.

If this premise is granted, and it is granted that sense-experience in the narrower meaning of the term is the only basis for knowing the actual world, ethical and religious agnosticism seems to be inevitable. Indeed this conclusion has so forced itself upon modern theologians and moral philosophers that they have given themselves unsparingly to the task of showing that man's experience and knowledge of what is actual or ontal does not depend entirely upon what is given in sense-experience. It is therefore both interesting and significant that Dr. Tennant should endeavour to establish theology on a strictly empirical basis. One can only wish that his efforts had been more successful, for surely many of the central problems of modern life and thought would be solved if all knowledge were derived from the same kind of a sense-basis. Yet, in spite of these wishes and the ingenious way in which Tennant develops his thought, it is difficult to see how the position can stand. Concerning religion he distinguishes between two types of experience, first, certain quasi impressional data described as a sense of peace or release from sin, secondly, experience of ideas, such as the idea of God which are designed to account
for these impressions. Only the second kind of experience is distinctively religious, says Dr. Tennant. The 'religious-ness' of it is derived from the theological ideas operative at the time. Consequently, because theology has to do fundamentally or at least first, with these impressional data and with the ideas which are devised to interpret them, theology is a science of the actual the same as chemistry or physics. Its data are given in sense-impressions like those of any other science. Of course these original sense-data are qualified by subjective influences but, because this is true of the data with which the other sciences are concerned, the standing of theology is not peculiarly impaired.

(a) The first objection to this treatment of the matter may be stated in the form of a question. Are these original impressions such as the sense of release, impressions of God as He is described roughly by religious ideas, or are they simply impressions of the actual world like colour, size, or hardness with which the physical sciences deal? If, the second alternative is granted theology simply becomes natural science for its task is to deal with impressions of physical environment. The alternative, therefore, is between theology which begins with certain special data, namely impressions of the Divine, and theology as simply physical science. There is,

25. Ibid p. 177.
however, still a third possibility. Perhaps these impressions are simply states of mind which surge up from combinations of stimuli which are totally different from what is suggested in the impressions or at least unknowable. Of course these impressions have been accounted for by positing a Divine Object but there is no way of establishing any reliable correspondence between that which caused the states of mind and the Divine Object thus posited. On the contrary, the weight of probability suggests that these states are like various moods which come and go without any particular objective reference. That is, possibly these impressions are not of anything other than objects created by the subject or subjects as constituted by society. In this case theology might still be regarded as an empirical science but not a science of the actual. Further, theology thus conceived would be distinguishable from psychology only by the fact that it deals with special kinds of subjective states. But, because analytic psychology and psychoanalysis have put the sense of guilt, release, and the like within their study, again theology would seem quite superfluous. Indeed, from the point of view of Dr. Tennant's phenomenological epistemology, this third possibility appears to be most consistent. However, in thus regarding the data of religion the conclusions which psychologists like Leuba and Jung have reached would seem inevitable.

(b) A second question arises concerning the quasi impressional data. If these data are like colour, size and hardness
to what sense organ or combination of organs are they presented? Impressions of colour are presented to the organs of sight, hardness to the organs of touch and so on: - but it is by no means apparent to just what organ or combination of organs the quasi impressional data of religion are presented.

In the face of this question doubtless the general run of religious apologists have been right in urging that men are able to receive impressions of Reality in ways other than the physical senses. If not, their God must be either unknowable and beyond experience in any sense or quasi physical. But neither of these alternatives can be entertained by devoutly religious persons. And, unless those who attempt to make theology an empirical science can extend their view of perception so as to allow the special data of religious experience genuine empirical status, the efforts seem bound to fail. If, however, Dr. Tennant admits this further faculty of perceiving "things unseen" he must also admit that the ideas of religion are derived from and verified according to that which is given in this further capacity to perceive, hence, that the data of theology are of a special kind. Further, if this is admitted, religious ideas do not depend for their verification upon conclusions derived from data that are not peculiarly religious, consequently, evidence from science is valuable in establishing the validity of religious beliefs only after those beliefs
have been derived from specifically religious experience. And even then, such evidence is little more than collaborative.

(c) Still a third objection should be referred to even though it is not so pertinent as the two just mentioned. Attempts to reconcile religion with science in the way suggested by Dr. Tennant tend to submit religion to all the changes and uncertainties of science. A century ago when scientific opinion was more or less agreed and a high degree of certainty regarding scientific conclusions was evident, the religious life might conceivably have secured stability and assurance from an alliance with science. At the present time however, when science is itself undergoing radical change and is fraught with the most flagrant disagreement, what cumulative evidence could science afford for the central beliefs of religion? The history of apologetics is full of embarrassing moments when the extrareligious basis upon which the religious life was established has been severely altered in the natural processes of scientific and philosophical development. One scarcely dares to imagine how insecure the basis of the religious life actually would be if it must depend upon the certainty which the science of each generation can attain. Moreover, the history of science affords ample grounds for the possibility that a type of science may arise which, instead of confirming the essential beliefs of religion in any way at all, will flatly deny them. At any
One cannot help believing that the proposed alliances between science and religion have failed and in the nature of the case must fail to enrich the life of religion and that on the basis of the purely scientific attitude the awareness of Divine Reality, which is at once the condition of religious life and the source from which it draws its strength, is rendered impotent.

As far as the defence of religion and theology is concerned, it is difficult to see how either of the possibilities which are consistent with Dr. Tennant's position can be of any special value. On the one hand theology is dissolved into physical science and religious experience into an experience of certain ideas for which there is no established ontological justification. On the other hand, theology is taken up into psychology, where the Reality of the object confronted in religious experience is simply disregarded or accounted for on a purely subjective basis. Of course, the other possibility, namely, that the sense of peace is an impression of Divine Reality and as such is the special cognitive basis of theology is just the position which Tennant contends against.

This criticism of Dr. Tennant's position, however, does not dismiss the problem raised by the empiricist temper of the modern scientific attitude. It merely shows the inadequacies of one type of solution which has repeatedly asserted itself in modern liberal theology. At the outset, the problem of dealing
with radical empiricism from the point of view of a religious apologetic is a peculiarly difficult one. In a sense all proof or disproof is ultimately a matter of self-evidence. The scientist proves a proposition by displaying the facts upon which the proposition is based in such a way that the proposition becomes self-evident. At the same time, this kind of proof is evidential because of certain epistemological assumptions. Indeed, this is so of almost every effort to establish the self-evidence of a proposition. But, empiricism is itself an epistemological assumption. It must either be self-evident in itself or not evident at all. Any proof for or against it must either assume its validity or not assume it. Upon the assumption that sense-experience is the only basis for knowing and that all else which purports to be knowledge is derived from purely subjective processes, all possible exceptions to the empiricist doctrine which might be cited against it are of no evidential value because they have been pre-judged as subjective. On the other hand, if it is assumed that in religion men perceive the "Unseen" and feel what is not amenable to the sense of touch those perceptions are themselves evidences against radical empiricism. Such facts (if they may be called facts) as the experience of one's self, of other selves, of ethical imperatives or the Divine Presence are of evidential value therefore, only to those in whom those experiences have brought the conviction which is adequate self-evidence.
Further positive evidence against empiricism seems to be impossible. Perhaps that is the reason why the apologists of religion have struggled so much against empiricism and why some modern theologians have sought a solution for the problem by making theology an empirical science.

For the religious apologist the problem of radical empiricism is made even more difficult by the way empiricism denies the three criteria by which metaphysical postulates and assumptions are usually judged. In the first place advocates of empiricism have often proceeded as if the doctrine itself were based upon sense-experience. But, precisely what kind of an impression or perception could carry in itself the idea that sense-experience is the only valid basis for knowledge? Obviously the sense-basis for this postulate is none other than common sense. Like other aspects of the modern scientific attitude, therefore, empiricism begins with common sense, yet: empiricists like David Hume have seen clearly that extreme empiricism contradicts common sense at almost every turn. Careful and disinterested reflection can alone make it evident how far men's so-called knowledge is not warranted by what is given in sense-perception. Thus, empiricism gets its first impulse and justification from common sense, but then turns back upon common sense with contempt. Consequently,

* See pp. 109 - 111 of present work.
the criterion of common sense which has proven useful for determining the validity of metaphysical doctrines is of little value against empiricism. Even so, this question is pertinent, why should empiricism start from common sense and then later on deny the evidence from common sense?

Secondly, the history of science makes it apparent that empiricism as a theory of knowledge lies very near certain practical interests. Control of events and forces in the actual world has played a large part in commending the theory to thinking people. Yet, like the evidence of common sense, empiricism soon turns its back upon the evidence of practical results. It may be practically necessary to act as if one possessed knowledge which goes beyond what is sense-given, but to the empiricist that fact is no evidence that such knowledge is valid. A knowledge of God may be a practical necessity for life but that is no evidence that the knowledge is valid. Hence, empiricism uses the evidence from practical results as long as it does not contradict the empiricist assumptions, but after that, flatly denies that such evidence is valid. So, like the principle of common sense, practicality is of little or no value in disproving the empiricist position.

The third criterion, namely the principle of rationality or coherence is equally impotent against empiricism. For the empiricist a proposition is rational when it expresses what is given in sense experience. Coherence likewise, is not coherence with thought but with sense-knowledge. A postulate or
proposition may be necessary to or consistent with a particular system of thinking yet it may be irrational in the sense of contradicting or going beyond what is given in sense-experience. For example, causality may be necessary for thinking about events in the natural world, but that necessity is not to be confused with rationality as agreement with sense-given knowledge. The intellectually necessary, then, is not the rational, or the real. What is given in sense-experience may contradict any scheme of thought without being regarded as irrational or incoherent. Thus the criterion of rationality or coherence is interpreted in such a way that even if empiricism were shown to contradict the necessary assumptions of thought, or to be incoherent with the best thinking of any given age, that would not disprove it.

While this denial of evidence from common sense and practical results and ingenious ways of interpreting rationality makes it difficult to disprove radical empiricism it remains for empiricism to justify the procedure. No position can declare common sense naïve and pour contempt upon the evidence of practical results without considerable reasons for doing so. If empiricism declares that men cannot have reliable experience of God, ethical imperatives, themselves or other selves, and men actually guide their lives most significantly by knowledge derived from those experiences, then it is for empiricism to prove the point. If experiences of the Beyond enrich human
life, assure it against insignificance, and cause it to arise above the purely physical level, any denial that these experiences are of something Real even though it is beyond the physical senses, must be proven conclusively. Moreover, for the open-minded person of today such facts as experiences of other selves beyond the experience of other bodies should indicate that there is something wrong with empiricism in the extreme form. There is surely enough common sense and reliance upon the evidence of results in the modern mind to see how highly probable it is that any doctrine of knowing which puts the significant things entirely outside the bounds of knowledge, is wrong. 27

At the same time, what was said at the outset is surely true. The only conclusive proof against radical empiricism is an overwhelming experience of Divine Presence, one's self, some other self, or of ethical imperative, which carries with it real conviction. Such evidence is self-evident. It is given, and until it is given any effort to show the inadequacies of empiricism is likely to fail.

Perhaps this may appear to be a rather futile conclusion. Possibly it is. But two things may be said in defence of it. In the first place, the facts in the case have been faced and the problem formulated. And secondly, a recognition of this

27. See C. C. J. Webb Religion and Theism p. 101 f. for a statement of such arguments against radical empiricism.
conclusion may guide religious apologetic away from any kind of alliance or compromise which will negate its positive influence. After all, proclamation of faith and personal testimony may be indispensable for those who would further the life of religion.

FORMAL AND ACTUAL CERTAINTY

Dr. Tennant's view of cognition has been dealt with at such length for four reasons. (1) Because his distinction between certainty and certitude on the basis of objectivity and subjectivity is so common among representatives of the modern scientific attitude. The criticisms offered therefore against this distinction pertain more generally to the type of thought which this paper has purposed to consider. (2) Further, Dr. Tennant's view of perception, with the sceptical implications which it involves, is in the general tradition of scientific thought from which the modern attitude has derived so much of its peculiar nature. (3) In the third place, Tennant is noted for his attempt to state the apologetic position of Modern Liberal Protestantism to the effect that theology is an empirical science. Further, in advocating radical empiricism as the basis of all the sciences including theology, Tennant has afforded an opportunity for discussing empiricism in relation to religious and moral certainty. (4) And more positively, the clear-cut way in which Tennant distinguishes between formal and actual certainty is of first importance in arriving at an understanding of what certainty is in its
broader aspects.

This distinction which he insists upon is really the
distinction between the actual world known in the first in­
stance through sense perception, and possible ideal worlds
which pure thought may construct. Mathematics, he says, lays
its own foundations, creates and defines its entities, and
manipulates them according to accepted rules and axioms.

"Pure mathematics, and metaphysic that would fain be wholly
a priori or pure, are free to lay any number of diverse
foundations and then to construct a definite tale of
possible worlds at their pleasure; but no such system will
necessarily tell anything, worth knowing, about the one
world in which we are interested." 23

Now Tennant points out that in the world of ideal entities
posited and precisely defined by pure thought, the relations
between these entities may be "read off," with an immediacy
which leads to certainty, whereas, when one is confronted by
the actual world presented to him in sense-experience, cer­
tainty is of a different sort. That is the world of "brute
fact," where men must live; not merely speculate. Elements
in the possible worlds are universal and hence empty of actual
content, therefore, they will affect any number of individuals
in almost exactly the same way., whereas, in the actual world
experience of objects is individual and concrete.

Recent scientific thinking seems more inclined to recog­
nize this distinction. Eddington, for example, calls attention
to the difference between the physical world as conceived by

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theoretical physics and the "familiar world" in which men live perceptually. Professor F. A. Lindemann writes,

"By this word (universe) the scientist, and few people other than scientists utilize mathematical methods in their cosmological speculations, means the image or model, built up of familiar concepts or indefinables, which he creates; this forms his so-called 'Physical World,' into which he endeavours to fit events corresponding with his experiences. He is not concerned to claim any specific reality for this Physical World; his aim will be achieved if a one to one relation can be established between the consequences and predictions derived from this model and all the facts of human experience." 30

L. M. Parsons suggests that many of the pronouncements and results of science pertain only to a conceptual system which is built up of definitions, axioms, and formulae which may or may not correspond to anything in the actual structure of things. 31 Further he says, "The definition and ideas of physics are all expressed in terms of one another; hence we never get beyond these definitions so as to obtain absolute knowledge of the reality underlying phenomena." 32 "Electric force," for example, "is defined as something which causes motion of electric charge; an electric charge is something which exerts electric force." 33 C. F. W. Joad in his book, Philosophical Aspects of Modern Science, goes on to urge that "The World of science consists of symbols and shadows; the world of sense is the result

29. Philosophy Vol. VIII No. 29, Jan. 1933 Art. Physics and
31. The Universe of Our Experience p. 36.
32. Ibid p. 269.
33. This example is cited by Parsons. It is taken from Nature of the Physical World p. 264.
of constructive activities of mind operating upon the world of symbols and shadows."34

In an attempt to understand the nature of certainty, it is necessary to distinguish between formal certainty and certainty for the conduct of life. Yet, there is a real danger in drawing the line too drastically; for in practically every effort to gain a knowledge of the actual world in which human existence is cast, formal elements are indispensable. According to Tennant's own position, even the most imaginal concepts are remotely but fundamentally connected with the data of sense. Those ideal entities have meaning and are intelligible only because they have some connexion with experience of something actual. In spite of the fact that logic and mathematics, and a priori thinking in general have been highly speculative, that they have facilitated an understanding and control of the actual world cannot be gainsaid. Although the relation between formal correctness of conceptual framework and validity in the content of judgments has remained a mystery, still, it is difficult to believe that there is no relation at all.

In view of these facts, perhaps it would be more nearly correct to distinguish between ideal entities or forms isolated from their implicit relation to actuality and ideal entities in

34. C. E. M. Joad Philosophical Aspects of Modern Science p. 192.
35. Tennant The Soul and Its Faculties p. 65. "Though not a state or an act of the subject, the idea is subjectively derived or fashioned; and though not created out of nothing, but ultimately out of the impressional, it does not consist of the impressional." Philosophical Theology Vol. I.
which the relation is assumed in order to more fully understand and control the actual world. In common language this is the distinction between pure mathematics and applied mathematics; or, between theoretical science and technology. At the same time, what Dr. Tennant points out is pertinent, namely; "The application of a pure science to the actual world, is wholly tentative and problematical. . . . When mathematics becomes applied science, it loses the precision and certainty, in virtue of which it was selected as the exemplar of knowledge." Consequently, it might be advisable to further define formal certainty as that conditioned by the relations between ideal entities as those entities are isolated from their implicit relation to actuality. For example, a mathematician may be absolutely sure that, given the formula for the velocity of sound and the distance between two points, the resultant time interval necessary for the sound of a cannon shot to cover the distance is so many seconds. But, he would not be so certain that it would require exactly that number of seconds for the sound of a cannon shot to cover that much distance in the actual world. Atmospheric conditions, the interval between which the sound is heard and recorded at each end, and a universe of other factors which are absent in the purely mathematical calculations, enter into the actual gun shot. Accordingly, the more completely pure thought forms and ideal entities are isolated from their implicit relation to actuality,

36. Tennant The Soul and Its Faculties pp. 6 - 7. Philosophical Theology Vol. I.
the more perfect the certainty attainable, and it is as such that formal certainty is to be most completely distinguished from certainty in the conduct of life.

If this qualification is relevant, formal certainty is possible in almost any field. For example, it would be possible to make Christian Theology somewhat of a pure science if the task of theology were conceived as that of examining the conceptual forms presented in the creeds of the Church. In almost every sphere of thinking, the difference between relations between well-defined concepts and actuality is evident. Consequently, both formal certainty and actual certainty are possible within those several spheres. Even so, it is evident that the more highly abstract thinking becomes, the higher the degree of formal certainty. That is, the more completely universal the forms of thought become hence the more they are emptied of content derived from experience of the actual world, the less contingency is possible in their apprehension and the greater the possibility that mind will be able to master the situation. Man may not be able to determine events in the actual world, but, in the probable worlds which he has carefully defined he should be more of a master. Perhaps the matter might be put in this form: In spheres where it is said, "let 'this' denote 'that'," without any implication that it actually does, formal certainty in its highest degree is possible.

With respect to the modern condition of moral and religious uncertainty this distinction is vastly important. As was seen
In the study of the modern scientific attitude mathematics with its precision and certainty has been very attractive. After the fashion of Descartes and Spinoza men have desired the same certainty in other spheres. In short the precision of mathematics has been a sort of ideal toward which scientific thinking has aspired. Moreover, by abstracting various actual elements from experience these entities with which science has dealt have approached the nature of the ideal entities of mathematics and the pictures of the universe thus constructed have assumed a real likeness to the possible world of pure thought. Consequently, many of the conclusions of science have been characterized by a kind of formal certainty, although not as complete and overwhelming as mathematical certainty, yet approaching very near it.

When, therefore, this modern attitude has searched for certainty in morals and religion this mathematical ideal sought in scientific inquiry has been pursued. Men have sought religious beliefs and moral ideas which should come to them with the overwhelming certainty attainable in the pure sciences. Because this was not possible they have despaired of certainty in these higher realms of experience and fallen back on the dictum that morals and religion are subjective in the sense of not being conditioned by what is Real or actual.

But, if this dictum must stand, it is apparent that not only certainty in religion and morals must go but also certainty
for the conduct of life or certainty of the actual world which science seeks, in so far as it is not pure speculation. That is, if certain knowledge is possible only in the pure sciences then applied science as well as religion and morals must surrender to agnosticism. Judging from the way scientists like Max Planck, Einstein, and others attack scientific positivism, science stands with religion and morality in the warfare against a type of agnosticism concerning the actual world which impairs the foundations of both. Consequently, the statement that certainty of the mathematical kind is impossible in matters of spiritual life is perfectly true, because certainty in religion and morals pertains to the actual world and not to well defined possible worlds. At the same time, in so far as science attempts to make discoveries in and draw conclusions about the actual world, mathematical or formal certainty is likewise impossible for science. Therefore in the science of that practical kind which has affected modern thinking so decisively, presumptive knowledge characterized by certainty for the conduct of life is alone possible. Therefore, in this respect at least, the knowledge of this kind of science and the knowledge of religion and morals are similar.

Formal certainty then grows out of man's relation to possible or ideal worlds which are posited and well defined in pure thought, while actual certainty grows out of man's relation

to the actual or familiar world in which human life is cast. The former relation is highly intellectualistic in quality. But recent psychological inquiry has made it clear that man is related to the actual world through the instincts and primary needs which those instincts are designed to serve. As Whitehead suggests man is related to the actual world through the three-fold urge, to live, to live well, and to live with increasing satisfaction. Consequently, knowledge of the familiar world is not the result of discursive reason alone but grows out of living itself in which both feeling and conation are important facts. No doubt this is what Dr. Tennant had in mind when he insisted that knowledge for the conduct of life issued from a sympathetic relation to the actual world. In another place he says, "It (presumptive knowledge of the actual world) is not even wholly and purely cognition. It is rather the output of the whole man, or of the mind as feeling and striving, as well as being aware." Henry Osborne Taylor puts it in this way, "Every act of our faculties leaves its effect. We grow through action. Our natures enlarge not merely through the increase of conscious knowledge or experience, but through changes coming from without our knowledge from action." Doing and knowing are perhaps not as different

39. Tennant Philosophy of the Sciences p. 82. See also Whaterhouse Philosophy of Religious Experience p. 73.
40. Taylor op. cit. p. 106.
as traditional philosophy was inclined to think, knowledge of the actual world issues from 'living through' situation after situation presented in man's organic relation to that world. Indeed, such knowledge is not merely an intellectual luxury but a physical, mental and spiritual necessity enforced by the three-fold urge of life. There is a practical 'must' which corresponds roughly to the logical 'must' of formal certainty.

According to this view of cognition the alogical trust or mental venture to which so many modern writers have called attention is rooted in the instinctive life itself and therefore arises from the fundamental needs of life and the urges which seek to satisfy them. From the point of view of formal logic this trust may be alogical or even illogical, but in so far as the rules of thought have any foundation in the structure of life itself this venture of faith is supremely logical because it is consistent with the nature of life as that life is rooted in certain fundamental needs and their satisfaction. What is cosmically necessary could hardly be considered intellectually unnecessary or logically inconsistent.

A still further peculiarity of man's relation with the actual world is important from the point of view of understanding the conative aspect of actual knowledge. As man is related

41. This is the argument of John Dewey The Quest for Certainty.
to the familiar world nothing will wait. Living, striving, and knowing must take place in the present which is quickly and irrevocably becoming past. In this sense every act and the knowledge which directs it is final, because the moment in which it takes place will never return. Knowledge, therefore may be final in this sense and still be incomplete or imperfect. For example, when a doctor is called to the bedside of a patient suffering from heart-failure he must act at once. He may not know all there is to know about the heart and its diseases, but for the moment his knowledge is final. It is final not because he has reached the terminus of knowledge, but because the nature of life has established a terminus - the present moment. The next similar case may find the doctor in possession of more perfect knowledge, but the bounds set by the moment in which he is called upon to act make his knowledge at that moment final. In this way, then final knowledge is to be distinguished from perfect knowledge. Speaking in terms of the ideal situation both may become correlated at some time and man will know fully as he is also fully known. But, until then man must act on the basis of the knowledge he has and at the moment such knowledge is final. Moreover, approximation of perfect knowledge is possible only through continued action on the basis of knowledge at the moment.

This conative 'must' of life, therefore linked with the refusal of the action-moment to wait, gives a finality to
certainty for the conduct of life which is highly important. Certainty is literally compelled, not by logical necessitation or by the coercion of immediate impression of some aspect or quality of the external world, but by the total impact of the actual and living structure of things with which man finds himself inescapably linked.

In dealing with possible worlds, on the other hand, this conative urgency is by no means so pronounced. In a sense any person may refuse to live in or to take such worlds into account. Likewise the time element is only attributed to possible worlds. Therefore, suspended judgment may be maintained almost indefinitely. To put it another way, certain knowledge of ideal worlds is not a matter of life or death. A higher degree of perfection in knowledge is possible but finality in the sense just described pertains only to the actual world. Formal certainty then is evoked by highly perfect or complete knowledge whereas actual certainty is compelled by the finality of the present or action-moment.

It is plain, however, that the state of convincedness in actual certainty will possibly never approach the completeness which it attains in formal certainty. Perhaps the most fundamental reason for this is the fact that in formal certainty the subject is dealing with a type of world which can be almost completely determined. Such a thing as a novelty or contingency simply does not arise in mathematics or in any purely theoretical science simply because they are excluded ex hypothesi.
Infinite possibilities are limited to only one. Complete identity is posited, hence, can be relied upon. Therefore, in a world which the subject or subjects have created and accepted, almost complete mastery and determination are possible. Furthermore, the same thing holds for pictures of the universe or the world presupposed by science, in so far as they contain elements abstracted from the actual world given in experience. In so far then, as the scientist thus arrives at a fully determinable world formal certainty approaching that exemplified by mathematics is possible.

Secondly, because formal certainty pertains primarily to the sphere of discursive intellect as isolated from feeling and conation, the total number of factors in the situation are greatly reduced. Various combinations of and reciprocal action between tones of feeling and forms of action are simply ruled out of the situation as far as that is possible. Manifold elements, and complexity of the most intimate kind are therefore conveniently put to one side. Hence the subject may operate with such a high degree of competency that almost complete certainty may result.

Still a third reason is not so manifest but perhaps more influential. In dealing with possible or model worlds, or with

42. Personality always functions as a whole. Yet by training it is possible to attain a condition in which feeling and conation are held in abatement. In some respects at least this condition is the ideal of the pure sciences.
the universal forms of the pure sciences a high degree of detachment and disinterestedness is possible because things 'do not matter' in that kind of a world as they do in the actual world of experience. Thus the possibility of making a completely dispassionate judgment is extremely high, therefore subjective conditionings brought to the situation because the thing in question matters deeply, are reduced to a minimum. In such a case then, one may be reasonably sure that his judgment is almost thoroughly objective in the sense that it has been dictated by the nature of the object itself rather than by his own concern.

Notwithstanding the attractiveness and satisfactoriness of this exemplary kind of certainty obtainable in abstracted or posited spheres and the attempts to extend it into the sphere of actual life, when it comes to the actual world certainty of this kind is simply impossible because the actual world is full of contingencies, individuals which cannot be brought under the form of identity, and things which 'do matter.' Again, efforts within both the posited and abstracted spheres may and often are helpful in arriving at certain knowledge of the actual world. None the less, the question is always pertinent, does this judgment pertain to the possible world carefully defined for methodological purposes or does it pertain to the

43. In the work of Spinoza and Descartes, for example.
actual nature of things as they are given in experience? Further, if this question is asked concerning each and every judgment which is ventured, the error that has resulted from confusing formal and actual certainty will have been avoided. Also, it will become apparent that the quest for a religious certainty like the certainty of mathematics or theoretical science is a mistaken quest; for, in so far as religious certainty pertains to the actual nature of things, actual certainty is the only kind which will satisfy the quest, and as such must necessarily differ from formal certainty.

SUMMARY

By way of summary then, certainty is a state of convincedness evoked by some thing 'other' which confronts a subject. This perception however, is not limited to sense-perception in the limited sense of that term but must be extended to include impressions of one's self, other selves, ethical imperatives and the Divine Presence. The degree of certainty or convincedness is roughly in proportion to (1) the nature of the object with which the subject is confronted, (2) the relation between subject and object, (3) and the capacity of subject to perceive distinctly so as not to confuse the experienced object with other objects. Further, there are two kinds

* Perhaps there are other modes of perception which are extra-physical, but these are perhaps most important and most obvious.
of certainty; formal and actual, which are distinguishable at their extreme limits but which are intermingled in the practical life of knowing subjects. It is, nevertheless, important to distinguish between these two kinds of certainty thereby to avoid confusing certainty which pertains only to ideal or abstract entities and certainty concerning the actual world which confronts subjects in concrete experience. Moreover, in formal certainty discursive intellect operates more or less separately from the conative and feeling aspects of personality, whereas in actual certainty conation and feeling are fundamental. For this reason knowing the actual world and the certainty of that knowing is a function of the entire personality as it functions more or less normally under the three-fold urge to live, to live well, and to live with increasing satisfaction. Actual certainty is therefore final even though it is imperfect because such certainty is all there is in the present moment of actual life in which knowing subjects must act. At the same time knowledge of the actual world is always seeking the ideal which is perfect knowledge.

If it is true then that knowledge claimed by applied science concerns the actual world it is highly similar to that claimed by religion and morals. But if this is the case, what is the relation between certainty in science and certainty in religion and morals? The next chapter therefore, will be devoted to this question in view of arriving at some conclusion regarding the distinctive features of religious certainty.
CHAPTER VII
CERTAINTY IN SCIENCE, PHILOSOPHY AND RELIGION

From the point of view of the conception of certainty set forth in the previous chapter then, what is the relation between certain knowledge in science and certain knowledge in philosophy and religion? Before taking up this question in detail, however, something should be said about the meaning of science. In fact, this relation in each case will depend largely upon what is meant by science, philosophy and religion. Lloyd Morgan in his recent book, The Emergence of Novelty, distinguishes between science which seeks to render an exact account of actual physical and mental processes and science which seeks to account for those processes. He goes on then to suggest that in applying itself to the latter inquiry science really passes over into other than scientific considerations. Tennant also makes the same distinction between pure science and applied science. Pure science moves in the direction of ideal or posited worlds or worlds constructed of elements abstracted from that which is given in sense-experience, whereas applied science, whether it

be of a mathematical or physical kind, moves in the direction of the actual world which it seeks to understand and control. However, he implies that in thus seeking to know the actual world science is within its rightful sphere. Perhaps this is just a matter of definition. Yet, the history of science together with the account of how science has become such an important influence in present-day thinking, makes it clear that science has not been purely descriptive. In passing over to the task of accounting for physical and mental processes, possibly science has gone outside her chartered field. None the less it has been largely this fact viz., that science has ventured to account for events, that has gained for her such a following.

That type of science which has so determined the modern outlook has not moved expressly in the direction of ideal or constructed worlds, but has moved toward the world in which human life is cast. At least it has attempted to account for events of the actual world. Consequently, to define science as the type of inquiry which seeks to give an exact account of what happens in the actual world as those happenings are abstracted from their ontological implications, simply is to define science in terms of what it should be rather than in terms of what it actually is. In this respect Dr. Edwards is perhaps nearer the facts of the case when he says, "if we take the history of human culture as

2. Philosophy of the Sciences p. 84.
a whole we find that it is the 'will to live', rather than the 'will to know' without further motive, that has given rise to the sciences and to philosophy." That is, science has been bound up with practical life from the first. At this point the scientist is just a specialized artisan seeking knowledge which will assist in building, farming and other practical endeavours.

The point is that if science is defined in such a way as to put the ontological implications of discovery and description outside its perview, the certainty which it attains is largely formal. This is so because that which science describes is simply phenomena abstracted from the ground of being of which these described events are but appearances. On the other hand, if it is assumed either that there is nothing but phenomena or that the ground of being of which they are appearances is unknowable, the ontological implication is not really disregarded. On the contrary a very definite opinion regarding it has been given; for obviously to say that there is nothing but phenomena, or that what conditions phenomena is unknowable, is to pass a definite judgment upon the ontological implications of appearances. Even so, as long as no judgments of this kind are ventured science may proceed to describe appearances thus abstracted from that of which they are appearances and attain thereby a high degree of formal certainty. For example, it may

be possible to describe how a stick looks standing at a 30° angle on the bottom of a river. A man may be absolutely sure that his description is correct. As long as no question of the actual shape of the stick is raised this high degree of certainty is possible. That is, as long as the appearance is abstracted from the actual nature of the stick almost complete certainty may be had. But when the ontological implication is raised, the man is dealing not merely with an abstract world but with the actual one. Further, if it is said that the stick is as it appears, then a judgment concerning the actual world is ventured and all the questions and mysteries which that world involves come into the situation. Hence, formal certainty is displaced by actual certainty.

On the other hand science may and often does construct possible worlds and pictures of the universe in view of attaining an understanding of the actual world through these constructions. Scientists build a working model of the universe. Of course it is not the actual universe, yet there are resemblances and points of established agreement between the two. Even so, the model world is an abstraction. It can be understood and controlled because it has been determined by speculative thought. Therefore, as long as the scientist is dealing with the model world independently of any implication that it agrees in any way with the actual world, he may attain formal certainty; while in so far as application to the actual world is concerned presumptive knowledge and actual certainty
concerning it, are alone possible. In this type of work then, science really alternates between the poles of formal and actual knowledge, which means that the two types of certainty may easily become confused. For example, orthodox science often claimed the same certainty for its pronouncements concerning the actual world as it achieved in relation to its model world. Recent scientists, on the other hand, tend to take over the mystery of the actual world into the model world. Science today is just as certain if not more so of its "picture" of the universe as was earlier science. The mystery that is evident pertains rather to the application of the various elements of that picture to the actual Universe.

As to how, therefore, certainty in science is related to certainty either in philosophy or in religion depends upon whether science is defined in terms of what it should be or in terms of what it actually is. If science is confined to a world of appearances isolated from reference to that of which they are appearances, the certainty which is attained is highly formal in character, whereas, if science seeks to account for physical and mental processes the certainty which is attained is actual. In any case it is important to see that if and when science ventures to account for events it cannot claim the special and exemplary kind of certainty which is obtainable in purely formal or abstract considerations.

The various branches of philosophy also may be defined as exact sciences. Ethics may be conceived as a study of
historical manifestations or appearances. Thus moral codes, habits of conduct and social dispositions may be studied in a comparative and critical manner. Such questions as, do moral principles express anything in the nature of things? may be disregarded in the interests of a purely scientific account of moral life. In other words, the ontological implications of these historical manifestations of morality may be ignored. But, in this case those manifestations, like appearances in physical science, are abstracted from that of which they are manifestations. As such, therefore, the certainty attained in morals would be highly formal in character, hence closely related to the formal certainty of the pure sciences. For example, a man may be perfectly certain that according to the moral code of his country it is right to fight for national honour but he may not be so sure that that particular principle of the code is in agreement with the moral reality which confronts his conscience in moral experience. The first type of knowledge is highly formal. Implication of the actual nature of life is partially ignored and the formal element is pronounced, while the latter question raises the implication of the actual nature of life and experience into prominence. In the formal certainty regarding the question thought moves in the direction of the possible world described by the code, whereas in actual moral certainty thought moves in the direction of the actual world in which men live as moral agents, and in which they are confronted by ethical demands.
So also logic may become highly formal and symbolic if the ontological implications are put to one side. Indeed, as logic moves toward the ideal world of symbols and ignores points of correspondence between either the symbols or the rules governing them and the actual nature of things, logic gets more and more like mathematics. Thus, regarding the world of well defined symbols logic may attain a high degree of certainty, but it is really formal certainty. In so far then as logic moves in the direction of a well defined world of symbols and ignores the ultimate problems raised by logical rules and processes the certainty which it attains approaches that of the pure sciences. And inversely, in so far as logic seeks to account for the reasoning processes, establish relations between symbols and reality, between the rules of inference and the nature of things, logic moves in the direction of actuality, hence, the certainty which it reaches is actual but not exemplary.

The relation then between certainty in science and certainty in philosophy depends upon how the ontological implication is dealt with, or in what direction scientific and philosophical thought is moving. If it is moving in the direction of the actual world and the ontological implication is pronounced, then actual certainty or certainty for the conduct of life will result, whereas, if it is moving toward possible or abstract worlds, formal certainty approaching that of mathematics will result. At the same time, it is evident that the
ontological question is generally more explicit in philosophy than in science. Indeed, it is only at certain termini or after research has attained to a high degree of maturity, that questions of actuality arise. The major part of the scientist's effort is confined to aspects of the world. He is constantly articulating various abstract elements into a "picture" of the universe. Whether or not the physical world as he constructs it agrees with the 'familiar world' is, in some ways at least, a secondary consideration. Consequently, the certainty of science might be characterized as primarily formal and secondarily actual if it is understood that in this secondary phase science is most important in the practical conduct of life and that in this sphere the high degree of certainty attained in abstract considerations no longer holds. In other words, when science quits the sphere of technical procedure and begins to set forth metaphysical dogmas in the manner described in a previous section, the certainty obtainable in that well defined sphere cannot be taken over into conclusions concerning the actual nature of things. In this latter sphere the doctrines of Reality offered by men of science must vindicate their claims in the same manner as any other doctrine of Reality and, as characterized not by the formal certainty of abstract science, but by the actual certainty of any ontological study.

Especially in moral philosophy, in so far as it is not merely a science of moralities, the ontological implication is much more pronounced. The question as to whether or not moral
laws and principles express something in the nature of things is, in many respects primary. Here again the ontological implication is not avoided by assuming that moral principles are merely human conventions, for that assumption itself is an answer to the question, do moral principles express something in the ultimate nature of things? even though it is a negative answer. The assumption presupposes a knowledge of Reality sufficiently complete to support the conclusion that in it there is nothing which might confront moral beings in such a manner as to give rise to moral experience. Even complete moral agnosticism does not avoid the ontological implications of morality for in asserting that the ontological status of moral principles cannot be known, the ontological implication is dealt with after a fashion.

In metaphysics of course, unless the study is merely historical, the ontological implication is even more central. Indeed, it might seem as if all the problems of thought and experience ultimately retreated into the domain of metaphysics. Possibly, in one sense this is true. At the same time, while the ontological implication is dealt with more or less explicitly in metaphysics, reference to the ultimate nature of things is really made in the interests of a coherent and satisfactory scheme or way of viewing the world and experience. Much the same thing is true of ethics and logic. Reference is made to the ultimate nature of things in the interest of accounting
for moral experience and correct thinking. Likewise in applied science, when reference is made to reality it grows out of the practical interest in understanding and control. In none of the branches of philosophy or science, therefore, is the ultimate nature of things dealt with for its own sake—that is explicitly. 4

These special interests which turn the various branches of philosophy and science to the ultimate nature of things involve various degrees of abstraction. For example, when science refers to reality in the interest of understanding and control mere existence is isolated from the other possible aspects of reality and considered in this abstract way. Similarly, in ethics the value aspects of reality are abstracted and considered more or less in isolation, and in logic the special interest which animates the study tends to exclude all elements but the rational element from the ultimate nature of things. Metaphysics likewise is interested primarily in the ground of all being. An account of the nature of things must be given in order that men may be intellectually at home. Consequently, in metaphysics the expressions 'first cause', 'prime mover', and 'ground of all being', describe single aspects of reality which are studied in abstraction from the others for the purposes of a

4. When reference is made to reality from the point of view of aesthetics, it is made in the interest of aesthetic experience. An account for the experiences of beauty is sought.
coherent intellectual scheme. Because in science and philosophy reference to reality is implicit in some special interest the ontological implication never becomes quite explicit, hence the study is not completely void of the abstraction which such an implicit reference necessarily entails.

In relating science and philosophy to religion the problem of defining religion naturally arises. Of course some thinkers insist that no definition is possible. Others, while attempting to define religion admit that any definition must be inadequate. However, without going into all this matter which has been discussed at such length in reputable works on the Philosophy of Religion, perhaps it will suffice to point out the poles between which almost all these definitions are to be found. On the one hand, there are thinkers who prefer to regard religion in terms of certain historical manifestations such as ceremony, ritual, worship, and ecstatic dancing. According to this definition certain kinds of feelings such as dependence, awe, creature fear and the like which motivate these manifestations are set up as distinctively religious. On the other hand religion is defined as that sphere of human life which is concerned with effecting a more satisfactory relation with that which confronts them from beyond conceived as the ground of all being. In his book The Philosophy of Religious Experience, E. S. Waterhouse makes a very convincing case for the thesis that religion has always been concerned with the cultivation of a more satisfactory
relation to what man has regarded as the Power behind all being. At any rate, most of the definitions of religion could be arranged between these two extremes. In the first definition the formal element is most pronounced. Practices and types of feeling are taken in a more or less isolated fashion, without any question as to what gives rise to them. According to this view the student of religion gives an account of what happens in certain sections of human experience without accounting for them by reference to the ontal. He takes what is given as historical fact, classifies, criticizes and compares it with other similar facts, and draws his conclusions. Thus religion becomes somewhat of a science and the certainty regarding its conclusions may be conclusive but is highly formal in character. Perhaps even more so than in physical science there is a tendency to pass over from the science of religions to ontological questions and assume the same kind of certain knowledge concerning those questions as is attained in the formal or abstracted area of manifestations. Or more often ontological questions are taken over into the negative assumption that religion is nothing more than manifestations or types of feeling. In other words, it is assumed that there is no ontological status for the religious life. The tending toward this assumption has been seen in almost every sphere in which the scientific method has been applied. However, because it is necessary to limit investigation to the historical manifestations of religion in order to attain a certain
type of knowledge of them, is no reason for setting the same limit in Reality. Further, as in the other instances a very definite answer is given to the ontological implication of religion by the assumption that it is manifestation with corresponding types of feeling and nothing else. That assumption is metaphysical and as such lies outside the certainty and authority of formal knowledge concerning constructions of elements abstracted from the total nature of things.

With respect to the main thesis of this essay it is important to see how the science of religion has carried over its methodological assumption that religion is the sum total of its manifestations into the sphere of metaphysical dogma, thus asserting that religion has no standing in the nature of things. Also, it is important to see that the certainty which is attainable in the science of religion is relinquished whenever such metaphysical conclusions are ventured. There is no a priori reason why the scientist of religions should not venture such conclusions, but in so doing it should be plainly realized that the conclusions involve no special logic or claim upon truth, but take their place among the other doctrines of Reality.

On the other hand, Waterhouse and others are surely right in maintaining that religion is concerned with a more satisfactory relation with the Ground of All Being or God. Religious knowledge then, is presumptive in the sense that it is knowledge of the actual rather than of some abstracted aspect. As such then, religious knowledge is the result of the entire personality
under the three-fold urge, to live, to live well, and to live with increasing satisfaction. As in other cases the elements of feeling and conation are important. Indeed, in so far as the needs of the religious consciousness are deeper than others, these elements are more pronounced. "Unbelief haunts unbelievers," because the conative urge is so tremendous. In any case, whether religious knowledge is formal or actual it is apparent that it requires no special apologetic or mode of justification, but, in either case is just as reliable as any other knowledge either of an abstract section such as its historical manifestations, or of actuality.  

When however, religion is taken to mean the cultivation of a more satisfactory relation with the Ground of All Being it becomes apparent that the ontological implication persistent throughout presumptive knowing becomes explicit. That is, it is not implied in some special interest such as the understanding of moral experience or an intellectually satisfactory scheme, but is itself the explicit quest. It is here that the presumptive certainty of religion is to be distinguished from that of both science and philosophy. In science it was seen that the ontological implication was almost entirely secondary, and in morals it was seen that reference was made to Reality in the interest of accounting for moral experience. Likewise in metaphysics reference to the ultimate nature of things is made in

5. c.f. E. S. Waterhouse The Philosophy of Religious Experience p. 156.
the interest of an intellectually satisfying scheme of things. But in religion men turn their full attention to Reality directly and in the interest of no end other than a more satisfactory relation to it. And even though in other endeavours to attain actual knowledge feelings, conation and discursive intellect act as a whole as personality proceeds under the three-fold urge of life, in religion these faculties are brought into a more intense and effective harmony than in the other spheres. Principal T. Hywell Hughes argues to this conclusion in his book *The New Psychology and Religious Experience*. These are his words: "In religion the human personality functions at its highest and intensest, and it functions with greater wholeness than in any other experience." Höffding may also be quoted in support of this position. He says, "In religion (when it is real and original) all the elements of psychical life work together with an energy and harmony which is hardly to be found within any other sphere." 

In an article entitled *Science and Philosophy*, Eddington throws out a suggestion which is pertinent to this line of argument. He says, "the invocation of Reality seems to imply some higher censorship than the scientific method itself can supply." Herbert Dingle is doubtless getting at the same thing when he says, "I think we must deny the conceptual scheme of

7. pp. 144 - 145.
physics any capacity for telling us the truth about nature beyond what is implied by its power of correlation." In other words, when science comes to the ontological implications of its conclusions a higher and more comprehensive way to Reality is needed. Is it not likely, therefore, that religion, as the express movement toward the ultimate nature of things, which is unqualified by special interests and is the sphere in which personality is most highly unified, should furnish that higher censorship? Perhaps the presumptive or actual knowledge which takes its rise in the elementary urges of life and the needs which those urges seek to meet, finds its ideal completion in a knowledge of and relationship with God who is the ground of all that is known and who affords fullest satisfaction to man's deepest needs. If this is true ontological questions arising within science and philosophy will find their final solution in that which is disclosed in religious experience. The grounds upon which such questions as, does the scientist's picture of the universe represent anything in Reality? and, do moral principles represent anything finally and actually Real? are in religion. \textit{Qua} scientist or \textit{qua} philosopher these ontological implications involve simply mystery, but from the contact with God or the Ground of All Being which religion cultivates presumptive knowledge and appropriate certainty is

10. Science and Human Experience p. 74. See also M. Planck \textit{Where is Science Going?} pp. 167 - 168.
11. See L. M. Parsons \textit{Universe of Our Experience} p. 32.
possible. If as Whitehead suggests religion is "the vision of something which stands beyond, behind, and within, the passing flux of immediate things", it is perhaps on the basis of this vision that the ultimate implications of all thinking will be finally decided. It is just possible then that the sudden terminus which recent scientific thinking seems to have struck has come about because scientific development has proceeded so far in advance of religious insight that in the sphere of actual knowledge science must wait for more vision from the Seers of religion.

If the way religious and moral uncertainty were discussed together in the first part of this essay was not fully understood, perhaps the next point will throw some light upon it. In morals much more so than in science the modern condition of confusion and uncertainty has been caused by a lack of religious vision into the nature of Reality which conditions moral experience. As far as formal knowledge regarding moralities is concerned modern men have attained an abundance of reliable knowledge, but concerning the ontological implications of morality, knowledge has not been commensurate by any means. Uncertainty in morals, then, has resulted from uncertainty of the religious vision of God, which, as has been argued throughout this essay, has resulted from the particular methods and habits of thinking which modern men have been induced to accept. A more complete application of this thesis, however, must wait upon a more

definite investigation of the distinctive features of this religious vision or awareness of Divine Reality and the conditions which are necessary for it.
SPECIAL FEATURES

In the examination of certainty three points were found to be determinative: (1) the nature of the object, (2) the relation between object and subject, and (3) the capacity of the subject. Religious certainty is likewise determined by these three factors, even though thinkers have not been agreed as to which factor is most decisive. Those who have given a large place to natural religion have stressed man's natural relatedness to the divine and his capacity to perceive the divine revelation in various types of natural phenomena. Accordingly, the first factor is almost ignored in favour of the other two. Likewise, the various types of mysticism, taking so much of the special cognitive relation between man and God, have tended to ignore the unspeakable divinity of God as well as the need for clear and distinct apprehension.

Coming as a revolt against both these positions, the thought of Karl Barth emphasizes the central importance of God's nature in determining religious certainty. For Barth
God is the "Wholly Other", "The Individual", or "HOLY ONE". God can be apprehended only through Himself and His faithfulness. In this sense certainty is 'given' by the very presence of God as God; that is, as the "Wholly Other" which confronts men. To use the words of Barth: "... the final word of our instruction is spoken by God Himself and by Him alone: for it is He who mightily disturbs both the dogmatist and the moralist." That is, for Barth God takes such a large place that the other two factors which determine certainty are almost if not completely ignored.

Many critics and even those who are disposed to accept much of Barth's position feel that they must object to the way he slights both man's capacity for apprehending God and the relation between man and God. For example Dr. A. E. Garvie cites a witty French preacher who "described the Barthian theology as providing God with a great key, but not with a key-hole in man." Brunner seems to be much nearer the facts of the case when he insists that the image of God in man is not completely distorted by sin. If this is the case, the image left upon man by the Divine Creator abides as the ground in which the Word may fall and bring forth fruit. In any case, if man has anything at all to do with his certainty concerning God, the relation

1. Karl Barth The Epistle to the Romans English translation p. 443.
2. Ibid p. 112.
5. A. E. Garvie The Christian Belief in God p. 29.
between God and man, and the capacity to know God are important. Of course, in the sense that God is the Creator of all things, both the capacity for apprehending Him and the relation between Himself and men, is a free gift of His Grace. Surely this relation with God and capacity to apprehend something of His Character affords no occasion for boasting or claim upon God. These are gifts which can not be deserved. None the less, as having been freely given they are actually possessed.

While it may be the case that in religious certainty the relation between God and man and the capacity of the subject cannot be ignored, the fact remains that in religion certainty depends primarily upon God. When one passes from the ordinary certainties of life to religious certainty, the nature of the object becomes the nature of THE SUBJECT.

(1) The Nature of God. Scarcely any point pertaining to religion can be discussed without raising some question as to the nature of God. It is not at all unusual therefore, that one is confronted with the question as soon as he turns to an inquiry into the special features of religious certainty. Yet at this point care should be taken not to confuse ideas of God or doctrines of His nature with the experiences which those expressions may seek to interpret. The two things are very closely related in practical life. At the same time, unless religious doctrines are to be merely authoritative statements
of one kind or another, religious experience must furnish both the material for those doctrines and the principles by which they may be evaluated. If this is the case then, doctrines concerning the nature of God are derived from and corrected according to the affirmations of religious certainty which are given in religious experience. In this sense religious certainty is prior to doctrines concerning the Divine Nature in that those doctrines take their rise from the affirmations of religious certainty. While this is the case two other facts should be indicated. In the first place, that doctrines do exert an influence over religious experience cannot be gainsaid. Especially the more specifically biblical doctrines have exerted a very decided influence upon the subsequent religious experience. And in the second place, the experiences which give rise to the central doctrines of religion are the very "stuff" of religious certainty. For this reason, in speaking about the nature of God in relation to certainty in religion, reference is made to those affirmations which arise immediately out of religious experience and become the materials of doctrine and the principles of judgment.

Further, as the purpose of this essay is not primarily theological perhaps it will suffice to suggest some of the affirmations concerning God's nature which have a special bearing upon the special features of religious certainty.

clarify what is meant when personality is applied to God.

After a survey of the field he concludes,

"We have, then, as historians, to note this fact: that, while the affirmation of personality in God has been a characteristic of Christian theological terminology since the third century of our era, the great majority of Christian theologians down to quite modern times have not affirmed in so many words the Personality of God." 7

Many reasons could be given for this fact, no doubt, but one of the most important ones is that the concept of personality was felt to be inadequate. Religious experience was reluctant to limit God by such an attribute. And, perhaps this reluctance was justifiable. Two collaborative processes, however, have made it possible for modern thinkers to attribute personality to God. On the one hand realism allied with psychological technique has helped to purge the idea of personality from many fanciful and romantic accretions. And, on the other hand, developing religious experience under the sway of the Christian revelation of God has made it more and more apparent that personality when used with reference to God is not so much an analogy from common experience as an ideal sensed in religious experience. Consequently, attributing personality to God no longer involves Him with the limitations which turned earlier thinkers away from the conception.

As Professor Webb suggests, when modern thinkers attribute personality to God what they mean is that God is such that personal relations with Him are possible. The idea of a

7. C.J. Webb Gifford Lectures p. 65.
8. Ibid p. 70.
personal God then, is to be distinguished from two extreme views. On the one hand it is to be distinguished from any conception of God as a principle or absolute existence which puts Him outside the ethical sphere. And on the other hand, there seems to be no point in attributing personality to God if by personality is meant simply human beings or social units. In other words, when personality is attributed to God it arises out of a special kind of personal relation, namely, that kind which befits creature and Creator.

If then, what men are confronted by in religious experience is personal in this sense, certainty in religion does not pertain to mere existence so much as it does to the quality of a character. Men are sure of God's character in a way somewhat analogous to the way they are sure of a friend's character. Yet, just because God is the Personality or ideal personality made concrete, all doubts which arise in the human sphere because human personality is partial and limited are banished. Moreover, because this certainty is concerned with personal character such categories as goodness, beauty, will and individuality take the place of hardness, cause and identity. The analogy of mechanism and organism is exchanged for that of personal intercourse. This is the truth of Ritschl's distinction between Judgements of existence and Judgements of value. In religion considerations of value take the place of considerations of existence which are the chief concern of science. Yet, if this distinction is carried too far injustice is done both to religion and to science. Dr. D. M. Edwards has pointed out
this fact very clearly in his book, *Christianity and Philosophy*. He says that
"psychologically, there is an important difference between the mental attitude of description and that of appreciation, between explanation and valuation, between the acknowledge­ment of fact and the judgment of approval." 9

But this distinction is both provisional and relative rather than metaphysically ultimate. For "Facts," he says, "enter consciousness through the door of selective interest, and our interests are controlled by our system of values." 10 On the other hand fact and value cannot be finally separated from each other for they are aspects of one universe. "They somehow blend and co-inhere in the unified system of reality". 11

To separate rigidly value and existence then involves an im­possible dualism and a correspondingly artificial view of Reality. In religion too much emphasis upon the distinction tends to make the religious life highly subjective and sheltered from legitimate criticism. On the other hand, in science extreme emphasis upon this distinction tends toward an extreme mechanism in which men are essentially strangers. Nevertheless, because in religion men's certainty pertains to the character of God who confronts men with Himself, questions of God's existence are taken for granted in the larger question of God's character and attitude toward men. As such, therefore, certainty in religion is to be distinguished from other kinds of certainty

10. Ibid p. 41.
11. Ibid p. 82.
in that it is evoked not by what is non-personal,(things) partially personal,(human beings) but by God who is Wholly Personal.

B. God's Personal Initiative. The Psalmist gave utterance to another one of the central affirmations of religion when he said: "Thou hast beset me behind and before, and laid thy hand upon me." Men have realized that God is seeking them, confronting them, actively revealing Himself to them. In this sense all religion is revelation and all revelation is Self-Revelation. Being confronted by the Divine Presence is no mere accident nor is it entirely dependent upon the initiative of the subject, but, God searches out men and 'lays His hand upon them.' Professor H. R. Mackintosh develops this idea at some length in his little book The Divine Initiative, suggesting that it is a distinctive feature of Christianity. In his own words: "What is distinctive of Christianity, in this regard, is the truth that in religion the initiative lies with God". And again, "Believers discover that God was long beforehand with them." Speaking of Jeremiah as an example of one in whose life the Divine Initiative was especially manifest Professor Mackintosh says, "God has come to the man and made on his mind an overwhelming impression. ... The initiative is with God; and precisely for that reason, because of their inner certainty

12. Psalm 139:5.
that the call is not self-produced illusion but an irresistible Divine summons, they can trust themselves to it implicitly. It is God who is responsible, not they."  

As Professor Mackintosh suggests, this Divine Initiative is evident in religious experience at its best. Perhaps it is most fully realized only within distinctly Christian experience. In Jesus Christ as the Son given to reveal God's nature, no doubt the initiative is most clearly evident. Nevertheless, God has not been without witness. Wherever and whenever religious experience is genuine in the sense of containing more than auto-suggestion or illusion, this fact of the Divine Initiative is surely present. Further, this givenness marks religious certainty off from other types of certainty. In a sense of course, all certainty is given in that something 'other' confronts subject. But, in no instance outside religion does the 'other' confront the subject of experience in the form of an 'Absolute' personal demand. Hence, genuine religious experience of believers throughout the centuries and especially since the advent of Christ, has carried with it the profound realization that certainty is not attained by any process of inference or of instruction, but is the free-gift of God Himself. Religious certainty, therefore is 'given' because God takes the initiative in confronting the lives and consciences of men. Thus, it is to be distinguished from certainty in science or philosophy.

in the sense that it is wonderfully and strangely 'given'.

C. The Need for God. The affirmation that God satisfies the deepest needs of human life is quite common in modern theological literature. One cannot reflect upon the affirmation long however, without seeing grave dangers in it. For example, God may be thought of as an instrument of man's self-realization, or as a logical inference from these primary human needs. Not withstanding these dangers, that God does satisfy the deepest needs of human life is another fact which religious experience amply substantiates. Augustine's proclamation, "O Lord Thou hast made us for Thyself, and our hearts have no rest until they rest in Thee," has been re-affirmed in the hearts of religious folk too often for its truth to be discounted merely because it may be subject to abuse. Unbelievers are haunted by their own unbelief because of the primary need of their souls for God. There is the yearning for a fuller life, a craving to escape from the suffering and transience of mundane existence, and the need for moral power and transformation. God alone can fill these deserted places in human

* To be sure religious certainty for Christians is bound up with Jesus Christ both as an historic figure and as the everlasting object of religious faith. However, as this essay is concerned more generally with religious certainty it will suffice at this point to suggest that in Christ God gave Himself. Thus, the certainty of Christian believers is 'given.' God's initiative becomes incarnate in Jesus Christ. In thus giving Himself He gives certainty to Christian believers. (ctd.)

and D. M. Edwards Christianity and Philosophy p. 42.
Belief thus becomes a matter of life or death, not merely in the physical but also in the moral and spiritual sense. Anything less than belief undermines the very foundations of life and destroys moral integrity. The conative "must" therefore which was seen to characterize actual certainty in other spheres reaches its final climax in the absoluteness of man's need for God.

This conception of religious knowledge at once puts it outside the ken of pure or disinterested reflection. Interest rather is fundamental both to the attainment of the knowledge and to the certainty concerning it. This point is made especially clear and emphatic in Principal Oman's essay contributed to the collection of essays bearing the title Science, Religion, and Reality. He says.

"The significant facts in any subject cannot be discerned without the right kind of interest, however great labour be devoted to the search for them: . . . Lack of interest, moreover, in a subject which deserves interest is itself bias and is sure to overlook or distort the facts to be considered." 18

Religious knowledge, instead of belonging to the sphere of the pure sciences or to other purely intellectual endeavour, belongs

*ctd. See Herrmann Communion with God. "Any doubts whether God does actually come near us in Jesus are removed from the Christian's mind by his experience that as soon as he understands this Man as the message of God to him, he finds a joy in bowing to what is inevitable, and in self-sacrifice for the sake of others." P. 82 English translation, 2nd. German ed. 16. Mackintosh op. cit., p. 23.
18. Subject of the Essay The Sphere of Religion pp. 262-263. This view is enlarged upon somewhat in Oman's larger work, Natural and the Supernatural pp. 3-3.
to the sphere of what Tennant calls "Knowledge for the conduct of life."

If, however, religious knowledge grows out of the will to live and to live with increasing satisfaction, is it essentially different from that with which the sciences deal? Dr. Tennant concludes that religious knowledge and other knowledge for the conduct of life are not essentially different. Thus he says:

"The probability which is the guide of science turns out to be ultimately the same in logical and psychological nature as that which is the guide of life and of reasonable prudence. The faith involved in theism such as is based on cumulative teleological considerations is essentially the same as that belief in the world's rationality which is presupposed by the logic and method of science, and theistic belief is but a continuation, by extrapolation, or through points representing further observations, of the curve of knowledge which natural science has constructed." 19

At the same time, Tennant grants that religious knowledge is conditioned "by further antecedent belief over and above such as is indispensable for knowledge of the physical," 20 and that "religious postulates are not so inevitable, prima facie, as those of physical science." 21 None the less, the venture of faith necessary in science and the venture of faith necessary in religion are essentially the same excepting in the matter of degree. Further, while the postulates of religion are not so evident, they are justifiable in the same way and in relation to those made by the sciences. In other words, religious

knowledge has no unique claim of being valid, but is just a part of the continuous and co-operative effort of the various sciences to attain knowledge for the conduct of life.

At the first reading it might seem as if this inference were self-evident, but there are other facts to be considered. (1) Most important among these perhaps, is the fact that in the sciences men seek to know the actual world in order to control events and forces in it, whereas in religion the desire to know God is identified with the desire to be controlled by Him. Faith in religion then is not an extension of the programme of control into the divine sphere, but a personal confidence that 'He is able to keep that which is entrusted unto Him'. (2) Further, there is an ultimacy about the need for God and a knowledge of His nature which gives an element of ultimacy to religious knowledge. In the satisfaction of needs which are not peculiarly religious, each attainment carries with it a further need to be satisfied. This is not true in the religious sphere. The need for God may not be completely satisfied but that incompleteness never brings up the need for anything beyond God Himself. Clement C. J. Webb contends that this ultimacy is one of the universal characteristics of religion. He says, "I believe it to be true that it belongs to the essence of Religion, even among those to whom it would be absurd to impute a capacity for abstraction such as is necessary for talking of the universe, totum quod sumus et in quo sumus, of our experience as a whole, of ultimate reality, or the like, that men should feel themselves to be, if I may so put it, concerned with the innermost heart of things or (to use an alternative
metaphor) with what is back of everything; and concerned with this not as something remote and indifferent, but rather as something which disturbs and affects us in the depths of our being."

(3) Also, the intimacy of man's relation with God which grows out of God's personal nature and initiative makes religious knowledge much more like knowledge of other selves than of objects such as science seeks to know. It is apparent, therefore, that simply because religious knowledge arises from the primal needs of life and is concerned with the actual world in which those needs are satisfied is no reason to conclude that religious knowledge is just an aspect of other presumptive knowledge. Yet, while distinguishing these two kinds of knowing the common and fundamental root of all actual knowledge should not be ignored. Rather, it should be kept in mind that the need for God and the knowledge which issues from it is implied in the very structure of life and experience which is the root of all knowing.

(2) Relation between Man and God.

A. Faith. Especially since the Reformers faith has been recognized as essential to the relation between man and God. But, as Professor Baillie urges, faith is not so much a matter of assent to creedal statements as it is a matter of the whole personality focused in a kind of trust. He says,

23. Mr. Webb also calls attention to this characteristic of religion. See Ibid p. 15.
"Rather it is out of a certain kind of living, and a certain attentiveness to the deeper significance of such living, that there grows up in our hearts a loyal and steadfast trust in that Reality within which our lives are set, and then we see that within such trust is latently and germinally contained an acceptance (let us say) that God exists and that he is good." 1

Faith, then, is primarily trust in persons and in the powers of personal life, and as such must be distinguished from the syllogical trust which lies behind other kinds of presumptive knowing. Trust in persons or in God as The Person is supremely moral whereas trust in an hypothesis may be a-moral. Further, in faith as a personal trust there are qualities of feeling present which arise only from the rapport between persons.

In his recent book on Christ and the World of Thought, Professor Daniel Lamont lays considerable stress upon this faith-relation between the believer and God. As an attitude of the soul he contrasts it with what he calls the "observer-attitude" which science employs. According to the "observer-attitude" man stands in a "dark room" and views events in the world as a spectator. In faith, however, man accepts what comes to him and commits himself to it by a personal decision. To use the words of Professor Lamont, "Faith is an energy of the whole soul." 2 Moreover, as Professor Mackintosh insists faith is not a particular kind of religious virtue like hope or kindness, but is the basic "stuff" from which virtues of this

1. The Interpretation of Religion p. 377
kind are derived. Hence, the writer of Hebrews was very near the heart of the matter when he wrote, "without faith it is impossible to please God."

Any discussion of faith raises the question: is faith exercised by the believer or is it given by God Himself? Especially in theological circles where the influence of Luther and the Reformers has been felt, it has been insisted that faith is not exercised, but is given by God. Herrmann, for example says, "We must first do away with the claim that faith, like every other means whereby men seek to come to God, is a human work." Professor Lamont seems to be in agreement with this position when he says, "Standing before God is therefore not something which we can do through any innate capacity of our own. No power but the spirit of God can bring us into this attitude."

On the other hand, there have been many Christian thinkers who regarded faith as something exercised by believers. Men were exhorted to have faith in God, and such an exhortation could mean nothing if man had to wait until God gave him faith. Indeed, the belief that man must do something if he is to enter into a satisfactory relation with God is deep-rooted in the religious consciousness. Yet, this belief is repugnant to some because they look upon the exercise of faith as a meritorious act which entitles one to a claim upon God. But is this a

necessary inference? If faith is moral trust in God, then it is entirely above considerations of merit or demerit. In the sphere of personal relations, men do not consider that those who trust them are their debtors. On the contrary, faith is both given and exercised at the same time. The presence of another person brings with it an element of faith. Response to this presence is also an act of faith. The two are simply woven together in the fabric of experience. Furthermore, if God takes the initiative in religious experience and confronts the souls of men, faith is given in the very act wherein God initiates experience of Himself. Of course, without this original turning toward man, faith in God would be impossible, but given that personal initiative, faith may be exercised in response to it. Hence an exhortation to have faith in God is simply an exhortation to respond to the active presence of God as He comes to the experiences of men. This does not dissolve the paradox of faith given and faith exercised, but it does show how the logic of experience substantiates the paradox.

If then, faith is so central in religion, religious certainty presupposes this faithfulness both as an exercise of the believer and a gift which comes in the Divine Presence. Religious experience in which assurance of God's character is given presupposes and is mingled with faith. In this respect religious certainty is to be distinguished from certainty in
science which is attained by way of a detached and disinterested relation.

B. Worship - cultivation of a more satisfactory relation with God. In the previous chapter it was suggested that religion is primarily concerned with the cultivation of a more satisfactory relation with God. At least in the higher stages of development worship or communion with God is fundamental to religion. Nor is worship merely the cultivation of certain life-attitudes or simply the development of character, however important these functions may be. The worshipper is really worshipping God when he is alive to the impact of a great objective striving that claims him with an irrevocable claim; when he is evoked to wonder by the Great Beyond that is within, and thrilled with a sense of mystery and dependence.7 Bernard Meland makes a pertinent suggestion regarding this importance of worship in a study of religion. He says that,

"Modern theologians need to become worshippers in this first-hand, venturesome sense, where, in the solitary presence of cosmic environings, they may be stirred personally with the sense of wonder and impelled toward complete devotion to values there discerned . . . Theologians must become worshippers first, and interpreters second." 8

Thus, because religion is concerned with coming into a more satisfactory relation with God and because it is from that relation that men derive their certainty of God's nature

8. Ibid p. 201.
religious certainty cannot be disassociated from the normal forms and facts of religious worship. Further, there is a sharing of confidences which often takes place between worshippers that leads to real certainty in religion. At any rate believers have found by experience that their certainties grow in strength and effectiveness in the atmosphere of worship.

(3) The Capacity for Religious Experience.

A. The Foundations of Religious Belief in the Human Soul

At one time it was argued that the human soul possessed a special and unique capacity to perceive the Divine. This idea having been largely discredited, however, it became necessary for the exponents of religion to show to what faculty or faculties the Divine Presence addressed itself. For Hegel and the Rationalists religious beliefs were based upon rational insight. Christianity thus became for Hegel the true Philosophy. It made its appeal primarily to the reason. The Romanticists, however, following Schleiermacher's trend of thinking identified the faculty of religious perception more closely with feeling. William James and those of a more practical turn of mind, on the other hand, insisted that religious belief arises from the conative aspect of experience, while Ritschl, Höffding and others have held that men come into contact with God through the apprehension of value. Still more recently, theologians seeing an element of truth in each of these positions have

suggested that God is perceived with all of the human faculties working in concentrated harmony.

Principal John Oman in treating these various ideas of the seat of religion in the human soul makes this observation:

"The difference in their opinions about the seat of religion in the soul is as complete as the possibilities admit, seeing that there is only intellect, feeling, or will to which it could be ascribed. But they are at one in seeking religion where they think they discern the creative element in experience, so that their divergence is not first about religion, but about how ultimate reality touches the human spirit, because for all alike the intercourse with the universe which creates all our experience is, so to speak, a religious intercourse. . . . All these theories, therefore, though ascribing radically different origins to religion in the mind, agree in seeking them where reality manifests itself to us." 10

According to the view set forth in this essay, all experience involves all of man's personality and especially in religion is the harmony of these faculties most completely and effectively unified. In religion the soul of man is stirred to its most profound depths. Not a single aspect of it goes untouched by the Divine Presence. But while this is the case, there is one faculty of apprehension and type of experience to which God characteristically addresses Himself. God lays His hand on the human spirit in the form of an absolute ethical claim and His nature is revealed through values which are apprehended by the ethical consciousness. In the words of Herrmann, "Neither in what is opposed to duty, nor in what is indifferent to it can we meet with God, or do we desire to do

Since the time of Kant this theory of religious perception has been gaining strength. Several modern theologians have attempted to defend the theistic position by means of it. For example, the late Dr. Hastings Rashdall presents the following argument for theism:

"The judgment 'to love is better than to hate' has a meaning complete in itself, which contains no reference whatever to any theological presupposition. It is a judgment which is, and which may intelligibly be, made by people of all religions or of none." 12

Such a judgment is self-evident and immediate, requiring no justification whatsoever outside itself. But this judgment in order to be valid must be objective and in order to be objective must be in a mind. Yet, because it is absolute and infallible, it could not issue from finite human minds. Therefore, if this ethical judgment is what it is 'given' to be in universal moral experience, there must be a personal God in whose mind the judgment is objective. In other words, theism gives ontological justification to the particular judgments of moral value. As a belief it follows from the absolute and self-evident judgment of the moral consciousness. The belief guarantees objectivity to ethical judgments which could not be what they are were there no such objectivity.

In many ways this argument represents the nearest to a conclusive argument for the existence of God that has been

given. Nor is there any reason to disparage its influence over serious people of this generation. Yet the views of certain philosophers like Hartmann and Walter Lippmann make it clear that the theistic belief does not follow necessarily from the moral experience. \(^\text{13}\) For Hartmann religious theism instead of giving support to the ethical life actually corrupts it, while Lippmann and others recognize the function of religious beliefs in morality, but are unable to regard that as any reason for the truth of religious beliefs. Even though religious beliefs have served to deepen ethical life in the past, since those beliefs are no longer able to convince men of their truth, the ethical life must simply become accustomed to get along without them.

In this respect, both Lippmann and Hartmann have stressed an important fact, namely, that the beliefs of religion cannot be proved upon any extra-religious grounds. \(^\text{14}\) From the point of view of pure argument the most that could be inferred from the ethical judgment cited by Rashdall is that the theistic belief is highly probable. Further conclusiveness which is involved in the argument is probably derived from the fact that something of God's nature is actually 'given' in that judgment. His nature is not inferred from the objectiveness of the judgment, but the objectiveness of the judgment is

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given in the objectiveness of God as He thus confronts the human conscience. Hence, theistic belief is not necessarily inferred from the objective nature of that judgment, but is given in it. This belief, therefore, requires no more justification than the judgment itself. On the contrary, unless it were thus given, no kind of inference from other grounds could furnish more than probable grounds for believing it.

Rashdall goes on to point out a fact which is pertinent here. While arguing that the apprehension of religious truth does not depend upon any special organ of knowledge but upon the "wholly unique faculty of immediately discerning values or pronouncing moral judgments", he goes on to add that this faculty is not infallible but depends upon both training and experience. None the less, if this faculty is not trusted there is no reason to trust any judgment at all. In other words, in the judgments of value and ethical claims with which men are confronted actual knowledge reaches its highest degree of certainty. These claims come from beyond. They may cut across all desires, previous plans, and habits of action. Obedience to them often seems ridiculous in the light of conventions. Hence the possibility of self-induced illusion or "wish-thinking" is reduced to a minimum. Further, these claims are immediately recognized to be valid beyond any need for proof other than their own presence as demands.

In accepting this view of man's capacity for religious knowledge there are some dangers which should be guarded against. (1) The first one has already been mentioned. It is the idea that the certainties of religion are derived or inferred from the certainties of the moral life. In so far as the moral judgment affords religious knowledge that knowledge is given by God in and through that judgment. Thus, the experience is not purely moral in the narrower sense of the term, but is fundamentally religious. Just because God speaks in and through the apprehension of ethical values is no reason to identify religious experience with moral experience in the narrow sense of secular or legalistic morality. The aesthetic object is apprehended at least principally by the physical senses, but that does not imply that the experience of beauty is the same as the experience of any mundane object.

(2) In the second place religious experience should not be confined merely to experience in which God first confronts the human spirit. The Saints bear testimony to the genuineness of such experiences as "delight in the Lord." Contemplation of God's Majesty and His Glory likewise, is surely within the scope of religious experience.

(3) Such a view of the way God confronts the human spirit may also lead to a radical individualism which ignores the

17. See Professor Baillie's treatment of this point, op. cit., pp. 346-351.
fact that participation in the religious fellowship is fundamental to religious experience. Obedience to the claims of God upon the individual human soul can have no concrete reality apart from human needs and acceptance of the challenge which those needs present. "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me."

If men are confronted by God in the form of an ethical claim, religious certainty is given in this very claim and the way it comes, God turns toward man and imparts unto him certain knowledge of Himself in the very act of confronting man with an inexorable claim. Certainty is strangely and wonderfully given, yet not to the passive spectator but to the morally earnest, the 'pure in heart'.

CONDITIONS OF RELIGIOUS CERTAINTY

These special features of religious certainty involve a series of definite conditions which must be met before there can be any real certainty.

(1) Foremost among these perhaps is personal faith or trust in God. In a sense this is given when God turns to a person, but it must be met with the appropriate response. As a condition of religious certainty then, faith as an exercise of the believer is required. Unless there is this reciprocity of faith, as in the case of human relationships, the relation

between God and man is not effective in producing certainty. Further, it is only by living in faith already given that increased faith can be expected. Thus, when the Disciples said, "we believe; help thou our unbelief", they described the higher logic of religious experience.

(2) If the certainties of religion are given in the experience of ethical claim and the apprehension of values, religious certainty is really morally conditioned. Religious experience has often borne testimony to this fact. Men of faith have realized that it is the 'pure in heart' who see God. Moreover, any attempt to reason away the ethical imperatives or put in their place some product of "wish-thinking" puts one outside the sphere in which God comes to men. Such intellectual insincerity has not been infrequent in the history of religious development, but it has always been regarded as a dangerous kind of sin. Sincere and courageous thinking then, with respect to the fundamental values of life and the claims of the moral consciousness is a necessary condition of religious certainty. Or in the words of Herrmann, "It is only when we share these moral activities that we first begin to live in that world in which we can become aware of our God."

To live perpetually in a world of fancy or of "wish-creation" is to live in an artificial world; a world in which God refuses to reveal Himself. In other words, God turns to men in the ethical claims laid upon them. If men refuse to

come to terms with these claims, naturally the certainty concerning Himself given therein will not be realized. Further, these claims must be met with a sincere and uninhibited emotional response. As Principal Oman puts it, a right interest is required. Devotion to the Object of religious experience, therefore, becomes a condition of religious certainty. As in human relations love is the basis of understanding so also in the relation with God. Only those who 'love much' can expect the certainty which comes only to those of the inner circle of devoted believers.

(3) Moreover, if worship and participation in the fellowship of believers is fundamental to religious certainty, surely any attempt to find certainty apart from this participation is destined to fail. At the same time, such an assertion must be made with the utmost of care, for the history of ecclesiasticism offers many evidences of how it may be abused. None the less, that an assertion of truth may lend itself to abuse is no reason either to declare it false or to regard it as unimportant. Devoted religious folk have found by experience that in worship and in fellowship each one's faith is strengthened by the other and by God who works mightily among His people. If then, one is to be certain in religion this experience-tested fact must not be overlooked. One must open his soul to the searching, and often condemning Spirit of God as that Spirit is manifest in public and private worship. For this no substitute of intellectual ability or moral endeavour seems quite adequate.
CHAPTER IX

CONCLUSION

The conclusion as to how and why the modern scientific attitude has led to uncertainty in religion may be set down briefly in this manner:

(1) In response to the need for a comprehensive world-view modern persons have universalized the postulates of science into a definite system of metaphysical dogmas. But according to this world-view, the Object of religious experience can only be regarded as unreal. Thus, by pre-judging the Object of religious experience to be unreal, the awareness of that Object has become so dimmed and mingled with suspicion that religious certainty is almost impossible.

(2) Following the way suggested by the successes of scientific inquiry in other fields, students of religion have endeavoured to understand the Bible more satisfactorily. But the personal awareness of God which alone can guide and

give authority to the results of biblical criticism has been so dimmed that biblical criticism has proved devastating to religious certainty.

(3) In a way common to scientific procedure men have attempted to establish the validity of religious beliefs by examining facts which lie outside the sphere of religious experience. The failure of this attempt, therefore, has led many to doubt that real certainty in religion is possible for the honest and intelligent seeker.

(4) The exemplary kind of certainty obtainable within the sphere of the pure sciences has so impressed persons of today that any other kind of certainty seems quite inadequate. After failing to secure that exemplary kind of certainty concerning the central verities of religion they have concluded that the quest for certainty in religion is a false quest.

Similarly, in principle the modern scientific attitude denies that any kind of truth is morally conditioned. On the contrary, every truth should appear equally obvious to all possible unbiased observers. Hence, 'the pure in heart' can no more expect to see and know God than anyone else. Nor is it in accord with the scientific attitude that those who 'lovemuch' should obtain a special and authentic knowledge of God. Quite on the contrary, this love is opposed
to the disinterestedness which conditions reliable knowledge of Reality. In this manner then, the scientific attitude tends to negate the ethical conditions of religious certainty, and put the quest for certainty outside the sphere of love and moral earnestness in which God naturally turns to men. Thus, in seeking certainty outside this special sphere, modern persons stand in no position to apprehend God's hand upon them and to enjoy the certainty which that experience brings with it.

(5) In general, the very principles, habits of thought, presuppositions and emotional moods of the modern scientific attitude have contrived to negate the necessary conditions of religious certainty. Detached observation thus, is almost exactly opposed to that faithful participation which characterizes religion. The first is impersonal, emotionally truncated, and supremely intellectualistic; the second glows with personal warmth and presupposes an uninhibited emotional response. Detached observation sets out from a half-suspicion, whereas, trustful surrender to what presents itself from the Beyond sets out from a child-like confidence that involves self-committal. Thus, when modern persons insist that the scientific attitude is the only legitimate attitude they condemn that personal faith which conditions religious certainty.
Finally, by regarding the Object of religious devotion as subjective and unreal, worship likewise has become empty and useless. Even the purely psychological value of it is negated as soon as worshipers realize that worship is merely a psychological exercise or a lesson in auto-suggestion. In this manner then, private as well as public worship along with the other conditions of religious certainty are negated and men find themselves 'haunted by their unbelief'.

This conclusion suggests some definite lines along which advocates of religion may work in order to commend the religious way of life to persons of this generation.

1. In the first place, care should be taken to show the inadequacies of the scientific attitude as a comprehensive world-view.

2. Secondly, if biblical criticism had constant recourse to God's presence as He comes in religious experience, the devastating influence of it would be exchanged for a fuller understanding and appropriation of God's Word. In short, this certainty given in religious experience would become the principle of biblical criticism.

3. Thirdly, by realizing the limits within which he must work the religious leader may avoid the danger of claiming to do more than he can actually accomplish. Thus, by recognizing that the verities of religion cannot be
established upon or verified by reference to facts which lie outside the sphere of religious experience, many of the effects produced by the failure of such an attempt may be mitigated. Also, if it is clearly seen that any attempt to prove religious beliefs in this way is liable to fail, the evidence from non-religious sources which is available may be used more effectively to collaborate with what is given in religious experience.

(4) Fourthly, the apologist may point out that religious certainty is actual certainty and that the exemplary kind which characterizes pure science is neither possible or desirable in religion. Further, he may show that the ontological problems which are raised in every sphere of thinking and research, are finally formulated with respect to the vision of Ultimate Reality vouchsafed unto the Seers of religion and that no certainty of the actual world can be greater than the religious certainty which stands at the centre of it.

(5) And in the fifth place, the advocate of religion may attempt to persuade men to fulfil the conditions of religious certainty. Faithfulness, intellectual courage, ethical earnestness and devotion to that which comes from Beyond; these terms describe the sphere in which God turns toward men and gives of Himself to them. The advocate of religion
may thus invite men to enter that sphere and he may confidently hope that God will so lay His hand upon them that they may truly believe, and believing may have life in His Name.
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