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RELIGION AND SOCIAL WORK

ALAN R. GRUBER*

During 1964, there were a number of short articles, editorials and letters to the editor in the *A.S.A. Journal* questioning the compatability of religion and social work, especially the psycho-analytic variety. This paper is written in response to those questions.

It has been proposed that every goal of social work is stated in either the Old or New Testaments.[1] Social work began with the Church long before the Elizabethan Poor Laws of 1601, and yet in contemporary society there seems to be many conflicts between the two.

The primary conflict appears to be based on the fact that, to a great extent, social work treatment is based on the theory of psychoanalysis which, obviously, is directly related to its creator, Sigmund Freud. He stated the following in his *New Introductory Lectures to Psycho-analysis:*

> Religious doctrines carry with them the stamp of the times in which they originated, the ignorant childhood days of the human race. Its consolations deserve no trust. Experience teaches us that the world is not a nursery. The ethical commands, to which religion seeks to lend its weight, require some other foundation instead, for human society cannot do without them, and it is dangerous to link up obedience to them with religious belief.[2]

In *Civilization and Its Discontents,*[3] Freud calls religion "patently infantile" and "incongruous with reality." Quite obviously, he believed that there was very little of value in religion and the negative aspects far outweighed the positive. He did, however, recognize some of the latter such as the fact that religion and subsequent submission to God may save some people from neurosis. As a result of these ideas, there has been a significant disparity between religion and psycho-analytic thought based on the fact that Freud, as an individual, opposed the acceptance of religious beliefs.

Freud, himself, however, anticipated the fact that there would be some who would attack his brainchild, psycho-analysis, on the basis of his personal feelings about religion. He wrote in *The Future of An Illusion:*

> . . . it cannot be denied that psycho-analysis is my creation, and it has met with plenty of mistrust and ill-will. If I now come forward with such displeasing pronouncements [making reference to his renunciation of religion], people will be only too ready to make a displacement from my person to psycho-analysis. "Now we see," they will say, "where psycho-analysis leads to. The mask has fallen; it leads to a denial of God and of a moral ideal, as we always suspected. To keep us from this discovery we have been deluded into thinking that psycho-analysis has no *weltanschauug* [world-view—an integrated view of the world] and never can construct one."
>
> An outcry of this kind will surely be disagreeable to me on account of my many fellow-workers, some of whom do not by any means share my attitude to the problems of religion. But psycho-analysis has already weathered many storms and now it must brave this fresh one. In point of fact psycho-analysis is a method of research.[4]

It can be seen, then, that, even according to Freud, himself, there is nothing within the framework of psycho-analysis which would cause any great disparity between it and religion. The fact is that, in an earlier section of the same book, Freud, though negatively, pointed out some of the value of religious belief and commitment. He states that ". . . religious ideas have arisen from . . . the necessity of defending oneself against the crushingly superior force of nature."[5]

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It may be said that, in essence, the argument against psycho-analysis by some religious leaders and organizations is not based on an understanding of the theory itself but rather are arguments founded on history and statistics.

Historically, those who would attack the value of psycho-analysis point out that it has been at odds with the Church almost from the day of its creation. Church leaders, since its beginning, have fought against its acceptance to the point that we can validly consider the opposition to, in large part, be adhering to tradition rather than conviction. It seems to this writer, that those who oppose the theory of psycho-analysis purely on religious grounds do not, in fact, understand that which they are condemning.

Statistically, we can state that most psycho-analysts are "non-believers" and, perhaps, even opposed to religion in the tradition of Freud. The religionists, if you will point out that those analysts who are not overtly opposed to religion at least remain silent but generally do not accept the doctrine of divine healing through a direct work of God. To state, however, that psycho-analysis and religion are not amenable because most psycho-analysts are not religious is as fallacious as stating that evangelical Christianity and science is not amenable because most scientists are not evangelical Christians.

There are, however, many other problems in the social work-religion relationship. Clergymen were originally, almost the sole guardians of social welfare until about the end of World War I. Ministers, especially, found themselves, during this period, in the position of being replaced by the new social work profession and an element of estrangement between the two professions appeared.

The clergy resented the irreverence with which they felt social workers, in general, treated religion and the estrangement became even more intense as it appeared that this new profession functioned as if it were the sole authority and possessors of all wisdom pertaining to the welfare field. As social work became more solidly established it began to attack the long established methods and techniques of the clergy and this further reinforced the schism.

Social workers, at the same time, were attempting to solidify their position in the community as knowledgeable, skilled individuals who were capable of dealing with people and the amelioration of their problems. Ministers appeared to them as both unknowledgeable and unappreciative of social work principles and seemed to be the manifestation of the very thing from which they sought emancipation.

In the years since World War I many changes have occurred in both professions. In relation to the clergy, they are, at present, neither unacquainted nor unsympathetic with scientific procedure and principles. There has been a significant improvement in the communications between the professions and now that social work has reached a higher level of maturity it is no longer threatened by other disciplines and can recognize the contributions that these disciplines, including religion, are able to make to it.

It would, however, be a gross error to state that there are no longer any problems which exist in the relationship between the two professions. There is still a great deal of misunderstanding and, in some circles, even overt hostility on the part of each toward the other. It will be necessary for both professions to make a concerted effort at reconciliation if a further improvement in the relationship is to take place.

Dr. Haskell M. Miller, Professor of Social Ethics at Wesley Theological Seminary, has listed some of the problems which he feels still exist between the professions and are continuing to cause the misunderstandings. He states that many social workers perceive ministers as:

1. Having uncertain educational backgrounds. [which they do]
2. Being inclined to be carelessly sentimental in dealing with needs.
3. Relying too much on spiritual exhortation rather than on scientific skills and insights.
4. Making legalistic, judgmental, authoritarian approaches to people in ways that are dangerous and often damaging.
5. Disagreeing radically among themselves as to what are the basic criteria and essential emphases of religion.
6. Failing both in the matter of making adequate diagnostic distinctions between the types of persons and problems coming to them and in maintaining a disciplined recognition of the limitations in their individual skills and abilities to help people.6

On the other side of the coin, ministers, also, have distortions in their perception of social workers and Miller goes on to identify some of these:

1. Being too strictly humanistic in their point of view. [The preamble of the National Association of Social Workers' Code of Ethics makes reference to humanistic values in social work, however, makes no mention, whatsoever, of any spiritual criteria.]
2. Having an overly simplified and overly optimistic view of human nature.
3. Failing to take God, sin, salvation, and the spiritual side of reality sufficiently into account.
4. Seeking to substitute social adjustment for the more profound reorientations of life which people need.
5. Trying to eliminate the symptoms of guilt in persons without getting at the guilt itself and the reasons for it.
6. Ignoring the fact that people have religious needs and that many of their problems stem from deprivation in the area of these needs.7

Miller feels that the roots of the difference in opinion fall into four categories: (1) differences in interpretation and methods, (2) differences in the approach to the problems of guilt, (3) differences relating to the recognition of the necessity of maintaining safeguards and precautions for the protection of the integrity and worth of the client-parishioner, and (4) differences regarding the degree of certainty concerning the criteria of religious judgment as it pertains to the client-parishioner.8

Regarding the first, differences in interpretation and methods, although both professions are interested in helping people to function as adequately as possible, the approach of each differs at a very fundamental point. The social worker attempts to help the individual through understanding and accepting his problem and, as a result, build on his own strengths and resources. The clergyman, on the other hand, attempts

to work toward a supernatural amelioration of the problem with the individual's submission to God being the primary source of solution.

In relation to problems pertaining to guilt there are also many points at which differences arise. Many social workers feel that religion, in itself, creates guilt which often will go on to disorganize and immobilize the individual. The social worker's role, when faced with a client manifesting extreme guilt feelings, is to help him understand the source of the feelings, what is involved in them, and how to handle the feelings in a constructive manner. To do this, the social worker must maintain a non-judgmental, accepting attitude toward the client neither condoning nor rejecting the behavior, values, etc. which may be an integral part of the problem. The clergyman, on the other hand, by virtue of the fact that he represents the church, cannot condone or even accept certain forms of behavior. The role of the clergyman in pastoral counseling would be to help the person realize that his guilt (unless it is neurotic in origin) is reasonable and a consequence of that person having broken a law of God. He would then lead his parishioner to the point where he could ask God for forgiveness and, as a result of that act, be relieved of not only the feelings but the guilt itself. Carroll A. Wise, author of a well-known text in pastoral counseling has stated the following:

> The minister traditionally has felt that it is a part of his task to interpret the laws of God and to lead people into a feeling of guilt where they have broken these laws. The minister has attempted to do this either by techniques of condemnation or by the opposite technique of leading people into a deeper insight into the laws of God and the realities of the human life. This second approach assumes that God himself pronounces judgment in the processes of life and the task of the minister is to help people interpret and gain insight into their own experience.9

The third area of differences which Miller pointed to was the differences relating to the recognition of the necessity to maintain safeguards and precautions for the protection of the integrity and worth of the client-parishioner. In this area of conflict the problem is not so much what the clergyman does but rather what the social worker thinks the clergyman will do. Social workers are trained to avoid unnecessary dependency on the part of their clients; they will not intrude in the lives of people unless they have permission or it is of vital necessity such as in protective or correctional social work. They also are leary of making referrals to persons of unknown or dubious competency. They recognize that most clergymen certainly mean well but social workers are generally fearful that the clergy is not as concerned about these principles as they are. It would seem reasonable that since there are no widely accepted standards of preparation for clergymen and no official policing body within their profession, these fears are well-founded.

Lastly, concerning the criteria of religious judgment, social workers deal with people on the basis of need, usually without regard for religious background. They believe in the client's right of self-determination and, as a result, will not discuss religious values, doctrine, dogma, practice, standards, etc. which often are part of the very foundation of a person's life, unless discussion of these topics is necessary during the treatment process. It is not so easy, however, for clergymen to be as concerned with the concept of self-determination. By virtue of their profession they are often rigid, restricted and authoritarion in their approach. They are much more prone to impose their particular orientation to religion upon their parishioner and as part of their interaction invoke value judgments and specific direction.

It would be a gross mistake to assume that all social workers hold these opinions about the clergy or to assume that there are not many clergymen who overcome these problems in their pastoral ministry. The important point is, however, that these problems in the relationship are widespread and serve to create even further problems in the working relationship between the two professions and in the implementation of the skills of both professions in the application of their own techniques.

As a result of the problems between the professionals, then, we see the existence of what appears to be an impassable barrier in the relationship of the disciplines themselves. The author believes that these barriers are based almost entirely on ignorance. Social workers would do well to understand religion and theology and the clergy would do equally as well to understand social work and its psychoanalytic foundations.

It seems to be an age-old tradition within religious circles that determines whatever is different is automatically bad. Christians, in general, would do well to understand that which is new and use it to further their understanding of God, religion and the world rather than, as so often in the past, hiding their heads in the sand. It would seem that the best way to change the situation, then, would be for the members of both professions to make a concerted effort at establishing ongoing and meaningful relationships with each other. Continued name-calling and/or denial of each other's presence will never resolve the situation. Hopefully, as a result of meaningful interaction, both disciplines would increase their effectiveness and better serve both God and man.

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A CHRISTIAN VIEW OF THE COMPUTER REVOLUTION

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Revolution is a strong word—one which implies turbulence, upheaval, force, drastic change. It is sometimes applied to wars and sometimes to drastic socio-economic changes. It is currently being applied in the latter sense to a development made possible by the modern electronic digital computer. Let us examine the computer revolution (or control revolution, or cybernation revolution) in order to assess its effects upon our society, present and future.

The industrial revolution, with its steadily evolving automatic machinery had the effect of releasing man from a great deal of physical labor. It was claimed that using men to control the machines was a more human use of human beings. This was certainly so; but now electronic computers have provided the means for more precise machine control than man is capable of performing. One effect of the computer revolution will be to release man from a great deal of such mental labor. In much the same way as machines are amplifiers of man's muscle, computers are amplifiers of man's brain. Perhaps a more important effect will be the provision for control calculations too complicated and too long for man to perform, thus making possible new types of industrial processes.

To understand these effects, we need to examine the computer in more detail. While it is true that a computer is a machine which can do arithmetic very rapidly, this is far from the whole truth. The fastest present day machines can do arithmetic about one hundred million (10^8) times as fast as a man with pencil and paper or about 10 million (10^7) times as fast as a man with an electric desk calculator. No other socio-economic revolution has ever been caused by a technological change of such vast proportions. Whole new effects are produced by so vast a change. For example, nuclear physicists are now attacking problems requiring as much as one hour of calculation on the fastest machines. This is equivalent to about 10,000 man-years of pencil and paper work. Obviously such a problem could not have been attacked without the new computer technology. Space flight represents another such problem for a rather different reason. It is quite possible for men to calculate satellite orbits and the necessary thrust to achieve them, but to do so in the very short time available before, for example, an orbit becomes hopelessly parabolic requires an electronic computer.

Another important new effect of the new computer technology is the development of computer programs which do things previously regarded as belonging solely in the realm of human intelligence. Some examples are checkers playing programs, chess playing programs, a program (called STUDENT) which can solve a certain class of algebra word problems and a program (called SAINT) which can find the indefinite integrals of certain functions. (SAINT made a B on the M.I.T.

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freshman calculus examination.) These developments have sparked a debate as to whether or not computers can think. This debate is really the subject of another discussion, but a few remarks can be made. The debate cannot be resolved primarily because no generally acceptable definition of "thinking" has been formulated. While it is true that computers are being made to do quite useful tasks previously done only by humans who achieved satisfaction from their efforts, careful analysis will show that these tasks are all reducible to syntactic manipulation of symbols. However "thinking" is defined, it must involve more than this. Furthermore, man's creation in the image of God surely implies mental abilities not capable of reproduction by man himself in an assortment of transistors and diodes.

We must turn now from the detailed effects of the new computer technology to that composite effect called the computer revolution. Many jobs, presently held by men and women have been taken over by computers and automatic machinery. Completely or partially automated production facilities are envisaged in many industries such as steel, textiles, printing, and baking. Indeed some almost completely automated plants exist already. The computer controlled machinery can do a better job and do it more efficiently. Computers are assuming bookkeeping and inventory control tasks in many businesses. Using a computer, a business executive can have immediate instead of days or week old inventory information. It is difficult to assess the ultimate effect of these incipient developments. But, responsible people (and this had better include Christian people) must attempt the assessment because the ultimate effect has the potential of catastrophe if not properly anticipated.

Clearly, some new human jobs are being created because of the computer revolution, but equally clearly, many old jobs are disappearing. Some responsible people including computer consultants, scientists, labor leaders, clergymen, sociologists, economists, and others are predicting that jobs will disappear in such large numbers that the only solution to the resulting socio-economic problem will be a guaranteed, government supplied income for each citizen as a matter of right. Christian society must not accept this solution without asking some fundamental questions. The solution assumes that there is no basic relationship between a man's job (or his contribution to society) and his dignity (or psychological and spiritual well being) other than that implied by his wages. The Bible has something important to say about this. The Bible teaches that man was created in the image of God for the purpose of having fellowship with God. God instructed man to use all of the rest of creation for the good of man. Interpreted at the level of all of man, this would imply God's blessing upon the use of machines to release man from physical labor and the use of computers to release man from mental labor. This is true; but it must also be interpreted at the level of each individual man, which implies that as a part of fulfilling his intended relationship with God each man must make a contribution to society. Unfortunately most people will not contribute to society unless they are motivated by need for an income or by force. Certainly the need for an income is the more preferable motivation. Thus, society must encourage the development of jobs which provide for the really human use of human beings—jobs which require relationships with other humans, jobs which require semantic manipulation of symbols.

There is one other consideration. The computer revolution is certainly going to accelerate the trend toward more leisure time. More to the point, a new group of people will begin to enjoy significant amounts of leisure time. For this leisure time to be constructively used, it is important, even urgent, that Christian churches, Christian sociologists, Christian educators, and other concerned groups seek to instill in the coming generation a set of values—Christian worship, Christian service, art, music, crafts, nature, etc.—which will yield that result.

SOME MAJOR CHALLENGES OF CONTEMPORARY PHILOSOPHY TO THE CHRISTIAN FAITH

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The twentieth century has produced a twofold reaction against traditional philosophy: in Europe phenomenology and existentialism, and in Britain analytic philosophy. This paper attempts to place this reaction in context of "the crisis of the sciences", and to relate it to the quest for meaning in a scientific age and for apodictic foundations of human knowledge. Particular attention is given to the effect of existentialism's historical relativism on religious knowledge, and to the discussion of religious language among British analysts. In both cases it becomes essential to reunite conceptual to existential knowledge within the framework of a metaphysic made modest through chastening.

The mention of "challenges to the Christian faith" immediately suggests a series of attacks which imperil revealed truth and endanger the believer, a suggestion which implies that we should narrow down our attention to points at issue. But this would limit our overall understanding. It appeals to a negative, defensive mentality which is unworthy of the Christian scholar with his positive mandate to exploit all fields of learning for the glory of God. I should like, therefore, to reinterpret the term "challenges" to include as well positive opportunities afforded by contemporary philosophy for Christian thought to develop its own distinctive contributions. The relationship between faith and learning should after all be a positive and creative thing.

Contemporary philosophy regards the modern mind as desperately sick. Two somewhat different diagnoses are offered and two different remedies prescribed. Existentialism, on the one hand, points to a severe case of scientism, contracted in the Cartesian tradition, and which is sapping the meaning from human life. Analytic philosophy, on the other hand, points to mental puzzles and intellectual uneasiness as symptoms of linguistic confusion. Many, if not all, philosophical problems are due to the misuse of language. The obvious therapy is a linguistic analysis which will unmuddle the muddled thoughts of traditional-type philosophers. In both diagnoses traditional philosophy is at fault. Both prescriptions call for the discovery of meaning. And while existential meaning is vastly different from linguistic-use meaning, both traditions originally sought their end apart from metaphysics. In this paper we shall sketch some paths they have followed to their present frontiers, so as to indicate points at which they already intersect with Christian interests and areas of opportunity looming on the horizon. In particular I want to suggest that without metaphysics neither existential nor analytic nor Christian thought makes much progress, and that it is in metaphysical concepts that some of the most fruitful encounters between these approaches are possible.

I. *Existentialism*

1. *What is scientism* and what are the symptoms which existentialism finds so repulsive? We should, of course, note that the objection is not to the sciences *per se*, whether natural or social, nor to scientists. Scient*ism* is rather a reductionist attitude which restricts all knowledge to the scientific sort and regards science as self-sufficient and self-explanatory. It is "scientific exclusivism." We should also note that "science" and its cognate terms are here used in the European sense, not simply for those disciplines using experimental and statistical procedures, but for any disciplined pursuit of theoretical knowledge. What *we* call the sciences may exemplify this discipline most

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closely, but the terms "science" and "scientism" carry considerably wider connotations.

Scientism appears in various forms. In philosophy it found overt expression in the 19th century *positivism* represented by Auguste Comte and John Stuart Mill, who regarded theology and metaphysics as kinds of of thinking which we have outgrown in the evolution of positive, scientific knowledge. They encouraged the development of behavioral studies as empirical science, and so detached sociology and ethics from their religious and philosophical moorings. The laws of logic were interpreted psychologically as empirical descriptions of how people think, probably reliable for practical purposes but without necessary validity. *"Psychologism"*, this particular form of scientism, therefore precluded anything more than relativism in regard to truth and values, yet a relativism which, paradoxically enough, was imposed in the name of the truth of scientific knowledge and the absolute value of scientific progress. But scientism also appeared in philosophic *rationalism* in the attempt to forge a rigid philosophic system. Descartes is a good example and he, along with Hegel, are the chief scapegoats for existentialist indignation. Descartes, you recall, devised a philosophic method modelled on mathematical reasoning. He began with intuitive axioms and proceeded by chains of deductive inference to demonstrate the existence and nature of God, the soul and matter. As long as the mechanistic world-view prevailed, this seemed quite appropriate, but the advent of biological vitalism and philosophic romanticism proved an upsetting experience. The new concern for emergent novelty, creative individuality and human freedom could not be accommodated within the mechanistic model. *Historicism* is another form of scientism, one which regards the scientific study of history as self-sufficient and objectivity as entirely possible and which dispenses with metaphysical interpretations of historical causation. In religion, analogous situations developed: first, Hegel's attempt to evolve religious symbols into scientifically philosophical concepts and, second, the subordination of personal faith to historical research.

Scientism, it can be seen, lays such exclusive emphasis on scientific knowledge that it obscures other values and human individuality. Indeed, it is held responsible for the present cultural crisis. Modern science has placed at our disposal unprecedented technological resources. Physical and economic benefits, increased life-expectancy, exploding populations, booming demands for manufactured goods, widespread educational opportunity, mass communication media, social technology and the means for political manipulation—these have created new economic, social, and political theories, new totalitarian regimes, new restrictions on human freedom. The central problem is that scientific technology, denuded of the guidance of values rooted in enduring concepts concerning man and God, dehumanizes the individual. In a mass society men and machines alike become tools, impersonal objects. Literary works like *Brave New World* and *1984* and Camus' *The Plague* have dramatized this crisis for our generation.

The problem, then, is that scientific knowledge objectifies man and treats him as a universal phenomenon; in doing so it fails to grasp the inner pulse of his existence—a man's historical concerns, his individual anxieties, his values. The scientist himself is caught in the same predicament for his professional interests, including the selection of a field of endeavour and the motivation he brings to his work, are related to his values, values which he pursues in his scientific work but which science itself neither discovers nor creates. The very value of the scientific enterprise is in this sense independent of science. Its logical validity is also in question. Hume's problem of induction, the built-in difficulties of the probability calculus, the quest for the logical foundations of mathematics by Frege, Russell, Wittgenstein, Brouwer, Husserl, and others—all this indicates the fact that science, for all its eminent advances, has not succeeded in grounding its own existence. Such, at least, is the insistence of a wide range of contemporary philosophy. The crisis in our culture is coupled with "The crisis of the sciences".

The Christian is properly concerned about this, not only because of his professional involvement in science and culture but also because of the value he places on the human person, and of the meaning vested in human existence by the Divine work of Creation and Providence, Incarnation and Redemption. The dehumanization of modern man is a matter for Christian concern and Christian action. It would be easy simply to proclaim that Jesus Christ gives life the meaning we need, but the task of Christian scholarship extends beyond the proclamation of the gospel. Some Christians have taken an interest in existential psychotherapy as a means to meeting the need of modern man, but existential psychology depends on the insights of existential philosophers. In any case the Christian philosopher is not himself either a preacher or psychiatrist. His concern focuses on the theoretical dimensions of the problem. He could pass off the "crisis of the sciences" by declaring that the possibility of human knowledge rests on the law-structure of creation, but such a declaration is only a starting point for the more careful treatment incumbent on Christian scholarship.

2. *In response to scientism*, the neo-Kantians maintained a distinction between the natural sciences *(Naturwissenschaften)* and the human sciences *(Geisteswissenschaften)*. Whereas positivistic methods are regarded as appropriate for the former, the latter remain autonomous. In the human sciences, personal and historical factors preclude scientific objectivity; to objectify man is to dehumanize him. A transcendental method is more appropriate, one which probes beneath the cultural, historical, and psychological phenomena to the conditions which make such activities possible, conditions which distinguish man as a self-conscious and valuing being from the impersonal ob-

jects of his natural environment. But while this distinction helps clarify the problem it does little to resolve it, for in response to the threat of scientism it makes human beliefs and values dependent on and relative to the men and the cultures which create them. Existentialism grew in this neo-Kantian soil where historical and cultural relativism precludes scientific objectivity in the study of man. In place of objectivity we must enter into the subjectivity of others, by means of an empathetic understanding, *Verstehen,* which grasps the human situation from within.

Wilhelm Dilthey (1833-1911) applied this neo-Kantian historical relativism to philosophy. Philosophy is a cultural phenomenon, a product of history. As such it is to be studied by historical methods. The internal structure of a philosophic system can be seen, not through the grid of formal logic or Hegelian dialectics, but rather in terms of the beliefs and values of its creators. A system is a world-view *(Weltanschauung),* the elaboration of a primitive *Weltbild.* It structures the value-laden experience of historical individuals. In so far as it is "true to fact", it is true to the facts of their "lived-world" rather than the facts of theoretical science. Philosophies, therefore, are relative. They can be refined and they can be classified. By means of them we can give meaning and value to all kinds of experience, including the scientific, but their validity is historical and personal. Unchanging metaphysical truths and scientific objectivity are not attainable in philosophy. All philosophy is perspectival.

Friedrich Nietzsche (1844-1900) reached similar conclusions. All philosophy is ultimately autobiographical, the ego-projection of the intellectual, the unbridled assertion of a will to power. The positivist with his cold adherence to hard facts is really expressing his democratic prejudices and asserting his freedom from all ideological masters. The sceptic who reserves judgment reveals a nervous sickliness; his philosophy is a gentle sedative to settle an upset stomach. All philosophies, in fact, are relative to the individual and to the balance of power between strength and weakness in his personality. Philosophy is a voluntaristic activity which gives meaning to life and to scientific thought. It is one of a number of devices whereby the strong-willed can assert their dominance in society and so overcome the sickly dehumanization of modern man.

The delayed-action influence of Soren Kierkegaard (1813-1855) is, I think, best understood in the same general context. Scientism in his day was the two-headed monster of Hegelian philosophy and the historical criticism of Scripture. He respected scientific investigation and speculative philosophy in their proper places but sarcastically rejected their encroachments into life. In the realm of the human spirit, scientific method is blasphemous: it "cheats men out of the simple, profound, and passionate wonder which gives impetus to the ethical". The philosophic system is "a plebeian invention", which ousts the aristocratic luxury of being an individual, a real authentic person. Life must not be robbed of its wonder nor faith of its intensity. Christianity is more than a historical phenomenon to be probed and dissected by historical science. Whereas historical knowledge amasses probabilities and approximations, faith is qualitatively distinct. It is an unbounded passion that cold, calculating reason can neither induce nor destroy. Kierkegaard is all too often and too easily misunderstood. He speaks of subjectivity and of freedom. But subjectivity is not for him an epistemological category, as in Berkeley's theory that the objects of perception have only a subjective status in the privacy of the mind. It is rather an ethical and a psychological term, denoting the passionate concern and intense wonder of a man standing alone before God. It is the antithesis of scientific objectivity and detachment. Likewise "freedom" does not deny the facts of historical causation and psychological conditioning. Such facts are recorded when we look at man from without, scientifically. From within, we discover another side: the decisiveness with which we authenticate ourselves as individuals. Logic is like science; it deals in essences and the universally necessary. Logical systems are possible—lots of them—but not an existential system. For existence is individual, free, and unfinished; it is lived, not contemplated. An existential system is impossible for any man, possible only for God.

I think enough has been said to indicate a pattern in the response to scientism. Stress is laid on dimensions of human selfhood which are not amenable to the objective methods of scientific history, logic, or psychology and which defy the systematizations of metaphysics. More recent existentialism continues this pattern. Gabriel Marcel, a Christian existentialist, describes the structure of down-to-earth experiences like hope and love by which a man rises above the impersonality of a scientific age. Martin Buber, a Jew, explores the lived-ness of I-Thou relationships, both social and religious. Jean-Paul Sartre traces in both his literary and his philosophical works the nauseating state of man condemned to freedom in a world without God, yet striving to create meaning and value which he knows cannot survive. Martin Heidegger has described the universal characteristics of lived-time as against scientific time, and historical existence with its "being-unto-death." Karl Jaspers pleads for communication between historically relative viewpoints, communication that will both preclude ideological totalitarianism such as he faced under the Nazis, and "trigger" a recognition of the richness of selfhood which empirical science, rationalistic philosophy and social technology have all alike impoverished.

Let me make two brief observations. The first is that Christian thinkers, both Protestant and Catholic, have participated in this existentialist response to scientism by applying the resources of the Christian faith to the re-humanization of man. They have responded to the challenge of contemporary philosophy. The second observation is related, that I find a considerable amount here that is both insightful and telling, a wider and deeper empiricism than we have been accustomed to.

The fact of our subjectivity and historicity, the fragmentary and unending nature of the philosophic quest, these are hard to avoid. In the final analysis a philosophical perspective is chosen not proven, postulated not deduced.

3. With this in mind I wish to dwell for a few moments on *the problem of relativism* which underlies existentialism. It should be stressed that existentialism did not create the problem; rather it attempts a reply. If our moral values, religious beliefs and world-views are historically conditioned, if historical investigation and philosophical inquiry are themselves fragmentary, historically relative, and perspectival, then no amount of science or logic can help. Eternal truths cannot be established; they cannot even be fully conceptualized. Existentialism turns, therefore, from cognitive or propositional truth to existential truth or personal authenticity; from scientific history *(Historie)* to existential history *(Geschichte)*. The value of the history of philosophy, for Jaspers at any rate, is therefore existential: it aids authentic self-knowledge rather than furthering scientific investigations. And the value of historical religions, similarly; they abet existential fulfillment rather than providing objective, propositional truth about God. Historical science may thus cast doubts on the integrity of the Bible without affecting its religious worth, for *Historie* does not impair *Geschichte*. Religious faith is personal, passionate and existential, not a collection of historically relative beliefs and concepts. Revelation is the existential disclosure of the depths of our being, or perhaps a self-authenticating encounter of the I-Thou variety; but in neither case is revelation a cognitive disclosure of objective information in propositional form.

This is very evident in Paul Tillich. God cannot be conceptualized. Theological ideas are symbols which cannot be translated into cognitive form. Their function is not to inform but to express in historically relative garb the ultimate concern with which faith regards the Ground of its Being. The concept of a personal God, for instance, is inadequate: whose notion of personality? The Greeks' or the Hebrews'? Descartes' or Schelling's? Allport's or Watson's? God transcends all such relative categories. He cannot be called "personal" in any such sense, nor can he be called "impersonal". Nothing can be said of God in this conceptual language except that the Ground of all Being is the ground of our personal being. But what concepts cannot do, since they are weak through historical flesh, the Ground of all Being does existentially, stirring in us the courage to be personal and authentic.

Let me suggest two lines of inquiry which I find promising. First, I suspect that existentialism has uncritically accepted the neo-Kantian disjunction between *Natur* and *Geist*, and so perpetuated the gulf between scientific and existential interpretations of history, between *Historie* and *Geschichte*. I do not think that historical science floundered on the rocks of relativism, so that only the existential can be salvaged. In fact, it has been argued quite successfully that existential knowledge itself depends on other more cognitive forms of knowledge. How can authenticity be triggered unless it is possible to conceive and to communicate what authenticity is all about? And how can history and historical religion be interpreted existentially unless we know what transpired in history and what the historical religion entails that elicits the courage to be. In other words, we would do well to explore the problem of historical knowledge before we sell out to an existentialism built on shaky premises. Second, the disjunction between *Natur* and *Geist* is the post-Kantian equivalent of Descartes' highly debatable mind-body dualism. This is a metaphysical problem which existentialism prejudges in its overwhelming attention to individuality and freedom rather than to concepts and essences. Is man as free as many existentialists imply? Is history the creative activity of the human spirit? Are there no economic and sociological determinants, no logic to history, no providence in God? What then is the relation between human freedom and such factors? These are metaphysical questions, and they too must be faced in connection with the existentialist claim.

I am happy to see that some existentialists, particularly those in the phenomenological tradition, are facing these issues. Maurice Merleau-Ponty, a French phenomenologist, has done sterling work in the borderland between scientific psychology and existential philosophy. Christian thinkers like Paul Ricoeur and Alphonse de Waelhens are actively involved in exploring the relationship between history, phenomenology and metaphysics. We may hope for considerable amelioration of the extremes to which existentialism has gone in its historical, religious and ethical thought, and for an increasing rapprochement between traditional philosophic interests and those of existentialism. This, as I see it, is perhaps the greatest challenge of existentialism to the Christian faith, to reestablish liaison between historical knowledge, metaphysical and theological concepts, and existential self-knowledge. Biblical Christianity embraces all three. That Jesus Christ was raised from the dead, for instance, is, Paul argues in I Cor. 15, (1) a well attested historical fact, (2) the conceptual meaning of which is to be found in the nature of the Person involved and in the doctrine of a future resurrection, and (3) the existential value of which is seen in the vitality of faith and hope. All three are essential to Biblical Christianity, and therefore, we believe, to the fullest rehumanization of fallen man in a scientific or any other age.

Another aspect of the problem of relativism applies to the diversity of and disagreement between philosophical positions. The existentialist recognizes the historical and personal factors which engender such differences, and the phenomenologist attempts to "bracket" these variables in order to intuit more clearly the universal structures of consciousness and so transcend the relative. But "bracketing", I sug-

gest, is an ideal never actualized—witness the disagreements between phenomenologists in their descriptions of consciousness. As a result existentialism is not able to mediate philosophical differences, even with phenomenological assistance. Our understanding of philosophical decision may have been enriched by its contributions, but in itself existentialism cannot establish one perspective as against another. The question for our day, in this regard, concerns the juxtaposition of existential and cognitive elements in the nature and criteria of truth, the relationship between the personal authentication a belief affords on the one hand, and its empirical adequacy and rational coherence on the other.

II. *Philosophical Analysis*

Around 1900 British philosophy was dominated by the rationalistic systematizing of neo-Hegelian idealists. By 1935 idealism had lost its lead and by 1965 it has become almost insignificant as an intellectual force. This change is due not to any upsurge of an antithetical materialism but to a revolt against speculative metaphysics and rationalistic systems in general, a revolt which is usually traced, in British philosophy at any rate, to G. E. Moore's 1903 manifesto, "The Refutation of Idealism". Trained as a classicist and lured into philosophy by his friend Bertrand Russell, Moore (1873-1960) was naturally oriented more to details of language and meaning than to wide-ranging ontological and cosmological schemes. The thing that incited his philosophic interest, he tells us, was neither the discoveries of science nor experiences of the everyday world, but the odd, Pickwickian utterances of philosophers. That "time is unreal", to use an idealist thesis which he painstakingly refuted, simply makes no sense, for then he could not be at Cambridge while Joachim was at Edinburgh as actually was the case. To deny the existence of material objects is patent nonsense, for, as he demonstrated to the British Academy, here is one hand for you all to see and here is another. $1 + 1 = 2$. Therefore, at least two external material objects exist. This is something everyone knows for sure; how then can some philosophers deny what they know to be true?

The significant thing in all of this is not his return from idealism to realism, nor primarily his appeal to common sense rather than logical abstractions, but rather the combination of a diagnosis and a method. The diagnosis is that traditional philosophy contains a large number of downright muddles, confused ideas that need unravelling piecemeal before we can even think of turning to the construction of systems. The method required is analytic, the painstaking sorting out of possible and impossible meanings that lie jumbled in philosophic expressions. Moore was want, therefore, to take a seemingly simple expression like "time is unreal", to pose four or five different interpretations of it, each with several sub-possibilities, to show the impossibility of many or all of these making sense out of ordinary experience (as philosophical theories are supposed to), and so to clear away the undergrowth of linguistic and conceptual confusion.

Such a procedure has obvious benefits. It provided a needed counterbalance to speculative thought, one which holds philosophers responsible to more than formal logic. It makes clear that the question of meaning precedes the question of truth, and that a lot of so-called truths flounder before they cross this first reef. It accordingly succeeds in sharpening issues, in exposing *cul de sacs,* and in explaining the origin of some vexing pseudo-problems. But analysis has its limitations: its results are piecemeal, and it contributes little to world-views except precision in fine points. Moore recognized this and confessed his inability to settle questions. His work, however, in epistemology and ethics is of lasting value and he may well be said to have changed the course of Anglo-American philosophy in the 20th century.

I have taken time to speak of him for two reasons: first, for his profound influence on later analysts whose work bears more directly on the Christian faith; second, for the fact that he helps us see that analytic philosophy *per se* is neutral with regards to religious and moral questions, so that its principle challenges to the faith are the demand for clarity, the insistence on precision of thought and expression, and the invitation to unearth unnecessary paradoxes and semantical quibbles. This is a challenge we should welcome.

Analytic philosophy, meantime, was developing along other lines. Bertrand Russell's work on the foundations of mathematics and on symbolic logic led him to acclaim mathematical and logical language as the ideal medium not only for scientific work but also for philosophy. This is the persistent purpose undergirding his prolific output and changing views. Philosophical analysis requires the use of an ideal language in which every basic proposition denotes some atomic fact, and every logical relationship parallels the molecular structure of the factual world. He thus combined analysis with (1) the proposal of an ideal language, and (2) the theory of logical atomism. This gained further importance because it was largely adopted by his even more influential student, Ludwig Wittgenstein (1889-1950), who shares with Moore the distinction of having changed the course of philosophic history in the English-speaking world. In his *Tractatus Logico-Philosophicus,* Wittgenstein expressed the ideal language theory and logical atomism in a "picture theory" of meaning: the view that each word represents an object or a relationship and that the function of language is accordingly limited to communicating denotational meaning. The meaning of any statement, then, can be determined by inquiring into the state of affairs it depicts.

It is only one step from this to the verification principle of the logical positivists, a view which Wittgenstein himself is sometimes supposed to have held, but which was effectively introduced into British analysis by A. J. Ayer. The verification theory insists that the meaning of a factual statement is to be found in the empirical data to which it refers and which would be used to verify it. I assume you are familiar with this, and with the positivistic application of it which ruled

out both metaphysical statements as meaningless because not empirically verifiable, and statements of ethical norms as likewise meaningless except insofar as they denote the emotional state of a moralizer. On these terms, "God is good", "God created the heavens and the earth", and "Stealing is wrong" all lack factual reference and are therefore nonsense syllables. The question of their truth or falsity cannot even be discussed.

For reasons which are quite widely known, connected with the inadequacy of the verifiability theory, of logical atomism, of the ideal language proposal, and of the picture theory of meaning, logical positivism is now effectively dead as far as philosophers are concerned. The principle mortician was Ludwig Wittgenstein himself, whose *Philosophical Investigations* criticises ruthlessly his earlier position and develops an idea of philosophy which since 1940 has become dominant in British and Australian thought, and plays a leading role in the U.S.A.

Wittgenstein retains the conviction that philosophic problems arise from the misuse of language—"when ordinary language goes on holiday"—and declares that the task of the new philosophy is entirely therapeutic. He retains also the view that language arises for purpose of communication, but he now points out that these purposes are much more richly diversified than the picture theory, the verification principle and any denotative view of meaning supposed. Positivism was not sufficiently empirical about this. A wide variety of "language games" arise to serve a wide variety of purposes, so that we can never suppose that one word or phrase denotes the same atomic fact all the time, nor do all words denote, nor can we reduce all language games to one ideal language. Instead, when we encounter some "odd usage" we inquire into the logic of its operation—its own unique functional logic —and when we look at a philosophical problem we discover that it is merely a pseudo-problem, a puzzle produced by mixing the rules of different language games. Gilbert Ryle, for instance, speaks of "systematically misleading expressions" like "Pickwick is fictional" which have lead philosophers to ascribe quasi-ontological status to Pickwicks as subsistent but non-existent beings, and to speak of "fictionality" as a real universal in which subsistents like Pickwick participate. Philosophy, as Wittgenstein and his followers conceive it, is devoted simply to the task of unmuddling such muddles.

Oxford philosophers have gone one step further. Dissatisfied with being linguistic therapists and no more, and unwilling to believe that *all* philosophic problems arise from linguistic abuses, they have explored ways of using linguistic analysis to do constructive philosophic work. J. L. Austin, for instance, engaged in a sort of lexicography intended to bring to light subtle philosophic nuances embedded in centuries of developing word-usages. And men like Ian Ramsay and P. F. Strawson have rekindled interest in metaphysics as conceptual mapwork to guide in the proper use of language and the proper understanding of beliefs.

It is evident that this post-positivistic analysis, which is usually distinguished from the "ideal language" type by the "ordinary language" label, presents to Christian faith a very different situation than the logical positivistic iconoclasm of the 1930's. No more are metaphysical, theological, and ethical statements promiscuously obliterated as devoid of meaning. The challenge now is to determine what sort of meaning they do have, what is the inner logic of such languages. We find therefore that the new methods are being applied to ethics by people like R. M. Hare, to metaphysical questions by people like Gilbert Ryle and P. F. Strawson, and to theological issues by men like Anthony Flew, Basil Mitchell and a raft of others. And it is fair to say that the religious language question has now become one of the leading and most live problems under discussion in the philosophy of religion.

Since another paper in this convention is concerned with that subject, I shall not attempt to sketch the various viewpoints which have arisen. Instead, let me indicate what I take to be the principle challenges arising from the history-so-far of the analytic movement.

1. The problem of meaning. Whereas logical positivism confined itself to denotational or extensional meaning, ordinary language philosophy concentrates on functional meaning—how elements of a language operate in appropriate situations. A third variety of meaning is still largely overlooked: conceptual or intensional meaning. Take a statement like "God is love". We would say that (1) it *denotes* something about the divine being which is evident in our experience of providence and redemption. The early logical positivists refused to call this verifiable and so labelled the statement meaningless; some analysts still do the same; others broaden the scope of experience to include the religious, and even eschatological confirmation. (2) It *operates* in a religious community so as (e.g.) to elicit faith and encourage feelings of comfort and gratitude; in this way it has existential meaning. Some analysts however confine its meaning to the emotive-existential level. (3) It symbolizes theological doctrines, part of a larger *conceptual* scheme, a theistic interpretation of life and history and the world which Christians and others affirm as true. The Christian thinker can hardly be satisfied with any treatment of religious language which does not do justice to all three of these. But to assert all three levels of meaning is to say that religious language is both cognitive or propositional (in its denotative and conceptual meanings) and existential. The problem we face is to explicate the conceptual meanings of our private language with its archaic vocabulary. We must not fall into the scientistic trap of assuming that the only meaningful propositions are either literal descriptions or analytic tautologies. Symbol, analogy and metaphor play an enormous role in articulating the content of faith, as they do in any literary expression of beliefs and values of any sort.

2. The nature of metaphysics. Conceptual meaning such as we have just referred to, and the elaboration of a set of theological concepts and categories, overlaps into metaphysical thinking. Beliefs concerning God and man and creation are metaphysical beliefs. The Christian thinker will therefore watch with concern the fate of metaphysics in analytic philosophy. Present prospects seem to be improving, but there is some tendency still to regard alternative beliefs as alternative languages devoid of truth-value, the option between which rests more on operational and existential than on evidential or cognitive grounds. Analysts generally have not provided the means for deciding between conflicting perspectives and world-views. I do not hold a brief for metaphysics à la rationalist, deductive inference and closed systems included. I envision rather the careful elaboration of a world-view that is clearcut in its guiding principles but open-ended and tentative in much detail, open to dialogue and criticism, to new ideas consonant with the essential genius of the view itself, and to new ways of structuring old ideas. We may expect further work in metaphysics of this sort and the Christian thinker is challenged to contribute his distinctive perspectives to the task.

3. The relationship of logic and language to reality. Logical atomism supposed an identity between the structure of an ideal language and that of the world. Ordinary language analysis supposes that the logic of linguistic usage hides distinctions and perspectives which, when brought to light, can enrich our understanding of human experience. Aristotle and Hegel both supposed that the laws and categories of logical thought are also the laws and categories of reality. Which logic, then, is correct: Aristotle's or Hegel's or Russell's or Mill's or that of ordinary language? Or does reality reveal itself at all to logic? Is the wisdom of God amenable to human categories? Or are we confined to a phenomenological description of existential moments, as Sartre and Kierkegaard variously suppose, or to alternative languages which tell us nothing of the real? Christian theology along with philosophy hangs on this problem, as does the possibility of commending the truth of Christianity by means of a rational apologetic. We have to show that religion does speak of reality, and to develop a logic which will enable us to argue that the Christian religion speaks truly. I do not think this can be confined to either deductive or inductive logic or any combination of the two, for these apply primarily to formal systems like mathematics and to scientific verification. The logic of philosophic decision and of religious belief fits neither of these models. Yet it is a logic that is more than existential. What this is, is something about which philosophers and apologists are equally concerned.

4. What bearing have existential and analytic philosophy on each other and on traditional philosophic concerns? As we have seen both of the more recent movements have made signal contributions both to our methodology, in getting us away from narrow sense-empiricisms and from logics that cramp the subtlety and subjectivity of philosophic thought, and to our understanding of the problems, and to our sensitivity to the human situation. But both of them have limitations: they appear hungry for more than they alone can afford. Some philosophers look for closer rapport between them, and some for an increasing rapprochement with traditional philosophic interests. In any case, philosophy can never again be the same; the Christian thinker must reckon with this fact. We cannot go on resurrecting old answers to defunct problems, nor will old answers necessarily fit new problems. Christian truth must become incarnate anew in every succeeding milieu, if it is to identify with men in their perplexed gropings and to point toward the Logos of God in whom, ultimately, are hid all treasures of wisdom and knowledge.

As you see, Christian philosophers have their work cut out!

The following materials are recommended for the philosophic layman who is interested in exploring these areas. The list is both arbitrary and selective. In addition, *The Christian Scholar* carries articles on the subject for Christian professors in non-philosophic disciplines.

Walter Kaufmann (ed): *Existentialism from Dostoevsky to Sartre* (Meridian Books)

S. Kierkegaard: *Concluding Unscientific Postscript* (Princeton U. Press)

W. Dilthey: *The Essence of Philosophy* (U. of N. Carolina Press)

F. Nietzsche: *Beyond Good and Evil* (Gateway Books)

K. Jaspers: *Reason and Anti-Reason in our Time* (Yale Univ. Press)

R. Bultmann: *History and Eschatology* (Harper Torchbooks)

G. Marcel: *Homo Viator* (Harper Torchbooks)

E. Husserl: *Phenomenology and the Crisis of Philosophy* (Harper Torchbooks)

P. Thévanez: *What is Phenomenology?* (Quadrangle Books)

John Wild: *The Challenge of Existentialism* (U. of Indiana Press)

H. Schoeck and J. W. Wiggins (ed.): *Scientism and Human Values* (VanNostrand)

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G. J. Warnock: *English Philosophy Since 1900* (Oxford U. Press)

B. Russell: *My Philosophical Development* (Simon & Schuster)

A. J. Ayer, *et al: The Revolution in Philosophy* (Macmillan)

L. Wittgenstein: *The Blue Book and the Brown Book* (Basil Blackwell)

V. C. Chappell (ed): *Ordinary Language* (Prentice Hall)

A. Flew and A. Macintyre: *New Essays in Philosophical Theology* (SCM Press)

F. Ferré: *Language, Logic and God* (Harper)

Ian Ramsey (ed): *Prospect for Metaphysics* (Allen & Unwin) and *Models and Mystery* (Oxford)

THE CHRISTIAN PERSPECTIVE AND THE TEACHING OF POLITICAL SCIENCE

JAMES R. CAMERON*

Recognized only recently as a social science, political science has seldom been examined from either a Christian perspective or from the perspective of the behavioral sciences. After listing the general subject areas of this academic discipline, this paper examines the basic approaches which dominate the study and teaching of political science. Since World War II behavioralism has challenged all of the traditional approaches to poltiical science. This paper suggests a Christian perspective in each of the traditional approaches to this discipline. Christians and behavioralists can and must work together in political science as well as in the other social sciences.

Politics and religion are usually regarded as the two most controversial subjects for social conversation and are often avoided in the interests of congeniality. Unfortunately there have been too few efforts to consider the relationship of Christianity to the discipline of political science. Most of the attempts at rapprochement have been from the direction of theology. This article will examine the teaching of political science from the perspective of a Christian faith.

There are three things to notice as we approach this topic. In the first place, a Christian world view was not seriously challenged until the scientific revolution of the seventeenth century. Historians regard the scientific revolution as of far greater importance for our modern world and its basic outlook than the Renaissance, Reformation or the Industrial Revolution. Contemporary movements in theology and philosophy as well as in political science are a result of the intellectual impact of the scientific revolution. It will certainly not be a naive Christian faith which emerges from the crucible in which traditional views of the world, man and God are being challenged.

Secondly, social sciences as distinct areas of study emerged from the enlightenment of the eighteenth century. One of the last, or perhaps most recent, to make its appearance has been political science. In fact, it has been only in the twentieth century that political science has been accepted as an academic study in the United States. The American Political Science Association was founded in 1903 and since that date has published the *American Political Science Review*. This should not be taken to mean that prior to this time men were not interested in politics. It suggests rather that the professional study of political science had not developed to the degree which warranted a distinct organization. Much of the history written before the last century was essentially political and military history. Philosophers, theologians, and political leaders of all ages have made pronouncements on political philosophy and the accomplishments or failures of governments. Within the last twenty-five years the study of political science has finally developed to the point where its methods, content, philosophies and objectives can at least be discussed intelligently even though consensus has by no means been reached.

A third preliminary observation is that Christians in general and evangelicals in particular have tended to shy away from both the study and the teaching of political science. To some extent all of the social sciences are treated gingerly. This attitude undoubtedly is a reflection of a lingering hostility to the "social gospel" emphasis of liberal theology. In our emphasis on other worldliness and the transforming power of the Holy Spirit in man's life, we have been in danger of ignoring the fact that the Gospel does have a social influence and a stake in social betterment. On

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the other hand, we must do more than support crafty politicians who court the support of church people with pious words.

Since the words *politics* and *political* are interpreted to mean several different things, they, together with *political science* must be defined to clarify this discussion. In addition to defining these basic terms, we must at least enumerate the foundations and fields of political science before proceeding to a summary analysis of the main currents in political science. With this review or introduction to political science before us, we can then move to consider a Christian perspective in the teaching of political science.

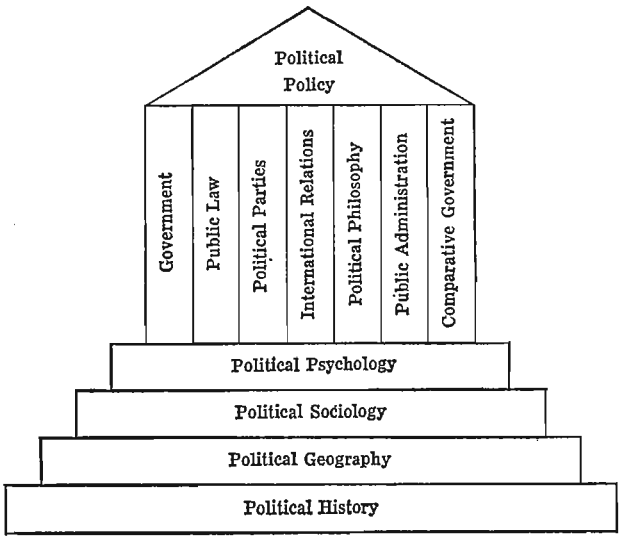
When Dr. Clyde Taylor says that the activities of the National Association of Evangelicals in Washington are non-political, a political scientist would say that they are non-partisan. Political in this sense means support for a particular party. Politics is also used to mean any form of influence—whether exercised on the church board or in the local PTA. A political scientist would probably define such activity as propaganda, but he would certainly contend that the definition of *political* implicit here is too broad. Politics literally means everything that concerns the *polis* or city. This definition was fine for the ancient Greek city-states, but we may interpret it to mean any activity of a community exercised through and under the state. The content of this activity has varied greatly. For centuries religion was a political matter since it was regulated by the state.

A traditional definition of political science is given by Roger H. Soltau in *An Introduction to Politics:*

> Political Science, then, is going to be the study of the state, its aims and purposes—the institutions by which those are going to be realised, its relations with its individual members and with other states, and also what men have thought, said, and written about all these questions. It has three essential aspects. The first is an analysis of *what is*, both in human nature and in its manifestations in political action; this may be called *descriptive*. The second is a study of what *has been* in the past, and may be called *historical*, and the third is an examination of what *ought to be* in the future, and may be called *ethical*. 1

This definition best describes the type of teaching in political science that goes on in extension or adult education courses and in small liberal arts colleges which do not have a bonafide department of political science. In many, if not most, church-related liberal arts colleges there is a department of history and government, or history and political science. A basic course in American government or introduction to political science together with two or three other courses in government are given in alternate years by a historian with little or no real training in political science. This is merely one manifestation of what seems to be an inherent bias among evangelical Christians against careers in government, the profession of law, and political activity in general. The work of Professor Richey Kamm of Wheaton College and Dr. Clyde Taylor of the National Association of Evangelicals in conducting an annual Washington Seminar on Federal Service for students in church-related or independent Christian colleges is to be commended. Most of the faculty who accompany the students to Washington are historians by training. They hope to acquire new illustrations to enliven *their course* in political science. Unfortunately, this situation seems to be self-perpetuating.

Political science is taught principally in large universities in the United States and in well-endowed colleges. As intimated above, this situation is brought about partly by the default of small liberal arts colleges, but it is also a result of specialization within this discipline. Alfred De Grazia has illustrated "The Foundations and Fields of Political Science" as practiced in American universities with a diagram.[2]



The foundations of political science emphasize the factor analysis approach: political history, political geography, political sociology, and political psychology. The fields, or major subject-areas of political science are: Government, Public Law, Political Parties, International Relations, Political Philosophy, Public Administration and Comparative Government. The cap-stone of the structure is Political Policy and the whole is permeated by political theory. Most political scientists are subject-area specialists. It is generally held in political science, as in other academic disciplines, that continuous, intensive study of one area of human involvement will produce more significant results than the one-sided application of a law or principle. This is the reason that there are few books or even articles[3] for that matter, on political science written from a Christian perspective by political scientists. Such attempts written by laymen, philosophers, or theologians do not receive respectful treatment by political scientists because of the lack of technical knowledge of the subject on the part of the author.

At the outbreak of World War Two, four principal currents or traditions could be clearly recognized in the study of Political Science in the United States. For purposes of analysis, these scholarly traditions may be called: (1) legalism, (2) activism, (3) philosophy,

and (4) science.[4] There is an inter-relationship and an overlapping among these approaches for none of them exists in isolation. There are, however, distinct emphases and interests.

Legalism evolved from the study of constitutional history. This approach is particularly concerned with specific laws, constitutions, and government documents. Frederic William Maitland, the famous historian of English law, arrived at some very distorted views on the origin of English towns because of his pre-occupation with legal questions.[5] He was oblivious to the fact that most towns arose about a market or a trading place. For political scientists of this school, comparative government consists in the comparison of the constitutions of major governments with little or no concern for the actual function of the government which operates under the constitution. For example, the constitution of the Soviet Union adopted in 1936 as well as the constitutions of several Latin American countries seem to provide for all of the safeguards of democratic government. In spite of the democratic nature of the instrument of government, the regimes that in fact operated under these constitutions were dictatorships. The legal tradition finds relevance in courses in public law, constitutional law, and those which involve regulation of certain sectors of our society such as labor, agriculture, and international trade.

During the first weekend in February, 1960, while attending a debate tournament at Harvard University, I became aware of the fact that several outstanding scholars were not only supporting John F. Kennedy, but were ready to leave their positions to serve with him if he was elected President of the United States. The willingness of academicians in general and of political scientists in particular to leave their ivory towers for public service began with Progressivism and represents the second tradition in American political science—that of activism and reform. Most of the movements for political reform in this country—initiative, referendum, recall, direct primary, civil service reform, city manager and commission government on the local level—all had political scientists in the forefront. Most candidates for high public offices today have at least one political scientist on their staff of advisers. There are numerous instances in which political scientists who have served as advisers in a campaign have become caught up in politics to the point of running for public office themselves.

Political theorists and philosophers of all ages have tried to find the good life and prescribe the system of government which would be best able to achieve this goal. The systematic study of the Western political tradition is still conducted in courses in political theory. In this approach to the subject, political theory approaches the humanities with a concern for values, ideals, goals and doctrines about political science rather than a systematic study of propositions of a casual nature such as one would expect to find in the social sciences.

Since the beginning of the study of political science as a distinct discipline, there have been practitioners who have regarded politics as a science to be mastered by the same methods and discussed in the same terms as any natural science. Often this empirical study resulted in mere description of processes and behavior with a few restricted, specific assertions. Long before the development of behavioralism, such political scientists as Arthur Bentley and Charles Merriam were calling for the development of concepts and methods which would promote a rigorous, systematic science of politics.[6]

Though the four approaches to the study of political science, which we have just considered, are distinct, they do have at least three elements in common.[7] In the first place, all four of these traditions have been concerned primarily with political and governmental institutions—legislatures, political parties, constitutions, and law—rather than with behavioral decisions and processes within the institutions. Secondly, they all rely heavily on history and methods of historical analysis. Most textbooks in American government begin with the founding fathers and the writing of the constitution and proceed chronologically. Third, dominated by older historical traditions, political scientists of these schools of interpretation believe in letting the facts speak for themselves. They have distrusted generalizations and have not attempted systematic explanations.

Since World War II a new mood or movement, behavioralism, has appeared in political science which has challenged the traditional approaches. This new approach has stimulated a reassessment of the goals and data of political science. The behavioralists are concerned with individual and group behavior within the political institutions. They are studying power struggles, the role of leadership, role-perception, and in general, political actors and processes rather than formal structure. New methods—the use of mathematical models, statistical studies, sampling techniques, and other tools of analysis—have been borrowed from other disciplines in an effort to achieve a more rigorous and systematic empiricism. Political scientists are borrowing not only new techniques but new concepts and categories. The goal of this activity is the explanation of relationships within the political system from specific findings and propositions to an over-all theoretical integration.

Although the lines are not clear-cut between the traditionalists and the behavioralists, something of a battle does rage in political science. Behavioralism is not by any means a monolithic movement, and differences exist among behavioralists over methods, concepts and techniques. One must conclude that the behavioralists are asking new questions, trying new methods, and securing new and significant information. It would be folly, however, to limit political science to the rather narrow limits prescribed by the behavioralists. Harold Lasswell has asked the most pertinent

question of the behavioralists, "Knowledge for what?" He has gone on to propose that the verifiable propositions of political science be used to help solve the public's pressing problems.[8] In addition to the work of the behavioralists, there remains the need to ask and try to answer for this age the basic problems of mankind—what constitutes justice and equality; how shall we deal with confrontations of power (now nuclear), clashes of ideology, and the problems of the world's increasing population.

Now that we have defined our terms and clarified our concepts in political science, we can move on to a consideration of a Christian perspective in teaching political science. The teaching of political science must be viewed in the perspective of current liberal arts education. Two valid criticisms of modern liberal arts education in general are that it fails to provide the student with a unified view of its varied subject matter and that it fails to develop in him a sense of values. The Hebrew-Christian tradition or point of view can provide the student with a broader and deeper understanding of his work by helping him to develop a unified grasp of his intellectual discoveries and a sensitivity to their moral implications. The integrative results of the religious premise are not confined to the student who accepts this frame of reference, for it gives the student who rejects it a point of reference in reverse by offering him something to react against in establishing his own point of view.[9]

Political scientists, whether they admit it or not, do have a world view or a frame of reference. It is fair to say, however, that political science is primarily concerned with the processes of government as they actually exist and not with how they ought to exist. It is the function of social ethics and not of political science to attempt the moral or philosophical evaluations of governmental institutions.[10] It is true, nevertheless, that the political scientist must organize and present his factual data within a conceptual framework which is based upon his world view. Students have a right to have an explicit statement of the point of view of their instructors and conversely teachers have an obligation to think through their frame of reference and relate it to their subject matter if their teaching is to be either relevant or coherent.

The problem of teaching political science from a Christian perspective resolves itself into two major questions: first, how does the subject matter relate to Christianity in a relevant manner; and, secondly, is the atmosphere created in the classroom characterized by Christian conviction and concern? The purpose of the Bible is to reveal God to Man and not to serve as a treatise on political science, natural law or any other academic subject. One must therefore conclude that the Bible can not be used as a direct source of information for principles of political science. The Bible can provide man with concepts of himself, God, and values, within which one can relate his factual information of political science. Among these Bible-based concepts are the dignity and worth of each individual with the attendant responsibility to develop his full capacities, intellectually, socially and spiritually. The primacy of Christian faith demands that man accept and live by values that can never be wholly validated empirically. The right and duty of private judgment are emphasized, with each individual held accountable to God for the quality of his decisions. This freedom of inquiry in the quest for truth and Christian idealism must be permitted to extend to the very bases of the Christian faith. Since Christianity is based upon faith and political science is based upon empiricism, a Christian political scientist can never by means of his discipline discover God's plan or purpose for society as a whole. He can, however, learn from the Bible the lesson that Cain learned too late: man is his brother's keeper.

If there is universal truth revealed by God in Christ, it is the law of love. Most of the activities and teachings of Jesus are simply illustrations of this truth. It makes far more sense to me to accept this interpretation of Jesus' life and ministry than to try to piece items together to form a comprehensive code or ethic. Jesus himself summarized the law and the prophets as "Love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and with all thy strength; this is the first commandment. And the second is like, namely this, Thou shalt love thy neighbor as thyself."[11] When Jesus was asked, "And who is my neighbor?" he answered with the parable of the Good Samaritan. Jesus' method was one of indirection, for the hearer is left to draw his own conclusion. The ultimate test of the law of love was indicated by Jesus when he foretold his second coming in the twenty-fifth chapter of Matthew's Gospel: "And the King shall answer and say unto them, Verily I say unto you, Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me. Then shall he say also unto them on the left hand, Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels; For I was an hungered and ye gave me no meat . . ."[12]

It is at this point that the Christian can begin to make his faith relevant in political science. This message of Christian love has a meaning for Christian atheists and humanists as well as for Evangelicals. Since it is through our political institutions that our most binding as well as our most significant decisions are made, it must be through our political institutions that the law of love becomes embodied in practical programs and policies. In this day in particular when everyone is searching for meaning or values, a Christian professor, whether teaching in a private or public institution has every right to couch his teaching consciously in terms of his Christian frame of reference. While others are teaching from bases such as cultural or economic determinism, logical positivism, or existentialism, the Christian must not hide nor disguise his position. This does not mean that one should be dogmatic or engage in apologetics. One can be Christian in his teaching without apology, condescension, or

a doctrinaire attitude. The classroom is not the place to evangelize, but it is a place for one to bear witness through his mind. Teaching involves a search for truth. It is more important for the instructor to teach methods of inquiry and processes of decision-making than to try to teach correct answers. Teachers should have their own answers to the questions under scrutiny and the students have a right to know the answers of their professors. These must be communicated without dictation or dogmatism. Real learning will not take place without conflict and hard thought. Students, therefore, should be encouraged to challenge the positions held by their instructors, even Christian professors teaching from a Christian perspective.

Before returning to the main currents in political science to suggest some Christian perspectives, let us examine the problem of moral judgment in politics. A Christian because he is a Christian and not because he is a political scientist must make moral judgments even at the risk of indulging his petty prejudices, or appearing to try to impose his personal convictions or even code of ethics on others. A distinction must be recognized between a personal and a group ethic.

Reinhold Niebuhr has referred to this necessary distinction as one between "moral man and immoral society."[13] An individual can consider the interests of others in addition to his self-interest. Indeed this is the essence of the law of love for the Christian. Individuals give themselves to causes or even to the community of the group or fellowship of the concerned. Groups on the other hand consider themselves in practice, ends in themselves and not means to an end. The causes to which groups give themselves tend to become absolutes instead of remaining relative to other groups and other values. The problem of moral judgment in politics becomes particularly acute in international relations. International law becomes interpreted in relation to national interest and not any absolute standard. International morality as a force in international politics is of minor importance. When a statesman must choose between the personal dictates of his conscience and the best interests of his nation, the group must take precedence over the individual.

Even within a nation, the complexities of modern, industrialized, urbanized society no longer permit the individualism which characterized agrarian life in the United States before the Civil War. Extreme individualism becomes a moral issue in a society such as ours. Does a man have a right to plant what he wants to on his own land? Does a man have a right to burn his draft card? There is also a moral issue on the other extreme. Corruption in government is a moral issue. Incompetence in government is a moral issue. The failure of elected officials to act speedily to meet the needs of their constituents is a moral issue. And the general failure of churchmen to become directly involved in politics is a moral issue!

There is no inherent reason why a Christian political scientist can not bring his faith and witness to bear upon his discipline in any of the principal approaches noted earlier. Let us now re-examine each of these approaches in terms of a Christian perspective. Within the legal tradition, the Christian political scientist must recognize that laws and constitutions were not created as ends in themselves but to serve the ends of justice and order. When these instruments no longer achieve the purpose for which they were established, they must be altered or abolished. The law of love will not permit injustice to hide behind archaisms of tradition or constitutionalism. There must be enough respect for law and order for its own sake, however, to try to secure needed change by peaceful means, if at all possible.

Governor Mark Hatfield of Oregon and Presidential assistant Bill Moyers are two Christian men who illustrate what can be done through political activism. Hatfield was led to the Lord by his students at Willamette College where he taught political science. He was also challenged by his students to practice what he advocated in the classroom and to run for political office. With the assistance of his students, he began his political career. Just three weeks after Bill Moyers arrived in Washington to assist Sargent Shriver in the Peace Corps, he addressed the Washington Seminar on Federal Service. On that occasion, he told us of the divine imperative that prompted him to resign from the Southern Baptist parish ministry in Texas to serve in this wider and more secular ministry. As a result of Moyers' willingness to follow this leading of the Lord, many of the messages of the President of the United States are couched in a Biblical idiom. One might go further and suggest that many of the President's programs are conceived in terms of the law of love that recognizes that man is his brother's keeper.

It bothers my conscience to see Unitarians, agnostics, and Jews today carrying the torch against human injustice and suffering while we evangelicals keep Sunday school as usual. Why are we in the world if not to leaven the lump? A Christian message without a heart of compassion for social concern is too mystical for the secular man in the street. Christian men and women must not be too religious to serve their neighbors wherever there is need whether on the PTA, at the polls, or working in the precinct for the political party of their choice. Christian involvement includes political activism. Secular society will evaluate Christian truth and experience in terms of Christian love in action and not pious proclamations. It is time to overturn the tables of the money changers and denounce those who have turned the temple of justice into a social Darwinian jungle ruled by WASPS—white, Anglo-Saxon protestants.

In political philosophy, the Christian is certainly interested in the elements of the good life. Man can not live by bread alone, nor can man live without bread. "Five acres and independence" may be one man's bread and another man's poison. Technological change has drastically transformed the American way of life. Driving through the towns and countryside of

northern New England, one can sense peace, security and conservatism. One can always grow a crop of potatoes for food and cut wood on the hillside for fuel and even do a little hunting or fishing for meat. Those who live in that great megalopolis which stretches from Portland, Maine, down to Virginia are totally dependent on an artificial society for both sustenance and security. Rugged individualism has given way to interdependence. Where men do not know or practice the law of love in Christ, they have had to invent its secular counterpart. Christians must find values that transcend technology. Unfortunately, we seem to have assumed a stance of opposition to anything that is new and then have been forced to yield slowly. This obscurantism seems as unnecessary as it is undesirable. While philosophers and theologians are devoting most of their attention these days to linguistic analysis, there is a pressing need for clear thought in the areas of values and ethics. Political ethics could use some clear and compelling pronouncements. Christians in political science must not only raise relevant questions, but must suggest directions in which solutions may be found and then begin to act.

The scientific approach to politics is as concerned with theories as is the philosophical. The philosopher begins with ideal constructs and proceeds by deductive logic. The scientist using observation and experiment, where feasible, would use induction to build a process model in political science. Philosophers, of course, have always been concerned with observable facts but have made no systematic attempt at observation and the actual application of their theories to practice. Early empiricists in political science were interested in gathering self-evident facts of political life that needed no explanation. Their books on political science were encyclopedias of statistics and factual details with no attempt at analysis to explain what the facts meant. Alexis De Tocqueville in his *Democracy in America* made one of the first attempts to construct theory on the basis of direct observation. The gathering of uncontroverted, factual data is always a valuable if limited activity. Hopefully, someday someone will come along to interpret the facts. It would be unfortunate if Christians in political science concentrate all of their energies on this type of activity since it is safe and will not embroil them in controversies either professional or theological.

Since the Second World War, the behavioralists have come along to offer a meaning to the volumes of uninterpreted facts in political science and to ask new kinds of questions about function rather than structure in political life. To be associated with this term has become, to some persons, a badge of accomplishment to be worn conspicuously. To others, the term is an epithet to be used against those who are viewed as misguided, confused, naive, or even intellectually dishonest. Behavioralism, whatever its presuppositions, must be neither shunned nor avoided. Political science has been redefined by the behavioralists as "the study of the legitimate allocation of benefits and rewards for a society." This definition recognizes value judgments, for if there are legitimate allocations, there must also be instances in which power is wrongly used. Governments not only reward but also possess the supreme power to punish. Is the drafting of men to fight in South Vietnam a legitimate or an illegitimate use of the power of the state? Is capital punishment morally justified? What value judgment must be made on civil disobedience? Did Martin Luther prepare the way for Hitler by declaring at the time of the Peasants Revolt, "Whoever fights for authority, fights for God?" Even those who proclaim that God is dead or an unnecessary hypothesis and that man is mortal can not escape the practical questions of values in human existence. In our world, these values will be both decided and implemented in the political arena. Wherever values are involved, Christianity is particularly relevant.

There are Christians who view behavioralism with alarm. Some, I fear, would label this new development simply a fad and would withdraw from professional activity in political science to await a more convenient day. Defeatism or escapism must be rejected in favor of a dynamic confrontation with the world as it is. The Christian political scientist must view the present situation from the perspective of both his profession and his faith. The Christian finds in behavioralism a challenge to some of his basic ideas about man. For the behavioralist, man is not a living soul created in the image of God but merely an animal unusually adept at adapting to his environment. The Christian must recognize that the behavioralist is right, as far as he goes. Man is an animal with reflex actions and conditioned responses; but, unlike other animals, he has the capacity to make symbols and exercise moral judgment. In many instances, truth for the behavioralist is truth for the Christian. In other cases the behavioralist's view is distorted for the Christian, for the Christian must evaluate or at least consider factors which the behavioralist will not accept as being valid. Therefore, the Christian must study his behavioralism and know the subject as well as the behavioralist. The point of conflict will usually not be with the results of investigations but with the assumptions on which the experiment of investigation was based. If the assumptions are successfully challenged, then the conclusions must be reinterpreted. Confrontation on this level, which is the only significant level, can only take place when people are willing to risk their lives and careers on Jesus' proclamation, "I am the way, the truth and the life . . ." (John 14:6).

The quest for "The Christian Perspective in Political Science" must always remain as elusive as "The Christian Interpretation of History." There will be almost as many Christian perspectives or interpretations as there are Christians. One can not use methods and techniques which are empirical in nature to demonstrate a proposition which is based on faith. This does not mean that the Christian academician should not

Continued on page 55

DR. FRANK ALLEN

BRIAN P. SUTHERLAND*

On November 19, 1965, Dr. Frank Allen, Emeritus Professor of Physics at the University of Manitoba died at the age of 91. He rests from his labours and his works follow him.

A descendent of the Tuttles who came from London, England, on the Planter, the vessel following the Mayflower, Frank Allen was born in New Brunswick, his later ancestors having moved into Canada among the United Empire Loyalists.

He graduated from the University of New Brunswick in 1895 with highest honours in Physics and Chemistry and a Gold Medal in Latin, and was appointed High School Principal the same year at the remarkably early age of 21. In 1897 he received his M.A. from New Brunswick, in 1900 his A.M. from Cornell, and in 1902 his Ph.D. also from Cornell, the last for work on physiological optics, a subject which interested him for the rest of his life. It might well have been otherwise for at Cornell he became interested in the newly discovered thermionic diode but allowed himself to be dissuaded by his professor from investigating the effect of adding a third or grid, electrode as developed by Lee de Forest a few years later.

After a short period of high school teaching, he accepted the founding chair of physics in the new University of Manitoba in 1904 and remained there all his life, serving as Head of the Physics Department until his retirement in 1944. He was elected to Fellowship in the Royal Society of Canada in 1912 and was awarded the Society's H. M. Tory Gold Medal for Scientific Research in 1944. Other honours included honorary degrees of the University of Manitoba and the University of New Brunswick, membership in Canada's National Research Council and honorary membership in the Optical Society.

On a very small research budget, he and his students enthusiastically undertook research and in his lifetime Professor Allen contributed about 300 research papers, mainly on physiological optics and the physics of other senses, to learned journals in the United States, Canada and the United Kingdom. He had work in preparation for publication at the time of his death.

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Professor Allen was not only a creative research scientist but also an inspiring teacher. A former student describes his first lecture in Physics thus:

> Uneasy and diffident, I climb to the very back, the room fills, the lecture starts . . . The professor talks quietly but even where I am sitting every word is clear. Every now and again he pauses and apparently looking beyond the walls lays a fresh vision before us. Soon I forget my self-consciousness, then myself; the room fades, the very earth becomes but a speck in a great immensity beckoning for study. Within the hour I had become a physicist.

Professor Allen constantly stressed the importance of science and the excitement of discovery, while for relaxation he delighted to write and converse in Latin, Greek and Hebrew. In common with many of his generation, he held vigorous religious and political beliefs. The strong scientific tradition of the Manitoba Medical School owes much of its fame to him and his influence has spread far beyond its confines.

He joined the ASA in its early days and was elected a Fellow soon afterwards. He contributed the chapter on "The Witness of Physical Science to the Bible" to our book "Modern Science and Christian Faith" and was the author of ASA Monograph III on "The Eye as an Optical Instrument". He was one of the Affiliation's four honorary members.

In 1903 he married Sarah Estelle, daughter of D. S. Harper. He is survived by a daughter, Lillian, Associate Professor in the School of Home Economics, University of Manitoba, and two sons, Professor John F. Allen, F. R. S., Head of the Department of Physics at St. Andrew's University in Scotland, and Mr. William A. Allen, Principal of the Architectural Association School of Architecture.

"The Sophist begins his dialogue by proclaiming the absence of truth or fixed principles of which we may have a sure knowledge. He then asks us to rely on the undefined concept of *truth* in his own argument, asserting that while all other fixed positions in the universe are but mere products of the mind that would make them so, his position is, of all things, *true*. This reminds me of the deist assertion that God created all things and then passed away. To which we simply say, if He did in fact create all things He created time and therefore never came into being nor passes away. These are purely temporal concepts of which He was the creator. If the Sophist has truly destroyed the concept of truth, how can he possibly revert to this very concept as the reason for accepting his doctrine? If truth does not exist, then it certainly cannot be true that there is no truth. Scientific positivism has seen this weakness in the ancient relativism of the Sophists and has given the old doctrine a new twist."

Ervin Page Bailey, *The Sunday School Times*, Nov. 7, 1964. Reprinted by permission.

FROM THE CONTRIBUTING EDITORS

SOCIOLOGY

SCIENTISTS AND THEOLOGIANS

It is customary to consider the problems stemming from the merger of science and religion from a cultural perspective. Such questions are centered in the relative influence which one institution has over the other. Seldom is one concerned with the interaction level where the scientist and theologian come into a dialogue.

Looking forward to the ASA—ETS meetings this year, however, it is apparent that some consideration should be given to problems on this level. Of particular importance is the need to understand the similar and diverse value systems employed by scientists and theologians.

While the material in the sociology of science is quantitatively scant in this area, it is qualitatively rich. Probably nothing of a comparable nature has been done in the sociology of religion. Nevertheless, there appears to be profit in sketching out the relevant points of contact between these two social systems which allow for an understanding of their relationship.

Autonomy —

It is rather apparent that science and theology are both interested in a search for truth, the former on the empirical level and the latter on the super-empirical. Hence, each has a defined area of specialization. Probably the most significant conflict occurs when these boundaries are penetrated by one or the other.

The attempt to seek these truths produces two social systems, one stemming from the interaction of scientists among themselves, and the other from the interaction of theologians. Each social system, in turn, needs to maintain freedom in seeking truth. For this reason, autonomy is a cherished value and each social system protects itself from outside influences.[1]

To maintain perfect autonomy is, of course, not possible. Significant links with the total society, such as the university or the government, are ubiquitous. Increased relations with such social forces will weaken the autonomous nature of the system.

It should be noted that much autonomy has been lost by science and theology in our modern society. The extent to which science becomes applied for the resolution of problems of a technological nature and the manner in which theology is influenced by social ethics

are cases in point. While the ASA may be flexible in its position on autonomy, the theological position represented by ETS is, perhaps, more durably cast. It appears necessary, then, for ASA to evaluate its position relative to autonomy and realize the existence of a potential conflict with the autonomous theological system represented by ETS.

Priorities —

From these preliminary statements, we may conclude that conflict between these two systems, while necessary, may also be very functional. Such conflict is inherent in the social system of science due to the argument over priority of discovery. The history of such quarrels over priority in scientific accomplishment has been well documented.[2] Of additional importance is the fact that the claim to priority becomes a basic norm of science and results in the need for reciprocity among the system's members. Consequently, scientists are motivated to claim priority for their discoveries, thus causing them to value the constant interaction which is necessary to establish priority.

It is entirely possible that a similar mechanism is at work in theological circles in those situations where doctrinal disputes develop. Refinements in doctrine appear to stem from theological conflicts requiring interaction of theologians across doctrinal lines. To counteract this conflict, there are also norms stressing humility and the proper recognition of the achievements of predecessors. The existence of such norms in science have been referred to elsewhere.[3]

For our particular interest here, we should note that such conflict would also occur when the two systems, represented by ASA and ETS converge. While the conflict functions to increase the unity within each system, it should also be noted that the interaction of scientists and theologians is similarly functional for the development of other value systems. It is suggested that these consist of two main values: the recognition of the limitations of one's own field of truth-seeking and the importance of checking the claims made by the other system. Thus, the checks and balance system resulting from interaction among scientists and theologians appears to be significant.

Altruism —

In both science and theology, there appears to be a strain between what the individual wants to do and what the system expects him to do. It has been claimed that the scientist becomes altruistic in order to reduce this strain.[4] Undoubtedly, such a norm also exists for the theologian. In both cases, the reason for such altruism would appear to have the same bases: the roles of scientist and theologian are both voluntary and outside of the typical reward systems offered by society.

It could be suggested here that ASA and ETS, representing minority groups within each total social system, do not share all of the rewards and norms found there. The liberal theologian, for instance, is rewarded by the norms implicit in the social ethic which is supported by most of the society. Similarly, the member of ASA is interested in problems which are often outside of the mainstream of contemporary science.

Largely because of the value of altruism, members of ASA and ETS would tend to have greater reciprocity and interaction, particularly on certain problems, than with members of their own discipline. Consequently, interaction with members of another social system should be personally rewarding relative to the value of altruism. Further, achievement of personal rewards rather than collective goals appears to induce subscription to normative systems.[5] The members of ASA and ETS would appear to find their mutual interaction rewarding and, in addition, find themselves adhering more closely to the value systems of science and theology. The latter consequence would result, of course, only in the extent to which the total social systems of science and theology have moved away from altruism and its derived value systems.

Reward systems —

In order to maintain social interaction and systems of norms, it is necessary to provide appropriate systems of rewards. Autonomy has been referred to as a goal of the system which is rewarding to the individual when achieved. The claim to priority results in the fulfillment of a personal goal in science and is usually referred to as professional recognition.[6] In addition, it results in a significant value system of science which advocates interaction. Similarly, altruism is a personal goal and, as has been suggested, provides support for the value system of either science or theology.

The adequate control of these rewards is based on the norms of organized skepticism and appreciation.[7] The former tends to be functional for the system and the latter for the individual. Thus, the deviant scientist who attempts to generate his own recognition by claiming illegitimate priority of discovery in science is sanctioned and loses his reputation.

It should be noted that such rewards tend to be maximized when disciplines overlap. Thus, a scientist's work, which may border on another discipline's area of specialization, may be properly criticized or appreciated only by a member of that other discipline. For this reason, interaction between disciplines becomes functional for the control of one of the representative social systems.

It would appear, then, that one of the primary functions of joint meetings of the ASA and ETS is to provide the proper system of checks and balances implied by the rewards of organized skepticism and appreciation. Further, it is through such a system of checks that group and individual goals would appear to be most readily achieved.

Social consequences —

It is entirely possible that the social consequences of science and theology will be ignored in the pursuit of the more immediate ends of seeking truth and gaining individual goals as discussed above.[8] Such con-

sequences tend to be located outside of the system and may be understood with reference to the problems of latency and communication.

Population problems serve as a useful means of illustrating the problems of latency. In advocating the use of birth control, the scientist may ignore the cultural and moral implications of such practices. The theologian, however, who remains firm on certain religious interpretations may overlook the problem caused for the scientist by such a position. As we well know, it is only by proper evaluation of one's system's pronouncements by the other that we approach social consequences with increased objectivity.

The problem of communication results from the increased tendency for any discipline to become less intelligible to the layman as specialization develops. Again, the problem of communication may not be apparent to the specialist as long as there is communication only within the system. Ultimately, such limited communication results in the formation of elites which gain increased social power. Once the public can fully comprehend policies advocated by elites, there is a greater possibility that criticism and erosion of the elite's power will occur.

In our present society, scence and theology constitute influential elite systems with significant power. It is doubtful that ASA and ETS aspire to similar positions. With this assumption, we may conclude that the need for interaction between the two systems for the purposes of maximizing communication and minimizing problems of latency is functional for the control of power elites and justifies the resulting system of checks and balances.

Conclusion —
As members of ASA well know, the Christian community may be readily disposed to be hostile toward science.[9] Such antagonism may be largely the result of a hypothetical conflict between the ethos of science and that of religion. Profitable liaison between the ASA and ETS should go a long way toward dispelling such hostility, thereby allowing both groups to act as buffers between the Christian community and science. Until such a rapprochement might be achieved, the voice of ASA in the Christian community is likely to remain rather weak and distant.

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RUSSELL HEDDENDORF

BIOLOGY

CREATION, EVOLUTION, FAITH

It is a truism that a scholar must, at times, feast off the mind of others lest he be stifled by his own muddled thoughts. With this in mind, the following quotes are given and editorial remarks made as appropriate.

"It is, of course, possible that both evolution and special creationism together may account for the state of living objects as we know them. It is always possible that the larger groups of plants and animals were specially created. Biology is not in a position to prove otherwise because the demarcation between the various phyla, as they are called, is clear and distinct and too large to be accounted for by evolution on the basis of the available data. Their connection by evolution is really assumed by a process of extrapolation." Fothergill in *Evolution and Christians*.[1]

"We are entitled to say that on a varietal, species or even generic level, evolution is certainly true, but the farther we get away from the species—we find a progressive diminution in the degree of certitude until we reach the phyla where there is little evidence, either direct or indirect, that these groups have actually evolved from fewer and fewer phyla until we arrive at the original progenitor of all things. The phyla, in fact, stand apart and distinct in the light of our modern knowledge of them, and they all appear fully formed, or determined, in the rocks. That is the fact." Fothergill in *Evolution and Christians.*

"Modern selectionists often define evolution in a limited sense to suit their purpose. If they show—that a population has changed, that is evolution—. But that is not evolution in the more complete sense of Darwin of an ultimate descent of all organisms from one or a few primordial ancestors." Fothergill in *Evolution and Christians.*

"He (Dewar) asked, if organisms are full of vestiges —, why are they not also full of nascent organs as—they should be on the evolutionary theory?" Fothergill in *Evolution and Christians.*

"Thus, in my (Fothergill) view, these three successive kidneys (in vertebrate embryos) are a necessary and beautiful device for meeting the needs of the embryo while the final type of kidney is being developed." Fothergill in *Evolution and Christians.*

One should not assume that Fothergill is a "Special Creationist" from the above quotations but he does touch on some of the weaknesses of the evolutionary theory which are all too often neglected. I agree with all of the material in the quotations and have said much the same thing in the pages of this magazine in the past. In addition to the weaknesses quoted above, there are other objections to evolution. In science, however, a theory is not rejected if there are some objections to it and scientists will continue to support evolution until the weight of evidence against it is greater than it is at the present day. As Fothergill implies above, the growing mass of evidence for speciation or change at the lower taxonomic levels which is accumulating at an accelerating pace, cannot be used as evidence for evolution in the larger sense or that the present taxa have come from simpler organisms.

"If there were no freedom, if all the vicissitudes of life, the pains and pleasures, the beauty as well as the ugliness were due only to accidents, if everything were as meaningless as a game of poker, if our ideas were simply jokes and our spiritual life were nothing but stupidity or hypocrisy, then I would prefer to quit—to die at once." George Sarton in *Science, Religion and Reality,* ed. by Joseph Needham, 1955.[2] Here is something for the pure mechanists to ponder.

"Has our century produced philosophers superior to Plato or Socrates, artists who surpass the medievals, keener thinkers than the men of the renaissance or greater writers than the Elizabethans?" Charles Hummel.[3] I might add, on the other hand, that our present day scientists are equal or superior to those of former years. Granting that my conjecture is true, I wonder what the reason for the difference is?

"I am a religious fanatic. I am very irrational in my religious beliefs. I go so far as to believe in God, whom I cannot empirically prove.—My mental, spiritual and moral being are based primarily on my faith in God. —Faith is a little word, and the thought of it is rejected by many, but when something works, man has a tendency to trust it." George Reynolds in *MSU State News,* March 5, 1965. Mr. Reynolds also made quite a point of the faith which the scientist has in his fellow scientists.

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IRVING W. KNOBLOCH

Continued from page 50

attempt to make his Christian faith relevant to his discipline any more than a business man should be excused from making his faith relevant to his business ethics. A problem arises, however, when one is called upon to demonstrate that his conclusions are indeed Christian and not simply a matter of his own opinion or judgment. One must not hide behind his Christian faith as a cover-up for narrowmindedness or shoddy thinking. Further, the Christian must hold his judgments in love and not condemnation, for as John Locke pointed out, a man may think that he is right but he can never know it. In the same manner as the Christian is admonished to be ready to give to every man a reason for the hope that is within him, so the Christian teacher of political science should be ready and willing to share with his students his own conclusions or judgments based upon both his Christian faith and his professional training, with an explanation of the processes by which he arrived at his answers. The instructor must then encourage the student to do his own thinking and come to his own conclusions, even though the conclusions of the student differ from those of the professor.

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BOOK REVIEWS

SCIENCE AND RELIGION IN SEVENTEENTH-CENTURY ENGLAND by R. S. Westfall
Yale University Press, 1958
i + 235 pp., $4.50 hardbound

Science and Religion in Seventeenth-Century England constitutes an antidote to the common and erroneous opinion that the two endeavors were generally at odds in that era. This volume in the history of science clearly shows that outright conflict was the exception rather than the rule. Science was indeed hailed as the defender of religion. This is not to say that religion was unaffected by science. Because of scientific developments religion underwent significant modification. However, the blows which mistakenly fell on religion were intended for its enemies.

The natural philosophy developed in the seventeenth century posed two problems for religion. First, it could promote an intellectual arrogance which would lead a man to prefer his own notions to the inspired Word of God. Second, it could easily lead (as it did a century later) to a purely materialistic philosophy. Seventeenth-century scientists were well aware of these two possible dangers and rose to the occasion. Their response was thoroughly reverent. They sought no open confrontation of science and religion, but instead strove for a reconciliation of the two. The study of nature was for them a positive religious experience. Wherever their investigations led, they found themselves following God's footprints. They were certain that the revelations of nature could not contradict the written Word. Their enterprise was not one of overthrowing but of updating Christianity.

The most valuable contribution of Professor Westfall's book is its documentation of the abortive maner in which the virtuosi pursued their reconciliatory end. Being Christians before they were scientists, they easily saw themselves as having demonstrated that nature reveals the Creator. Today's historian, however, sees them as showing how anyone bent on worshipping God can force the creation to reveal Him. For example, their conviction that nature was law-governed was less a conclusion from science than a premise from Christianity. Christianity also led them often to impose a pattern of fatherly benevolence on nature to the exclusion of any evidence of squalor and suffering. From this rosy conception came circularly the conclusion that divine beneficence created the world. Over and again the virtuosi proved the existence of God from assumptions in which it was already implicit. To see this is not to condemn these scientists but to understand them. No wonder that they saw God's glory in His works; they were looking into a mirror which reflected their own religious minds.

In spite of their pious intentions, scientists in the seventeenth century nonetheless elaborated a natural philosophy which posed problems for traditional doctrines; for if nature were governed by the mechanical laws of motion, there was then no room for a full doctrine of divine particular providence. The idea of particular providence had to be limited only to salvation and spiritual welfare and in fact had to cede to a weaker conception of divine general providence in which the Creator merely preserved the system and its laws indirectly. Such a reformation of the doctrine of providence tells much about the religious attitudes of seventeenth-century scientists. Rather than dismiss the idea of providence, they sought (albeit with costly concessions) to preserve it by a re-interpretation. They did not come to religion with the yardstick of science, nor did they regard the two as contradictory. Instead they would show the two both as aspects of one body of truth. Did they injure religion? No, for in challenging those who found the hand of God in every unusual physical event they cut away the tumors of enthusiasm and superstition. In their modification of the idea of providence they truly reconciled science and religion.

Where the virtuosi in their well-doing inadvertently harmed Christianity most was in their avid attempts to suppport it by natural religion. Their excesses in this respect sapped Christianity of almost all its spirituality, for rather than supporting Christianity by natural religion they went so far as to equate the two. Pushing aside cardinal spiritual elements of Christianity, denying that anything important transcended their reason, they made Christianity a reasonable religion for reasonable men. Doctrines above reason were dismissed as inconsequential, all in the effort to support Christianity, to adapt it to the times. Christianity was preserved only by emasculating it. Nonetheless there is a subtle but important distinction between rejecting Christianity in favor of natural religion and equating the two. There is a great difference between the seventeenth-century virtuosi and the eighteenth-century *philosophes*. Uncertainty characterized the former, open doubt the latter. The virtuosi proved God's existence and showed His evidences repeatedly—but so repeatedly as to disclose insecurity. What was to be thought of miracles? Could religion stand the test of reason? Did it need purgation? Scientists of the age fervently sought for certainty which was not to be found. Following the birth of modern science, the age of unshaken faith was lost forever to Western man.

One's very reasons for membership in the American Scientific Affiliation are also reasons which compel him to read this provocative book. In it an accomplished historian of science carefully presents the views of a past century (which was of signal importance in shaping our present world-view) on issues which still concern us today.—Reviewed by *Peter Anton Pav, Mathematician, U.S., Dept. of Defense.*

GENESIS by E. A. Speiser
Garden City, New York: Doubleday, 1964

This is the first of an important series of translations with commentaries of the books of the Bible by a group of interfaith scholars under the editorship of W. F. Albright and David N. Freedman. Professor Speiser was the chief translator of Genesis in the new version of the Torah published by the Jewish Publication Society in 1962. He is one of the leading authorities on Akkadian—the language used by the Babylonians and Assyrians. He adduces some interesting insights into patriarchal customs from the practices of the Hurrians (biblical Horites), who flourished in northern Mesopotamia in the 15th-14th centuries B.C.

He suggests that Abraham's statement that Sarah was his sister may have been based on Hurrian practice. It was customary for a husband to adopt his bride as his sister as this gave her higher status. Jacob's purchase of Esau's birthright finds its parallel in Hurrian society. Rachel's theft of the *teraphim* or idols can be explained as an attempt to insure the legitimacy of inheritance according to Hurrian custom. (Cf. Cyrus Gordon, "Biblical Customs and the Nuzu Tablets," in *The Biblical Archaeologist Reader, 2,* Garden City, N. Y.: Doubleday Anchor, 1964, pp. 21-33.)

The most striking departure from traditional renderings is Speiser's translation of the first two verses of Genesis, which he renders as follows: "When God set about to create heaven and earth—the world being then a formless waste, with darkness over the seas and only an awesome wind sweeping over the water—God said, 'Let there be light'." The rendering of the first verse as a dependent rather than as an independent clause would mean that instead of a statement of *ex nihilo* creation we would have simply an expression describing the circumstances at the time of the action of the main verb, in this case, "God said." Although the construction may be argued on grammatical grounds, Speiser sets forth as his strongest argument the resemblance between the Genesis story and the Babylonian Creation Myth. "Perhaps more important still, the related, and probably normative arrangement at the beginning of *Enuma elish* (the Babylonian Creation Myth) exhibits exactly the same kind of structure . . ." (p. 12) The text in question reads: "When God set about to create heaven and earth—When on high, heaven had not been named, firm ground below had not been called by name . . ."

The parallelism between the creation account in Genesis and in the Babylonian myth is by no means obvious. In the latter account Marduk succeeds in slaying the goddess Tiamat, and then splits her carcase to form the heavens and the earth. J. V. Kinnier Wilson comments: "As to the only other serious proposition that has been made in favor of a relationship between the two accounts, namely, that both works follow a common sequence for the acts of creation or other events which they describe, we believe the comparison to be partly artificial, partly explainable in terms of coincidence. Thus it seems very probable that the epic has no connections of any kind or at any point with Genesis, and that each is *sui generis.*" ("The Epic of Creation," in *Documents from Old Testament Times,* ed. D. Winton Thomas, New York: Harper Torchbook, 1961, p. 14.)

To support his case for his rendering Speiser cites Alexander Heidel's *The Babylonian Genesis* (Chicago: Univ. Of Chicago Press, 1954). But Heidel himself argued for the traditional rendering of the opening verses, as does E. J. Young in *The Westminster Theological Journal,* XXI (1959), 133-46 and XXIII (1961), 151-78.

Although the parallels between the biblical and the Babylonian accounts of creation are dubious, the parallels between the stories of the Flood in Genesis and in the Babylonian Gilgamesh Epic are undeniable. A recent article by an archaeologist, M.E.L. Mallowan, "Noah's Flood Reconsidered," *Iraq,* XXVI (1964), 62-82, maintains that both accounts are traditions about a flood which occurred during the time of Gilgamesh, whom we now know as a real king who lived c. 2700 B.C. For a judicious comparison of the numerous parallels see Alexander Heidel, *The Gilgamesh Epic and Old Testament Parallels* (Chicago: Univ. of Chicago Press, 1954). The resemblances make the difference between the two accounts in moral outlook more strikingly profound. The Atrahasis Myth tells us that the Babylonian gods sent the Flood because mankind had become too noisy for them to sleep. When the Flood came the gods cowered in fear. When the Babylonian hero offered sacrifice after the Flood, the gods, who had been famished, "gathered like flies . . ."

The commentary on the Joseph narrative is less rewarding since Speiser is not an Egyptologist. For a work which supplements Speiser's in this respect, see J. Vergote, *Joseph en Égypt* (Louvains: Publications Universitaires, 1959). What may be dismaying to the layman for whom the series is intended is to find that nearly half of the exposition is taken up with the assigning of verses to the hypothetical J, E, D and P documents.—Reviewed by *Edwin Yamauchi, Rutgers University, New Brunswick, N.J.*

EDITORIALS

HALDANE, FINITY AND EVOLUTION

One of the most brilliant eccentrics of our time died in December, 1964. J. B. S. Haldane will be remembered not only for his prolific work in genetics but also for his extreme thinking in many spheres; thinking that seldom stopped at the thought stage but was put into action. Shortly before he died Haldane recorded his thoughts on death and the finity of man.

His acute view of the individual as a defined unit in time appeared as an essay titled "On being finite" in the *Rationalist Annual.* Here Haldane remarked that man's belief in death as an inevitability is probably of quite recent advent. Primitive men probably never saw death from old age. The life of a hunter was a precarious one—a slight wound could be fatal; a man might be killed if his brother coveted his mate. Before he was very old a man began to lose his youthfulness and then there was no easy retirement. Natural selection would take over—the survival of the fittest. Since no man would have seen the natural expiration of life, Haldane maintained that he would thus be able to believe in the possibility of physical immortality. If life ended so abruptly and apparently always by some outside agency then there might always be the possibility that if those agencies could be avoided life would continue. This is a simple thought that is not inconceivably outside the capabilities of a simple intellect such as we believe we can ascribe to the earlier men.

From this thought Haldane developed ideas on the finity of modern man and his own attitude to death. He advocated an Epicurian approach—if we acknowledge life to be finite we can act upon this knowledge to our advantage. These ideas are not unreasonable and indeed may seem obvious to an avowed rationalist.

To revert to the original idea that primitive man might have believed in a possible immortality, it is a characteristic of our age that many minds are busy trying to find out how other minds function. The West tries to understand the East. The modern science historian or philosopher tries to understand the processes that went on inside the mind of Einstein. How little these people have achieved! How slight then is the possibility that we can have any true appreciation of the level at which those cave dwelling hunters might have thought! We see them as animal forms with physical characters close to our own, but when it comes to the "spirit" of these beings we become so painfully aware of the shortcomings in our concepts of the mind.

Perhaps Haldane was aware of this when he went to live in India. Eastern civilizations knew much of the workings of the mind, had a great power over the mind, at a time when technology or even science meant nothing to the West. Perhaps Haldane hoped to fuse his own remarkable intellect with some of the more ephemeral thinking of the East.

That physical death is inevitable is accepted today and it would seem not unreasonable that prehistoric men had the same idea. If, as Haldane suggests, it was possible to accept that, but for the intervention of unnatural causes, life might continue, is it not possible and indeed more likely, that he was able to conceive of some cause for unnatural death—some inevitability about the unnatural death. After all, to him death by what we today call accident must have seemed to be inevitable; that is provided we recognize that this was the only form of death. Perhaps there was even some divinity to explain this inevitability. A divinity could explain the "accidents" that implemented the inevitability.

To Haldane evolution was a reality as it is to most thinking people today. That is, evolution in the biological sense. Outside of this there is perhaps a danger in searching for evolution. Haldane looked for an evolution of an attitude towards death. He thought of a progression from a belief in a possible immortality to knowledge of the finite nature of life. This evolution of attitudes—essentially an evolution of thought—is possibly something very different from evolution of the Darwinian type.

It is nowadays not uncommon to hear people speak of this evolution of thought—we must be wary of such terminology. It may not always be possible to effect a direct transference of scientific concepts to be applicable in other spheres.

Bevan M. Gilpin, M.S.C., Assistant Editor, *Laboratory Practice*, 9 Gough Square, Fleet Street, London. E.C4. Reprinted by permission from the issue of March 1965.

SCIENCE AND RELIGION

"In the beginning God created the heaven and the earth" (Gen. 1:1). Here, in the very opening words of the Bible is the start of the story of creation. It all sounds so simple and straight-forward, which in part it is. Like the iceberg, however, the further beneath the surface one goes the more massive becomes the subject. Sometime ago a Belgian priest, Georges Le Maitre by name, proposed the theory that all the matter of the universe was once gathered together in a huge ball. With the passage of time, the attraction of gravity increased so that finally the pressure and temperature of the huge mass became so high that it exploded like an atomic bomb. "Thus our universe began its first day with a Big Bang," explains one prominent scientist, according to a recent report by the Religious News Service. He continues by showing how this harmonizes with such Biblical phrases as "God separated the light from the darkness" and "without form and void."

Well, perhaps so. We wouldn't know. Science is not our forte. Furthermore, while not wishing to be flippant or ungrateful for help along the pilgrim pathway, isn't conflict between science and religion somewhat inevitable? The two fields of intellectual endeavor are so very, very different. Furthermore, life

without tension would be frightfully dull and would surely result in stagnation. Let science challenge faith. If faith be faith it can only be strengthened, and science certainly cannot be harmed by faith.

Lawrence T. Slaght, Editor, *The Watchman-Examiner*. Reprinted by permission from the issue of Oct. 21, 1965.

THEISM AND THE ORIGIN OF LIFE

A common argument in favour of the existence of a deity is that scientists cannot explain the origin of life on earth. Scientists, of course, cannot explain, in any ultimate sense, the origin of anything. All they can do in the case of living things is to try to explain them in terms of how they are built and of what they are built and thus how they come to behave in certain ways. This leads to explanations largely in terms of physics and chemistry, which may resolve themselves into explanations in terms of protons, electrons, etc., which may be described as "ultimate particles". It seems that no final explanation on these lines will ever be possible, for what are considered ultimate particles at any particular stage of scientific advance will always be, at that point of knowledge, inexplicable in themselves.

Most biologists assume that life arose on earth as the result of a rare concatenation of circumstances, *i.e.* because the physico-chemical conditions were "just so". And it is assumed that if these conditions, or something closely approximating to them, should exist on some other planet, life will have arisen there too.

How does God fit into this picture? "God" is the reason given by theists for the existence of the world (or cosmos), which he is said to have created *ex nihilo*. The "something" which came out of the "nothing" was presumably the present universe, which is made up of primary particles, of which God alone knows the ultimate nature. But, given this nature, primary particles, it seems, under certain circumstances undergo chemical evolution leading to the first forms of living things, which in turn undergo further transformations by organic evolution. (Why kick against the pricks? Evolution as a general principle in biology must be accepted.)

Thus the origin of life should be no more mysterious than the origin of protons and electrons. Those who can accept ultimate particles without assuming the existence of God but insist that God is a necessary prerequisite for the origin of life, are not being very consistent.

Atheists, and theists of the modern school, who accept evolution, both chemical and organic, as part of nature, share a logical outlook on the world, and they can agree to differ. But fundamentalists who accept the theories of physical scientists without question but jib at the theories of biologists are definitely an anachronism in the modern world.

EDWARD ROUX, Johannesburg, S. Africa

LETTERS TO THE EDITOR

ABRAHAM AND THE STARS

There are several questionable assumptions and serious errors in MacRae's "Abraham and the Stars" (September, 1965). That they are common, and so escaped the editor's blue pencil, makes them even more harmful.

First, it is assumed that Abraham knew the number of visible stars. Since as late as 1602 Europeans were worrying whether there might really be more than 1022 stars, and since it is extremely difficult to count a random pattern without superimposed grids or other aids, this assumption is of doubtful validity.

Second, God had already told Abraham his seed would be innumerable (Gen. 13:16; 15:5—note God's implied question about the stars—; 16:10) before He referred to the sand of the seashore and the stars. Therefore, this last statement must be understood as saying: As you cannot number the stars or the sand, so you cannot number the seed which I will give you.

Third, to import either supposedly ancient or known modern estimates makes God contradict Himself, the most serious objections of all to MacRae's interpretation. How can God say to Abraham: "Your seed will number abut 2000, innumerable"? How can God say to us: "Abraham's seed will number about 10^{28}, that is, about 10^{26}"—or whatever the latest figures are? And how can one liken the 3×10^9 living human beings, or the estimated 6×10^{10} human beings who, on evolutionary grounds, have ever lived, with 10^{28}? And this does not emphasize the smaller number of persons who are physically or spiritually children of Abraham. I cannot believe that God can talk such nonsense. Yet MacRae cannot see that his statement leads to such contradiction.

In the light of MacRae's known scholarly competence, such a serious lapse is a warning to all of us to beware of letting our convictions determine the nature and form of our arguments.

David F. Siemens, Jr.
Riverside City College
Riverside, Calif.

It is one thing to have an idea: it is quite another to express it so clearly that one may be sure that men who are working in a different field will correctly understand what one desires to say. Since Mr. Siemens received the impression that he did from my article on "Abraham and the Stars," I am forced to conclude that there may be many others to whom I also failed to convey the thoughts that I had in mind. I am grateful to him for calling this to my attention in this way.

It would be a real help to me in planning future publications if other readers would look up my article in the issue of September, 1965, and would inform me whether they did or did not receive from it the impression that Mr. Siemens received, and would point out to me the specific statements in my article that lead them to this conclusion. Such letters could be addressed to me directly, or in care of the Editor of the Journal.

It was not my intention to say that Abraham knew the number of the stars, but to point out that before the invention of the telescope almost any intelligent person could be expected to realize that the total number of visible stars was less than the population of a rather small town, and that it would be strange indeed to use the number of stars as an illustration of a vast number of people (called "a great nation" in Gen. 12:2, and "many nations" in Gen. 17:5). Abraham (or a later reader) might well have said: "The dust of the earth (Gen. 13:16), or the sand upon the seashore (Gen. 22:17) would be an excellent illustration of a vast progeny, but it is surely strange that God should use the stars in the sky for such an illustration. The stars might well represent a glorious seed, or a spiritual seed, but would hardly seem to be a proper figure to show that their number is to be extremely great."

The *Encyclopedia Americana* (1962 edition) says in its article on "Stars":

> Modern counts show that roughly there are only 6,000 stars in the whole heavens of these six magnitudes which are visible to the unaided eye. As only half the sphere is above the horizon at any moment, and as all faint stars are blotted out by near proximity to this place it is doubtful whether the average person would ever count 2,000 stars on a given occasion.

Mr. Siemens' analogy of the difficulty of counting "a random pattern without superimposed grids" is hardly applicable since the stars present a fixed pattern, slowly revolving, and showing great variety of degrees of brightness. When there were no street lights to keep people from being vividly conscious of the revolving sphere of stars, most people would come to know a great many stars, almost as if they were personal friends. This was true even one hundred years ago. The Babylonians gave descriptive names to the various constellations, and many of the same names are used by astronomers today. Doubtless many a person, sitting outside through the long evening, without the opportunity of reading by artificial light, whiled away the time by counting the stars associated with particular constellations.

Abraham is noted for his faith in God. He knew God's promise would not fail. He trusted God's Word. Even if all the evidence then available suggested that the divine use of the stars as a figure for an innumerable multitude was not true to the visible facts, he could have faith that God's Word was true. Mr. Siemens himself gives evidence of the unfitness of the number of stars visible to the naked eye to represent a vast multitude, by his statement that in the somewhat hazier skies of Europe in 1602, before the telescope was available, men wondered "whether there might really be more than 1022 stars." The apparent unfitness of the illustration should have been obvious to any intelligent person. Then science moved forward. The telescope showed the existence of innumerable stars, whose existence would hardly be suspected before, unless it were inferred from the statement in Genesis.

We must study the Bible with great care, being careful not to read into it anything that is not there. But when a fact or inference is as clear as this one about the stars actually being far more numerous than was apparent to the science of the day, we can safely rest upon the Biblical statements, knowing that future scientific discoveries may well add further proof, as in this case, of its complete dependability.

It was certainly no part of my intention to suggest that the Bible meant that the number of Abraham's descendants was to be the same as the number, either of the grains of sand, or of the stars. In the Biblical context both are clearly intended simply as illustrations of great numbers. But it is interesting that the illustration that seemed not to fit at all has proved, in the light of new discoveries, to be actually a far better illustration for the purpose than the one that formerly seemed to present no difficulty.

Allan A. MacRae

THE SCIENTIST AND HIS FAITH

This article (John A. McIntyre, December, 1965) stimulates me to add that the academic (and professional) disciplines of economics, political "science," social "science," education, and even psychology are structured as if the *fundamentals* of religion did not exist. They comprise no components of morality or spiritual emphasis as expressive of religious (spiritual) needs. No wonder our world today ignores religion. Even in our church-related colleges, we teach students that the above subjects have no place in the religious picture—or better said, religion has no relevance.

McIntyre calls for the A.S.A. to get busy and do something constructive in these fields. If the A.S.A. does not, who is there that is capable or interested? Instead of devoting our energy to defensively warding off the attacks of adverse critics, we should (as responsible Christian men of science) take the offensive. "The best defense against an enemy's fire is a well-directed one of your own," said Napoleon. Someone else has said that "continents are not discovered in the harbor."

J. H. Shrader
Waterville, Vermont

Dr. McIntyre's views that Communism is no longer a threat to the Free World is a delusion and not in accord with the facts. Russia remains our number one external enemy and the Communist Party USA continues to exert influence far beyond the number of actual party members. Mr. J. Edgar Hoover, Director of the Federal Bureau of Investigation, clearly spelled

out the dangers of internal subversion in his 1965 Annual Fiscal Report to Congress. Communist infiltration of the civil rights movement, the current "peace" offensive, and revolutionary efforts in Latin America and elsewhere were identified in Mr. Hoover's report. As Christian men of science we should be alert to this problem and ready to cite evidence if need arises to convince the average uninformed American citizen. Our sole concern should be for truth, even when unpleasant; wishful thinking should play no part in our interpretation of current events. Christ himself said: "Ye shall know the truth, and the truth shall make you free." And may I add parenthetically, . . . and keep us free.

Donald W. De Jong
Research Biologist
Western Regional Lab
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Regarding the question which related the Christian to his vocation. Here I feel is the paper's greatest value. I should care only to add the observation that the early church flourished not by virtue of the missionary efforts of Paul, Barnabas, or Peter, but as the Holy Spirit empowered the common man. If 3 out of 5 in the market place were slaves, it is not likely they were all won by mass evangelism or "full time" Christian ministers. I would judge that any Christian should be exactly what God has put in his heart to be—neither more nor less. A chief constraint is to ensure that to which we find our heart devoted is truly from Him rather than self.

It is true, however, that the New Testament norm is for a Christian to live a fruitful life. God *is* honored by a well turned loaf of bread from a baker, but what does the Bible say is the fruit of the Holy Spirit? And can one imagine a life in which such fruit abounds and yet lacks influence in its environment? We are told both that "He that wins souls is wise", and whatever we do should be done to the glory of God.

It may be that God's method of scoring is radically different from what we are accustomed. To produce with one's efforts ten loaves of bread is better than to produce just one. If the human soul is priceless in God's sight, are the many won to Him by the "full time" minister of greater value than the few by the professional doctor, scientist or teacher? Especially if the latter reach some successfully that the former could not because of a pseudo-scientific barrier perhaps? Will God be satisfied with only a part of His fold filled? The dedication of one's energies as exclusively as possible into direct service of God is indeed a high calling, and should ever be recognized as such. At the same time, no professional person, tradesman or bondman need apologize for the stewardship of his talents, *if* he is where God wants him. His only defense need be "I am not a _____ because God has not called me to be a _____". If truly spoken, then let him be a Christian workman in the New Testament pattern.

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SOME LOGICAL PROBLEMS WITH THE THESIS OF APPARENT AGE

1) In the last paragraph (Thomas H. Leith December, 1965, page 119) I fail to follow the transition from "logically unknowable" to "logical impossibility" as given by Dr. Leith: "We have already seen that the truth or falsity of the statement is logically unknowable if based upon any study of the facts on which it bears . . . Consequently the entire statement is a logical impossibility . . ." I agree that the fact of an apparent age not equal to actual age would be logically unknowable, but I fail to see how this makes it logically impossible to state that such a thing is true. I also grant Leith's recognition of such a thesis as an untenable hypothesis, on the grounds that no scientific evidence for or against it could be obtained, (barring observation of earth's creation by some outside entity) as correct. But just because an hypothesis is untenable for lack of evidence does not make it incorrect. As far as I know, I am justified in the sight of God, and though I am living on this "hypothesis", I would not even attempt to prove it.

2) On page 121, Whitcomb and Morris, authors of *The Genesis Flood,* are misunderstood, in my opinion. Leith's statement that "now we have a thesis [of Whitcomb and Morris] wherein the earth, which had this initial apparent old age, suffers catastrophic change in its appearance and processes so as to destroy (presumably) much of even this apparent built-in age." If I read Whitcomb and Morris correctly, a main theme was that the Flood *added* to the apparent age of the earth because of greatly increased sedimentation rates during this time.

3) I would like to take issue with a sentence in the last paragraph of Leith's article: "And, thirdly, one wonders why deity should be so malevolent . . . as to fool us on such interesting matters as much of the history of past events and the possible ages of many things, especially when it is the sort of delusion from which we poor mortals cannot escape!" II Peter 3: 4-8 (KJV) seems to say that "in the last days" men "*willingly* are ignorant of" such maters as the flood. This is not due to any malevolence of "deity", but deliberate ignorance or misinterpretation of the facts. I do not wish to say that Dr. Leith, or anyone else, is doing this, but it is at least logically possible!

The passage goes on to say that "one day is with the Lord as a thousand years, and a thousand years as one day." I don't claim to know all that this means,

but it seems certain that there is something inconstant about time.

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In volume 17, number 4, you carry an article by Dr. Leith which I read with interest. My expectation turned to disappointment and then shock. I find it difficult to believe that this represents a refutation of the Morris-Whitcomb thesis. Surely the first portion of the article is irrelevant. If the theory of apparent age is a logical absurdity simply because there can be no empirical evidence to prove or disprove it, then the same rule must apply to other theories that suffer the same defect. The one that comes immediately to mind is the theory of evolution. After stating seven assumptions basic to a general theory of evolution, Dr. Kerkut states: "The first point that I should like to make is that these seven assumptions by their nature are not capable of experimental verification. They assume that a certain series of events has occurred in the past. Thus, though it may be possible to mimic some of these events under present-day conditions, this does not mean that these events must therefore have taken place in the past. All that it shows is that it is *possible* for such a change to take place. Thus to change a present-day reptile into a mammal, though of great interest, would not show the way in which the mammals did arise. Unfortunately we cannot bring about even this change; instead, we have to depend upon limited circumstantial evidence for our assumptions, and it is now my intention to discuss the nature of this evidence." (*Implications of Evolution* by G. A. Kerkut, The MacMillan Company, New York, 1960; page 7, second paragraph.) It must be seen that what is lacking is not only a certain amount of empirical data to prove the possibility, but the capacity of any evidence to prove what actually did happen.

One may decide that by pressing naturalistic presuppositions into service, evolution can be demonstrated to be the most probable explanation. In the presence of the supernaturalistic account by the Creator (which Genesis 1 claims to be) it would seem to be more prejudice than proof.

Dr. Leith does press naturalistic presuppositions. On page 120, he states: "But all *scientific* talk leading to a first moment for anything must be based upon extrapolations from pertinent present data and processes using certain cosmological principles." Four presuppositions are involved, though not clearly defined: (1) certain cosmological principles, (2) natural processes, (3) present data and (4) the process of extrapolation. These can be theistic if they are seen to apply only to the providential activities of God, and, therefore, incapable of explaining those events which are the result of His direct intervention. Otherwise, all that is miraculous must suffer the fate of being logically absurd. For instance, the bread that fed the multitude (John 6:5ff) must have seemed in every respect to have been the product of the fields of Palestine, having been sown, harvested, ground and baked, but it was not. The fish also would appear to have a history which they did not actually have. There would certainly be, in this instance, an appearance of age if we applied the four naturalistic presuppositions in studying the fish and bread. If, however, we are guided by the record we would see the irrelevance of the presuppositions.

On page 122, Dr. Leith finally discusses the record of the flood, but only in the most general terms. His first consideration, the content of the record, is a matter for exegesis. His second is a matter for apologetics. In this case, he is delayed by neither. Exegesis, which should carry the day, is replaced by matters of philosophy. He brings to the record of the flood concepts of the character of God, of His relationship to His Creation and of man's role in Creation which make exegesis unnecessary.

These concepts, then, settle the whole issue for Dr. Leith, but he leaves them unstated! Would they not settle it for all of us? Are they not cogent enough for even Morris & Whitcomb? With the basic issue finally laid bare, why isn't the battle joined? The real argument must be about these concepts. They should have been carefully clarified and then verified. Instead, they are only hinted at. He seems to be saying, "If you knew what I know, you would believe as I do"—an obvious truism, but certainly not proof of his position, not even argument in its favor. We were surprised when Clay knocked out Listen with one apparently weak punch. But now, Leith has knocked out Morris & Whitcomb with no punch at all!

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Dr. Leith applies the word "impossible" to any assertion that cannot be subjected to a scientific proof. This implies uniformitarianism as it allows no change in any of the fundamental processes of physics and chemistry on which the geological processes are based. If any one of these processes changed, it would be impossible (as Dr. Leith uses the word) to determine which had changed; any one could be chosen as standard.

The second implication of Dr. Leith's application of the word "impossible" is that every assertion about the supernatural is impossible. Such assertions as "God exists" and "God is Love" are impossible because they cannot be subjected to scientific proofs. Dr. Leith says, though, ". . . surely we can grant that logical possibility as we have defined it does not exhaust meaning." The two assertions above, then, are meaningful, though impossible. With a proper definition of terms this is, of course, acceptable, but I feel that Dr. Leith's definition tends to confuse rather than to provide a useful result.

I do not wish to take a position on either the Morris and Whitcomb view of non-uniformity or the uniformitarian view, but I do see the implications of the Morris

and Whitcomb view differently than does Dr. Leith. If Morris and Whitcomb are correct in asserting that the Bible tells us of a non-uniformity in our fundamental laws and/or that it does not allow for millions or billions of years as the age of the earth, then God is not fooling man, rather man is going on a vain search in spite of what God has said. The same should be considered in other areas of science, such as our attempt to create life.

Biblical revelation as well as science is a means of gaining knowledge for the Christian. Since much of what is revealed cannot be subjected to a scientific proof, it seems best to define the term "possible" such that Biblical truths are also possible truths.

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My argument involved the following important points.

1) A proposition is logically impossible if, though it is internally consistent, any evidence appropriate to it is at the same time both evidence corroborating and evidence falsifying it.

2) The proposition "The knowable universe began with an apparent age considerably greater than its actual age" is logically impossible. It entails that the knowable universe began at some actual date *and* that its apparent age at that time was considerably greater than its actual age. The second part of the conjunction is a logical impossibility, hence the entire conjunction is logically impossible. The only escape is to accept only the first part of the conjunction and base its corroboration on (say) revelation. Such revelation, however, provides no escape from the absurdity of the second part of the conjunction.

3) The corroboration of the proposition "The knowable universe began at some (given) date", where science is useless in determining this date, must rest on an exegesis of special revelation using correct hermeneutical principles if it is to be taken seriously. I have to be shown that the principles used by advocates of the 'apparent age' thesis are even likely to be correct. I also find the thesis repugnant in its theological implications where the theology is based on a coherent interpretation of Scripture.

4) I do not agree that the miracle of Lazarus or the feeding of the multitude are analogies to 'creation with built-in age.' They are seen as miracles because they are hiatuses in the regularity of natural events; the 'creation with built-in age' has not, and cannot have, such evidence. To believe it one must rest one's case on something like special revelation and that has the difficulties noted in (3).

5) Whitcomb and Morris hold a thesis containing the 'apparent age' thesis and other complications. They fail to convince on their exegesis and they leave one in theological difficulty, although no attempt was made to more than outline this. Their major error lies in their committing most of the blunders mentioned above and in their failure to recognize that their criticisms of ordinary geological thinking are both based on misunderstanding and irrelevant in any case to their version of the thesis of 'apparent age'.

Thus in reply to Mr. Thompson let me point out that a proposition like "Organism A changed into organism B by micro-evolutionary events" is not a case of (1) above. Even if one believes that the proposition is false, one can imagine some scientist observing a past unexplainable origin of B.

Clearly, evidence against the truth of the proposition from observing nature is potentially available, however hard it is to obtain. It is quite another matter to claim that we cannot extrapolate with assurance into the past from present knowledge. On certain assumptions we think we can do so fairly well sometimes and more poorly at other times but we, as believing scientists, should be unwilling to do away with our assumptions unless they don't work or unless Scripture demands we do so. Miracles like the raising of Lazarus are examples of the latter but Genesis 1 and 2 don't seem to me to offer sufficient additional cases to change my usual patterns of geological and biological thinking. If this is 'naturalism' it is an odd use of the term.

Mr. La Bar's first criticism misses the argument in the paragraph to which he refers. I refer him to (1) and (2) above and to paragraph four of my paper. His second criticism fails to notice that Whitcomb and Morris believe both that the flood added to the apparent age of many areas of the earth but that what it destroyed had also an apparent age much older than its actual age. The third criticism misses my point. *All* scientists must be unwillingly confused into taking many things to be older than they are if the way the thesis of 'apparent age' considers certain things to be is the case. They, now forced to cease being a scientist in talking of much of geology and biology, can presumably have the confusion removed through revelation. If they don't listen they *are* willingly confused, but if it doesn't teach 'apparent age' it is the advocate of that thesis who must be confused.

Mr. Multhauf misreads me in his first criticism: I think it is met in my paper but I refer him to (1) and (2) above. His second criticism fails to notice that a proposition like "God exists" is surely logically possible—the evidence for it is not the same as the evidence against it. Of course it is not a scientific proposition since the normal canons of scientific evidence are not called for. Indeed, the proposition is ontologically prior to all scientific work I believe, although it is not seen to be so by the unbeliever. Thus I don't take the logical possibility of "God exists" to be an arbitrary convention. To accept or reject it is the most important decision any of us makes.

I do hope that my friends now see my argument more clearly.

Thomas H. Leith

THE ORIGIN OF THE SOLAR SYSTEM, GALAXY, AND THE UNIVERSE

(In the paper by Jack T. Kent, December, 1965, page 106,) we read "It turns out that when we have classified stars by temperature, we likewise have separated them according to their brightness, their chemical content, their mass . . .". This is not true. Rather, for any given temperature, stars of widely differing brightness and mass are found, and it is just these differences that form the observational basis for much in modern theories of stellar evolution. In the same paragraph we find, "One says the following apothegm: 'Why, Oh Be A Fine Girl, Kiss Me, Nay, Romeo, Scram.' The first letters of these words form the stellar classification known as the Spectrum Luminosity Diagram, or the Henry Draper Classification, or the Hertzsprung-Russell Diagram." As Mr. Kent must be aware, this again is not true. The letters he refers to represent a classification of stars by spectrum only, and it is not until these spectral classes are graphed using absolute magnitude as the second variable that a Hertzsprung-Russell diagram is obtained. Further along (page 107) we read, "The open clusters are called Galactic clusters, since we see them only close at hand because of their smaller brightness." Not so. These clusters are called galactic because they occur most frequently near the galactic plane (the plane of the Milky Way). A bit farther we are told, "Certainly you can see that if sufficient material is present in some region of space, this same Rotational flattening effect will form a galaxy. The only thing left to do is to ask why the material collected together and rotated in the first place." I believe that in reality the problem of the origin of galaxies is far more complex than Mr. Kent would seem to imply in these remarks. There are also minor errors. On page 106, we find that "Pluto, at 39 AU, is so far away from the Sun, that the Sun appears only as a dim star in its sky." This is a common misconception, but a simple calculation will show that, as seen from Pluto, the sun would have a magnitude of about minus 19, which means that it would appear about 5 million times brighter than Sirius, the next brightest star visible.

Finally, a point which to my mind raises the question of the purpose of the Journal. In the introduction (page 104) to Mr. Kent's article we are told that "A correlation will be made between the various theories presented and the Bible." and, "This will involve the question of time, the stumbling block over which so many people fall when trying to separate science and the Bible. It will be shown in clear detail that there is no conflict here." Yet, in the article itself, I found no attempt whatever to establish any connection between the subject under discussion and the Bible or Christianity. Another article in the same issue, William F. Tanner's "Chronology of the Ice Ages", while interesting, again made no direct references to the relationship between science and scripture. Is the purpose of the Journal to discuss the relationship between science and Christianity? If so, why do these articles say nothing on these matters? On the other hand, is the purpose of the Journal simply to serve as a vehicle which might (or might not) be published elsewhere? If so, in what sense is the Journal a "Christian" publication?

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As you know, I was requested to give a nontechnical paper at your meeting, one that would at least be scientific, but not go into too many details. This I tried to do. His numbers are correct in his letter. Most of his points mentioned are well known. However his points in no way obviate the basic tenets of the paper.

Jack T. Kent

God has revealed himself to us in two ways: in his world (Ro. 1:19,20) and in his word. These two revelations *must* agree; if they do not appear to do so, it must be because we are misinterpreting either one or both.

Furthermore, we are specifically commanded to carry on that activity which we now designate as science (Gen. 1:28, we are to subdue, or exercise control over, the earth; Psalm 8:6, we have already been handed the responsibility for controlling the physical world; Job 37:14, Job was told to study the physical world; Psalm 77:12, extends the same instructions to the rest of us). In other words, the scientist (if he is a child of God) performs an act of worship when he carries out a specific bit of research.

One of the important areas which is of interest to the scientist who is also a Christian is the area of earth history. A great deal is said today to the effect that science and the Bible give different accounts of the past; of course they do. But many people infer that because these accounts are different, that they are therefore also contradictory. It is up to the Christian, in view of the specific commands summarized above, to investigate this matter.

The Ice Age article, referred to by Mr. Krause, was a "state of the art" review of part of earth history, for the benefit of those persons not conversant with the pertinent literature. The picture which was reproduced in that article is not a final product (science is never static), but it contained the best available thinking at the time the article was written. Furthermore, it is highly unlikely that modifications of detail will alter the basic framework of this history. Therefore the Ice Age article can be taken as the scientific half, pending additional developments, against which the Biblical interpretation half must be matched. If there are points of mismatch, we must re-examine *both* halves until we are able to reach a better understanding. Hopefully, the *Journal of the A.S.A.* will continue to publish articles which permit us to study both halves, in those areas where matching has been, or is still, difficult.

William F. Tanner

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