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"The fear of the Lord is the beginning of Wisdom." Psalm 111:10

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THE SOLUTION OF SEEMING CONTRADICTIONS: NOT EITHER-OR BUT BOTH-AND

W. JIM NEIDHARDT*

Complementary descriptions of paradoxical phenomena in science and theology are examined. Such descriptions are shown to be useful in both fields of human activity.

A commonly held notion of modern man is that methods used in scientific solutions to problems are radically different from methods of theology and by implication more rational hence superior. The purpose of this paper is to show that this is not necessarily the case and further that both fields of human endeavor can learn from the other's experience.

Physicists at the beginning of this century were confronted by radically conflicting experimental behavior: Light exhibited clear wave-like behavior in interference and diffraction effects; yet in other experiments, such as the photo-electric effect, certain particle-like behavior was observed. To compound the difficulty it was soon discovered that micro-world particles such as electrons exhibited wave-like behavior by forming diffraction patterns upon scattering from crystals. Heisenberg was further able to show that this wave-particle duality of the micro-world led to a break down of the determinism of classical physics: It is impossible to make simultaneous measurements of certain pairs of physical observables to any accuracy desired. As an example of Heisenberg's principle the smaller localization ( ) of a particle in the X direction the greater of the spread ( ) in the X component of momentum of the particle for h, h being Planck's Constant. His principle means that we cannot push physical knowledge to the utmost precision we like; there are limitations which skill, patience, even money for superb instrumentation cannot overcome.

How has this problem been resolved to date? Part of the difficulty may be due to applying our understanding of one realm of experience to another, different realm. We live in a "large" world of basketballs, drops of water, ocean waves, . . . As we cannot have direct contact with the "little" world of atoms, we choose to apply our "large" world concepts hoping they may fit. Is it not then reasonable to expect that if we ask questions that force part of Nature into an uncomfortable mold we may expect some puzzles in the answers we receive?

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The existing knowledge of physics about the "little" world can be summarized as follows. Asking Nature particle questions gives particle answers and a complaint of wave ignorance. Or asking wave questions gives wave answers and a complaint of particle ignorance. Note that *both* wave and particle characteristics are observed depending upon the (experimental) question asked; attempts to explain particle behavior in terms of waves or vice-versa (that is, assuming either one behavior or the other is present) has not been successful.

The most successful solution of the wave-particle quality to date is that of Niels Bohr in what has come to be known as his complementarity principle. Bohr first pinpointed clearly the reason for the uncertainty principle:

> The critical point is here that any attempt to analyze in the customary way of classical physics ("large" world physics), the "individualality" of atomic processes, as conditioned by the quantum of action (h), will be frustrated by the unavoidable interaction between the atomic objects concerned and the measuring instruments indispensable for that purpose! . . . The action of the measuring on the object under investigation cannot be disregarded and will entail a mutual exclusion of the various kinds of information required for a complete mechanical description of the usual type. This apparent incompleteness of the mechanical analysis of atomic phenomena issues ultimately from the ignorance of the reaction of the object on the measuring instruments inherent in any measurement.[2]

Bohr then characterized the seemingly contradictory wave-particle nature of micro-world entities as complementary aspects of physical reality. Using light as an example, Bohr stated:

> Indeed, the spacial continuity (wave property) of our picture of light propogation and the atomicity of the light (particle property) effects are complementary aspects in the sense that they account for equally important features of the light phenomena which can never be brought into direct contradiction with one another, since their closer analysis in mechanical terms (the concepts of the "large" world we can actually experience) demand mutually exclusive experimental arrangements. However great the contrasts exhibited by atomic phenomena must be viewed complementary in the sense that they exhaust all definable knowledge about the objects concerned.[3]

There are a number of lessons that can be learned from the history of modern physics. The taking of concepts from one realm of experience to describe another different realm is a sometimes necessary step because of limits on the human frame of reference. It should be further realized that such forcing of the descriptions used in one experiential realm into another can lead to paradox. The great lesson of modern physics is that certain conflicting parts of reality cannot be brought together by forcing the evidence to fit one description or the other. Nor can part of the evidence be assumed false; all of it must be faced as valid. Only when these phenomena are considered as mutually exclusive aspects of the same thing does understanding occur. Indeed, the phenomena must be complementary in that together they exhaust all definable knowledge on the phenomena involved.

Biblical revelation of the nature of God and man and of God's actions in history have forced Christian Theologians to utilize similar complementary approaches to reality. Some examples follow.

Consider first the Biblical view of the nature of man as angel and yet brute. For in Psalm 8:4 we read:

> What is man that thou art mindful of him and the son of man that thou dost care for Him?
>
> Yet thou has made him little less than God, and dost crown him with glory and honor.

and yet in Gen. 2:7:

> The Lord God formed man from the dust of the ground and breathed into his nostrils the breath of life and man became a living being.

These statements show that the Bible teaches that man has been created in the image of God. He can a) think, b) communicate, c) think beyond himself, d) relate to others, e) forgive others, etc. Yet man is also linked to the dust of the earth — he is related to the natural order as is an animal. Man is limited by hunger, pain, etc., he acts by and from instinct in many things thereby being only concerned with the physical gratification of self. The Biblical view of man is thus a complementary view; only by seeing man as both angel and brute does a realistic picture of human nature emerge. As the Christian philosopher, Blaise Pascal, has stated:

> It is dangerous to make man see too clearly his equality with the brutes without showing him his greatness. It is also dangerous to make him see his greatness too clearly apart from his vileness. It is still more dangerous to leave him in ignorance of both. But it is very advantageous to show him both. Man must not think that he is on a level with the brutes or with the angels, nor must he be ignorant of both sides of his nature; but he must know both.[4]

The Biblical evidence that Jesus Christ was both truly human and truly divine in His earthly stay; the Biblical evidence that man is both free and yet under the providence of God as expressed by St. Paul in I Cor. 15:10:

> I . . . yet not I, but the grace of God which was with me.

are further areas where the Christian Church uses the complementary description to do justice to the Biblical evidence. Ignoring Jesus's humanity or his deity has led to a church without the presence of God. When the Bible speaks of Christ as man, His divine nature is set aside; when Christ is shown to be God, his human nature is set aside. Yet only when both sides of His nature are accepted as true does the full impact of Christ's work on earth manifest itself to finite man. As one last example consider the compactness of this statement of the Christian view of the human predicament modeled after Bohr's complementarity principle. Indeed, the free will present in our Christian understanding of the human situation and the ample evidence of God's providence are complementary aspects in the sense that they account for equally important features of human behavior which can never be brought into direct contradiction with one another, since their closer analysis in finite human terms demand mutually exclusive experiential arrangements. These factors are fully complementary in the sense that they exhaust all definable knowledge about the situation concerned.

In summary, it has been shown that complementary descriptions of reality are useful for both scientists and theologians in resolving paradoxial behavior pe-

culiar to their respective disciplines. The great hope of extreme reductionalists that all aspects of contradictory behavior be reduced to a single aspect is seen to be shattered by the data of both science and Christianity. Apparent irreconcilable behavior must be accepted at face value in both science and theology perhaps directly pointing to deeper, hidden dimensions of reality which our finite, limited human viewpoint cannot fully comprehend. Both scientist and theologian work to make clear the mystery present in their two respective disciplines, yet the humbling virtue of honesty requires that mystery be accepted rather than distorting the truth observed in God's world. True theology as well as true science comes from individuals who are in sympathy with the insight of Albert Einstein:

> The most beautiful and profound emotion we can experience is the sensation of the mystical. It is the power of true science. He to whom this emotion is a stranger, who can no longer wonder and stand rapt in awe, is as good as dead.[5]

FOOTNOTES

1. Niels Bohr, *Atomic Physics and Human Knowledge,* Science Editions, Inc., New York (1961), p. 19.
2. *Ibid.*, p. 7.
3. *Ibid.*, p. 5.
4. Blaise Pascal, *Pensees* and *The Provincial Letters,* Random House, New York (1941), p. 132.
5. Lincoln Barnett, *The Universe and Dr. Einstein,* Signet Science Library Books, New York (1964), p. 108.

SCIENCE AND RELIGION IN SPACE EXPLORATION

RODNEY W. JOHNSON*

Though space exploration is usually considered to reflect only scientific values, other values may include social, economic and spiritual benefits. Both the inter-dependency as well as separation of science and religion is shown in this paper to be the product of changing emphases in each discipline as well as changing cultural and environmental conditions at each stage of history. Assuming a favorable climate it is demonstrated that science and religion in the space age should become more compatible as space discoveries and scientific knowledge increase. It is suggested that compatibility can be fostered through constitution of an international committee on space science and theology whose function would be to explore questions related to the impact of space discoveries on theology and the relationship of man's spiritual goals to space exploration goals.

Introduction

Reconciliation of differences and comparison of similarities between science and religion, a popular activity of both scientists and theologians a decade or two ago, was not difficult to achieve at that time since neither discipline could be considered very advanced, as witnessed from the present age. Conversely, current literature on this subject is rather more restricted in quantity which may be indicative of either extreme journalistic caution; a rather improbable possibility or of lack of ability to define the advancements in each field sufficiently well to permit evaluation and assessment. The rapid advances in both science and religion in the age of space are eclipsing the most optimistic predictions of former years. While the accomplishments of science are dutifully recorded, faithfully documented and apparently quite widely disseminated, the same cannot be said of the changes and advancements taking place in the religious world. This may be another reason why comparisons are more restrictive. To the majority of thinking individuals it would thus appear that the divergence between science and religion is increasing. The literally "astronomical" achievements of science in the past few years have not only caught the imagination of scientists and laymen alike but also have tended to obscure the progress, if any, of the theological profession to articulate the message of God to a world whose god has become the power of the human mind.

The compatibility between science and religion, so earnestly sought by both groups should, perforce, be *less* difficult to define in the age of space since the achievements of this era in all areas of science should tend either toward or away from greater religious understanding. It should be expected that increased understanding of scientific phenomena would result in a parallel, improved and stabilized theological posture.

The title suggests that both science and religion are greatly changed from what might be considered as more fundamental or conservative disciplines of former years. We ask then, if science is adequate to explain religious experience and discovery, and can religion be compatible with scientific truth derived from space exploration discoveries? Contemporary man is driven by a desire to not only understand the imponderable, but also to define abstract ideas and philosophies in finite and analytical terms. This characteristic supports a look at this question.

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Science and Theology

The distinguishing mark of a good mind might be defined as the ability to retain two conflicting ideas or ideals at the same time, yet be dominated by neither. This is very difficult to do, even with simple propositions. With such complex topics as science and theology it becomes even more difficult; almost impossible many believe. Perhaps this is the reason so many scientists reject religion — and so many theologians reject science.

Yet rejection need not be the ultimate attitude of either scientist or theologian. Arthur H. Compton has expressed the inter-relationship of science and religion in a very positive statement, "There can be no conflict between science and religion. Science is a reliable method of finding truth. Religion is the search for a satisfying way of life. Science is growing; yet a world that has science needs, as never before, the insipration that religion offers." (1) To discover truth is not to invent it, nor is discovery of matter the creation of it.

The age of space has thrust upon mankind the unwelcome proposition that he may be capable of exploration of not only our Solar System, but the Universe itself. Whole new realms of scientific endeavor are visible which afford new challenges and opportunities for scientific discovery; only to be confronted by the theological viewpoint that man has no purpose in space. Small wonder that a conflict exists between the scientist and the theologian.

There is increasing evidence to support the conclusion that scientific discovery resulting from space oriented programs may in the final analysis be of lesser significance than the spiritual revelation accompanying these activities. (2) This evidence takes the form of increased awareness of man's purpose and function both on Earth and in the Universe in relation to his space exploration goals and with respect to his own capabilities and limitations. His confidence in technological solutions to space flight problems has been shaken by new understanding of psychological phenomena. Those elements comprising man's behavioral structure which relate to his inter-relationship with his fellow men are being revealed in greater clarity than ever before. The result may well be that an understanding of these behavioral traits and characteristics is not so much a revelation of scientific research as it is of spiritual insight, nor quite so capable of scientific correction or modification as spiritual rehabilitation.

The theologian, like the scientist, reflects an inquiring mind, searching for truth, according to Tillich. He asks the question of who God is, how he manifests himself and how man can respond to Him, Thus his "truth" becomes knowledge as God reveals himself to the theologian. This knowledge must be received before it can be imparted to others, it must be experienced before it can be described. For this reason the theologian must be capable of discerning spiritual truth, of receiving spiritual knowledge and of interpreting it to others, or he is not a theologian. He provides a vital link between God a theologian. He provides a vital link between God and man and as such must know his own strength and weaknesses, his own abilities and lack of abilities as well as mankind needs for theological expression. The theologian provides answers to questions which often cannot be expressed, to uncertainties requiring certainty, to experiences requiring validation. The scientist reflects a similar inquiring attitude in his sphere of activity, and for this reason the relationship between scientist and theologian has its roots in close associations and communion based on common attitudes towards his work. Historically the roles of scientist and theologian were complementary, not competitive.

Historic Position

Historically the roles of theologian and scientist were nearly synonomous. Indeed, the theologian was often the most articulate of individuals with respect to scientific thought and much of what is considered to reflect the scientific store of knowledge was in the era of Aristotle considered to be the product of theological discovery. Typical of this thinking is the Aristotelian concept of physical philosophy and creation.

Down through the centuries of time the paths of the scientist and theologian became more divergent and eventually became quite incompatible. Theologians attempted to relate God to a society which largely rejected God, primarily because the concept of God and belief in God did not serve the needs of that society. With the advent of the Dark Ages, man not only sank into an intellectual marsh, but so did his yearnings after theological understanding and spiritual expression. The fires of the Reformation not only burned away the false and misleading theological concepts, but also served to stimulate man's intellect toward scientific pursuits.

Systematization of knowledge probably did not reach any level of development prior to 500 B.C. though it is quite certain that its beginnings originated with both the Greeks and the Egyptians. Certainly by the era of Plato and Aristotle, systems of thought had begun to appear such as Plato's "Doctrine of Ideas," in which the relation of scientific thought to religion and philosophy had its foundations. Breaking from the teachings of Plato, Aristotle held that matter could exist either with or without a soul, but that matter having a soul was related to living things, and in this case the soul governed the state conditions of the object. This concept was rejected by the early Christians, who borrowing much from Plato, insisted on the separateness of soul and body. Thus the relationship between early science of the Aristotelian biological form had deep roots in early theological and religious thinking.

Early Trends

These roots naturally fed the growth of Christian thinking and nourished the expansion of scientific discovery well into the first several centuries after Christ. Further they supported the emergence of what might be described as a God-centered theology as opposed to paganism and spiritism so prevalent at that time. With the advent of Christ, the concept of a personal relationship to God was introduced, a concept which served to separate the scientist and theologian for the

first time. Evidence of this separation; its character and magnitude became apparent with the teachings of the Stoics and Epicurians. During this period the theologian began to emerge, reflecting an emphasis on philosophical thought rather than scientific discovery.

Stoicism assumed that man's life in all its details is controlled by the interplay of forces which are co-extensive with matter, pervading and permeating it and together with matter, occupying and filling space. Stoic philosophy assumed that these forces were knowable and that man's fate could thus be controlled through this knowledge. The best life according to the Stoics was one lived in harmony with nature, that is, God. Thus God was corporeal and had form and substance. The naturistic form of God was thus capable of acting and being acted upon, if the governing forces were known.

Epicurean philosophy was quite similar except that different forces were thought to control man's fate. Instead of a doctrine based on harmony with nature, the Epicureans taught that good and evil were based man's sensibilities by developing peace and of quiet of mind. Happiness could be produced by eliminating every disturbance to the soul, disturbances which centered around fear of death and fear of the gods. Instead of a scientific philosophy based on astrology, the Epicureans invoked the play of atoms. There was no life after death since the soul dissolved into "primordial atoms" at death, consequently fear of death was avoided. By defining a philosophic theology as well, the fear of a God of the Universe could be eliminated; since God was so far off he does not trouble man and is not troubled by man.

Epicurianism and Stoicism held sway over contemporary thought in the first two centuries after Christ, dominating both theologic and scientific thinking. The common factor in these and other philosophic sects, including remnants of the schools of Plato and Aristotle was a contempt for science. This attitude was not difficult to understand since science in those days had not influenced man's life in any obvious way, not operated to ameliorate man's state conditions. Science was a failure. Conditions were favorable for the advent of a new faith. This was Neoplatonism which was developed by Philo, expanded greatly by Plotinus, and ultimately absorbed all existing philosophical sects. Attracted to Neoplatonism, the educated men of the day introduced mysticism and logos into the teachings of Plato and Aristotle. As a demonstration of their thinking, the Neoplatonist would have said the Universe was made for man, whereas the Stoic would have said that man was made for the Universe. In any case, the rejection of science developed more from an inability to apprehend scientific truth and apply it to the problems of the day than from an inability to make scientific discoveries. The roots of this difficulty were embedded in the conflict with theology and philosophy; the separation of these disciplines from each other was impossible to reconcile.

Thus the fact that Neoplatonism flourished during the third and fourth century reflected both its serious rivalry with Christianity and also the gropings of man toward a faith compatible with both scientific and philosophical expression.

The decline of Neoplatonic doctrine and its subsequent orientation into Christianity has been attributed in large measure to St. Augustine (354-430). His conversion to Christianity in 386 marked the end of the attempt to define a concept of belief which reconciled both science and scientific thought with a philosophic theology. With the fall of Rome in 400 A.D. civilization decayed into the so-called dark ages, a period which presented no coherent philosophical system. Theologic belief held that science and study of the stars led to indifference to God, a view shared even by St. Augustine after his conversion. This period has been described as a pagan culture responsive to the teachings of Christ, although the religious practices were more nearly a marriage of both pagan and Christian ideas, reflected by decadent orgies and eccentric influences. In this atmosphere religious experiences were easily perverted into intense persecution and cruelty. Though this period saw the emergence of theology as the queen of sciences, theology did not speak to the condition of man as much as it did to the place and function of man in the Universe. The dominant system was ecclesiastical and exercised firm control over man's thought and action. Any real attempt at scientific investigation was suppressed, though it must be recognized that isolated work did take place such as the mathematics of Herman the Cripple (1013-1054). This is not to say that high quality intellectual work was not done because it was. The emphasis, however, was on theology, astrology and related disciplines.

Later Growth

The end of the Middle Ages and the beginning of the Renaissance during the 15th and 16th centuries marked the point in time at which an upheaval in political, social and artistic life occurred. During this period man endeavored to reconstitute himself as a free being rather than a slave of the theological system of the day. Here again, as in the first few centuries after Christ, his attempts at self-expression were thwarted by the failure of scientific knowledge to make an impact on his everyday life. Physics, mathematics and chemistry were mainly the product of monastic and theologic thinkers whose way of life did not concern itself with the common man.

Agrarian pursuits and commerce were the principle activities and industry as such did not exist. Even in countries which escaped Roman domination, such as the Germanic peoples, the emergence of science was stunted. The university professors were too satisfied with mediocrity, too bound to archaic methods, too proud of titles and degrees and too anxious to preserve ecclesiastical discipline to permit a true spirit of humanism to spread freely. The doctrine of the humanists asserting the intrinsic value of man's life before death, the magnitude of his potentialities, and the dignity of his aspirations were at variance with the theological viewpoint that man was the victim of a merciless God.

It was logical that the humanists would dominate the thinking of the Renaissance, that an attitude of primacy of man over the state, of the primacy of the affairs of man over his surroundings and the importance of his temporal aspiration and well-being should dominate his world view. That this philosophy should evolve during the Renaissance is not unexpected since the retrospective habit, strong in man by nature and reinforced by Christian teaching, saw nothing in the past to recommend the future. The intrinsic value of man's life and the magnitude of his potentialities had been largely ignored, and as a result any commonality or basis of relationship between the natural and the supernatural had been stifled. An atmosphere of experimentation, of inquiry and exploration was at hand. In other words, a merger of the existential with the orthodox was developing with the result that the climate was ripe for new spiritual discovery to accompany the revival of learning. Certainly this spirit dominated the desire of early Christian believers who sought free expression of their faith in the New World. The ability to find the climate to nurture this developing religious expression led inexorably to both freedom and bondage, new doctrine and old orthodoxy and finally a new religious posture of tolerance toward science and society supported by firm convictions regarding man's position on the Earth and in the Universe. The spirit of inquiry which had dominated the Renaissance had crystallized to the degree that a position of authority regarding questions of spiritual life and faith had evolved. It remained essential only that the theologian defend his authority and position; indeed this has been his historic position in the two centuries following the rise of humanism. Into the 19th and 20th century religion has continued to be on the defensive and a weak defensive at that. A period of tremendous intellectual, scientific, and technological progress was accompanied by a parallel period of religious stalemate. Instead of stimulating the spiritual pulse of the religious world, this period was earmarked rather, by feeling the pulse and apologizing for the unhealthy condition that prevailed.

Current Posture

What is the position of the theologian and scientist today? Have they developed a new maturity based on experiences of the past or have earlier lessons been forgotten? The dominant characteristic of this century is progress. Unless all spheres of human activity experience progress, eventual stalemate and retrogression can only result. In this regard it is a mistake to assume that science and religion are separate realms, when in reality each is an extension of the other. What man experiences in a scientific sense is a part of his total experience in a larger sense, and his religious experiences are thus related as well. Though science dominates our society today, this does not mean that religious experience is not a vital part. Truth is progressive and whether this is uncovered in a scientific context or a spiritual context is not too important. What is important is that in seeking truth, each one finds it.

Up to now one of the biggest defects in our space program, which in reality is a seeking after truth, is the fact that it has ignored man's spiritual longings, and that theologians have ignored space. This may be one reason why few social or cultural dividends have been realized from space-related research and activities. The new vistas of space together with man's activities in space have attracted religious attention but caught religious thinkers unprepared. Something new and vital to our culture has received only a modicum of spiritual interpretation. The defensive posture of spiritual leaders, a heritage of the past, has prevented them from speaking with religious authority to the question of man's function and role in space and the impact of discoveries in space upon the destiny of man.

In the U.S. at the present time, it appears that spiritual man is looking inward at a time when scientific man is looking outward and upward. Spiritual man is on the defensive when scientific man is on the offensive. This condition is the result of modern theology.

Three main elements characterize this inward-directed look. The first of these elements is an attention to a definition of what we should believe. These definitions take the form of new and modern creeds, credos and confessions of faith. Lacking an ability to postulate in concrete terms what Christianity is and how it affects our lives, the emphasis is placed upon stressing a code of faith, in order to reinforce the backs-to-the-wall attitude of *what we believe.*

The second element might be termed a stress on *why we believe.* Here, a number of new doctrines and suggestions have been thrust upon us such as the "single God" versus the triune God and the "God is dead" concepts. The relationship of this latter to the early Renaissance is too apparent — God no longer answers the human need.

There is however a new spirit abroad in the world — a spirit of question and inquiry which dominates current religious thinking. This attitude is characterized by an emphasis on how Christianity affects men and his culture; how religious faith should fit into total man, rather than emphasis on what we believe or why we believe. This is vital to spiritual development since the same viewpoint can be expressed today as could be expressed in the early days of the church and the advent of the Dark ages — the message of Christianity has not reached modern man nor touched his life in any vital way.

Conclusions

If the foregoing premise is true, then the requirement now as then is to reaffirm our faith in God. Only then can man re-establish and reconstitute the God-Man relationship. What is done in space must help us find this faith. We must not seek to find God in space but seek to find Him in our daily lives. Theology and science are thus embedded, as Pollack has said, in a higher reality.[3] Together they must speak to man's condition, not only his function in the Universe nor his role on Earth nor his relationship to his creator.

One way to accomplish this is to form an international committee on space science and theology. The function of this internationally constituted group would be threefold: to inquire into the implications of space science on theology, to inquire into the implications of space science on cultural development and to inquire into the implications of space science on the behavioral sciences. Such a body would serve to promote thinking in this area as well as provide a forum where the results of scientific and religious thinkers could be discussed, to the direct benefit of each group and the ultimate benefit of mankind. Ultimately the separation of science and religion will be closed and the union of these two bodies may be a significant product of space exploration and research. Certainly the theologian and scientist are coming together on the origin of life and the question of the origin of the Universe. It is not unreasonable to expect that the faith of both scientist and theologian will become stronger as each finds in his pursuit of validation of truth a growing reinforcement of belief in God and the divine order of man and the Universe.

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WANTED: A CHRISTIAN THEORY OF PERSONALITY

GARY R. COLLINS*

Theories of behavior provide important guidelines for both research and applied psychologists. This paper argues that Christian psychologists should produce explicitly stated personality theories that are consistent with Biblical teachings. Some basic requirements for such theories are suggested.

During the winter months, it is one of my responsibilities to teach a course entitled "personality theory." Starting with Freud, who is probably the best known and the most influential of the personality theorists, we go on to discuss Jung's analytical system; Adler's "Individual Psychology;" the neo-Freudian theorists such as Horney, Sullivan, Rank, and Fromm; the perceptual theorists such as Combs and Syngg; the constitutional theorists as represented by Sheldon and Kretschmer; the learning theorists including Mowrer, Sears, Dollard and Miller; the existentially oriented theorists such as Frankl; and a number of others including Lewin, Allport, Murray, Murphy, Goldstein, and Angyal. These people (and they, of course, are only the better known of many personality theorists) have all attempted to take what knowledge we have about human behavior and pull this together into some kind of a unifying conceptual framework. In facing this challenging task, their approaches have differed considerably. Some have emphasized the biological determinants of behavior. Some have stressed the importance of social influences. Others have emphasized man's uniqueness and individuality. Some have attempted to relate all behavior to one's underlying life goal, or to one's self perceptions, or to an individual's personality characteristics, or to one's past learning. As there have been different approaches to personality theory, so have there been different suggestions regarding the ways in which we can change behavior through education, psychotherapy, or other forms of manipulation. Most of these personality theories have been built on a foundation of careful observation of behavior and a detailed familiarization with the findings of empirical research. Many of these theories have suggested hypotheses which have led to further pertinent experimental investigations.

In view of all this theorizing, those of us who are both Christians and psychologists should perhaps be asking two questions: first, is personality theory really necessary?; and second, do we need a Christian theory of personality? The second question presupposes an affirmative answer to the first. The first question has been debated by a number of psychologists whose conclusions are worthy of consideration.

In this paper, I would like to consider each of these two questions in turn and then suggest some requirements that would be necessary for an adequate Christian theory of personality. Before attempting to discuss these issues, however, it might be well for me to pause and indicate what I mean by a "theory of personality."

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What is a Theory of Personality?

Perhaps most psychologists would agree with Combs and Snygg who state that a theory is "an organization of data, or a way of looking at data, to make them meaningful".[1] The scientist strives to make precise and accurate observations. But these observations by themselves have little meaning. They must be combined into some kind of organized framework before they can contribute to our understanding or be useful in the solution of problems. Combs and Snygg[2] suggest an illustration from the field of meteorology. At weather stations all over the country, observers collect precise and frequent information regarding wind direction and velocity, cloud formations, amount of precipitation, temperature, and barometric pressure. When reported to a central weather bureau, these varied and isolated facts have little meaning. Even when plotted all together on a large map of North America, these facts still are of little significance. It is not until the facts are brought together into a theory of weather changes that they become meaningful and useful in making predictions. Similarly in all areas of scientific investigation, scientists formulate theories in order to give meaning to empirical data.

In this paper, I plan to define theory as an organized set of hypotheses and laws set forth for the purpose of explaining and predicting the relationship between variables.[3] An hypothesis is a tentative but unconfirmed presupposition concerning the relationship between variables. It is a good guess which might be arrived at in a very arbitrary manner. A law, in this definition, refers to a tentative supposition concerning the relationship between variables (i.e. an hypothesis) which has been tested and has received a relatively high degree of confirmation.[4] In less formal language, we could say that from the psychologist's point of view, a theory is a logical way of explaining empirical data.

It follows, of course, that as further data are acquired, the theories must be revised. No theory is right or true or complete. A scientific theory is simply the "best formulation of which we are capable at a given point in time"[5] and thus we can expect that constant revision will be necessary. Popper has stressed the transient nature of scientific theory by defining theories as "genuine conjectures" or "highly informative guesses" which can be tested but never completely verified.[6]

To adequately define a theory of personality we must consider not only the meaning of theory but also the meaning of personality. "Personality", however, is one of the vaguest and most poorly defined terms in psychology. As every psychologist knows, in 1937 Gordon Allport reviewed nearly fifty definitions of this term before adding his own.[7] Since that time, many more definitions have been added to the stockpile. The remarks which follow in the remainder of this paper could probably apply to any definition of personality and so I will indicate what I mean by the term and them move on to other matters, recognizing that my definition could be challenged. Personality refers to an individual's habitual or characteristic behavior (including motor-behavior, social interaction, ways of perceiving, thinking, learning, and emotional reactions). A theory of personality, therefore, can be defined as *an organized set of hypotheses and laws set forth for the purpose of describing, explaining, and predicting an individual's habitual or characteristic behavior.* With this definition in mind, we can now turn to the first of our two questions.

Is Personality Theory Necessary?

Probably the best known critic of phychological theory has been B. F. Skinner. Although his famous presidential address to the Midwestern Psychological Association in 1949 questioned the value of learning theory, his arguments might well be applied to theories of personality (or to any scientific theory). Skinner suggests that while theories are "fun," they are also convenient ways for avoiding experimental studies.

> We are likely to . . . use the theory to give us answers in place of the answers we might find through further study. It might be argued that the principal function of learning theory to date has been, not to suggest appropriate research, but to create a false sense of security, an unwarranted satisfaction with the *status quo.*
>
> Research designed with respect to theory is also likely to be wasteful. That a theory generates research does not prove its value unless the research is valuable. Much useless experimentation results from theories, and much energy and skill are absorbed by them. Most theories are eventually overthrown, and the greater part of the associated research is discarded. This could be justified if it were true that productive research required a theory, as is, of course, often claimed. It is argued that research would be aimless and disorganized without a theory to guide it. This view is supported by psychological texts that take their cue from the logicians rather than empirical science and describe thinking as necessarily involving stages of hypothesis, deduction, experimental test, and confirmation. But this is not the way most scientists actually work. It is possible to design significant experiments for other reasons and the possibility . . . is that such research will lead more directly to the kind of information that a science usually accumulates.
>
> . . . By hastening the accumulation of data, we speed the departure of theories. If the theories have played no part in the design of our experiments, we need not be sorry to see them go.[8]

The opposite view is expressed by several writers who have listed a number of positive functions of a theory.[9] I will mention only three of these functions. First, theories enable us to summarize and integrate existing knowledge. Secondly, theories suggest problems and guide in the formulation of hpyotheses for empirical investigation. If we do not have the guiding influence of theory, Angyal has suggested, our empirical studies "are likely to result in an utterly chaotic and incoherent mass of data".[10] Thirdly, theories permit us to make predictions about behavior.

These functions of a theory apply to clinical practitioners as well as to the researcher. Both must summarize and integrate existing knowledge whether this knowledge comes from the counselee, from the research literature, or from both. The psychologist's theoretical framework will guide the way in which he pulls this knowledge together. Both the clinician and the researcher are involved in formulating and testing hypotheses about their subject matter, whether the sub-

ject is a white rat or a confused college freshman. In both cases, one's theoretical framework guides in the hypothesis formulation. As an example, we would expect a Freudian, a Rogerian, and a Skinnerian to approach a counselee or a research problem in very different ways. Finally, a clinician and a researcher might make very different predictions about an individual's behavior in a given situation. These differences in prediction would stem from differences in theoretical viewpoint.

Perhaps we should not ask if personality theory is necessary. Perhaps instead, we should be asking whether we need theory that is conscious instead of unconscious, explicit instead of implicit. I agree with Maslow that everyone, even he who is as positivistic and antitheoretical as Skinner, has a theory of human nature which "guides his reactions far more than does his laboriously acquired experimental knowledge".[11] A personality theory is necessary if we are to function efficiently in psychology or in any other area of our lives. For most people, including many psychologists, their theory or conception of how people will behave is vague, inconsistent, loosely organized, and at a low level of awareness. As psychologists, and especially as Christian psychologists, we must bring our theories into sharper focus and raise them to a clearer level of awareness. We must make our theories more specific and more precise. Already, I think, I have made a good start on answering my second basic question.

Do We Need a Christian Theory of Personality?

Regardless of how much he might like to keep his Christianity and his psychology separated into different, non-interacting compartments of his mind, the sincere Christian who is a psychologist must certainly view behavior from a perspective that is different from that of his non-Christian professional colleagues. For example, the Christian psychologist believes in a life after death and lives with an awareness of a coming eternity with Christ. This surely leads to a view of life and its problems which is different from the viewpoint of psychologists who disbelieve or rarely consider the possibility of eternal life. The problem of sin and guilt is likely to be viewed differently by the Christian as opposed to the non-Christian, and so is the issue of determinism. Most psychologists accept determinism as a basic assumption in their laboratories but reject it in their everyday behavior. This "determinism-freedom" controversy has been the subject for two recent and very fine articles in the *American Psychologist*[12] but neither of these mentions the possibility of divine intervention in human affairs. The Christian psychologist would most likely have difficulty in discussing determinism without God. Two additional areas of potential disagreement between the Christian psychologist and the non-Christian psychologist concern the question of values and the issue of the nature of man. I would like to discuss these two topics in greater detail in an attempt to support the position that a Christian theory of personality is necessary.

Values. In a paper which she presented a few years ago, one of my former professors (who influenced me more than I realized during my years as a graduate student) suggested that "if a person interacts in any way with another person, he is going to disseminate values. So we might as well be explicit about it, admit it, and think about it".[13] Within recent years, many of us have come to realize that one cannot be a clinical psychologist and still maintain a complete value neutrality. This was demonstrated empirically by Greenspoon's famous studies of verbal conditioning[14] which showed that a therapist could manipulate the behavior of a counselee by a simple head nod or a few "uh-huh" responses. Even when he tries to be neutral a counselor's casual headnods subtly communicate his own value system. Subsequent studies have supported this initial finding and demonstrated other ways in which values can be disseminated during in interview.[15] Williamson[16] has suggested that we do not act without revealing, implicitly or explicitly, our subjectively chosen values. "Good adjustment," "freedom from anxiety," "ability to get along with people," — these are all terms which express some of the value judgments of counselors. Complete therapist neutrality is a myth.

But values also enter into our research. Even the most rigorously disciplined scientist — even Skinner — cannot function independently of his value system.[17] The hypotheses which we formulate, the techniques which we use, the honesty with which we evaluate our data, ways in which we disseminate our findings — all of these represent and are dependent upon one's value system. In a picturesque fashion, Lowe[18] has suggested that to do research without intending it to serve a particular value orientation is like building a high speed automobile without any steering wheel.

In spite of the importance of values in our work, however, I suspect that many psychologists have a very vague and inconsistent value system. They go forth to work with troubled people assuming that they can remain aloof, but failing to realize that even their fuzzy moral beliefs will be influential.[19] Some writers are suggesting that the time has come for us to be explicit about our values and to openly express them in counseling.[20] "As psychologists familiarize themselves with the value orientation under which they operate," Lowe has written, they should "confess their philosophic biases and then turn those biases to fullest advantage by being of professional assistance to the special interest groups with which their values coincide".[21]

Several years ago, when I was working in a counseling center at a state university, I found that many students were searching for a system of values and a purpose in life. On several occasions, rather than attempting to remain neutral, I shared with these students the value system which was meaningful to me as a Christian. In my opinion this was not "pushing religion." It was an overt sharing of the value system which sometimes explicitly and sometimes implicitly guides all of my counseling. It seems to me that the Christian psychologist must be explicit in his value orientation and I submit that as Christians we need a

theory (or theories) of personality which shows consistency with Biblical values.

The Nature of Man. According to Gordon Allport of Harvard, "today people are asking more than ever before what sort of creature is man?".[22] As Christians, we must bring our perspectives to the rising debate in psychology about the nature of man.

Of course, within psychology (and without) there are many existing viewpoints about man's nature. These have been discussed elsewhere[23] and perhaps need only be summarized here. The *naturalistic* or mechanistic view sees man as a physiological or physical being which reacts to external stimulation with observable and measureable behavior. Watson, Skinner, Dollard and Miller hold this viewpoint as do apparently most American psychologists.[24] Such a view permits precise experimentation but it also leads to an array of miniscule or "itty bitty" facts, to quote Allport,[25] instead of a view of the human as a whole person. The *culturalistic* view pictures man as a social being who must learn to conform to the norms of his culture. Behavior is viewed primarily as an attempt to adjust, adapt, or relate to other people and the man who does not or cannot conform is considered to be pathological. Adler, Horney, Rank, Sullivan, and more recently Shoben are personality theorists who have held this view. Critics have pointed out, however, that if we accept the culturalistic position we must agree with cultural relativism and be willing to give up our individuality in an attempt to fit the rapidly changing and frequently vague social mold. From the *humanistic* viewpoint, man is considered to be basically good, rational, self-sufficient, able to control his own destiny, to solve his own problems, and to realize his unique potentialities. This view of man is held by Fromm, Rogers, and most of the psychologists and theologians who embrace the non-directive or "client-centered" approach to counseling. But is man as rational and capable as the humanists would have us believe? Many psychologists, including those with an evangelical Christian orientation would answer in the negative. The *existentialist* viewpoint in psychology makes little attempt to describe man's nature but it recognizes that man is restless, anxious, alienated, and searching for meaning. This approach, held by Frankl and Rollo May, has attracted many adherents but others have been critical because the viewpoint will not accept the mechanistic scientific methods of studying man. Carl Jung might exemplify those who accept a *theistic* view of man. Dependence upon God and religion is the basic tenet of this position. Man is not self-sufficient. He is made in the image of God and until he has "found God" man can have no meaning or completeness in life. Some have criticized this view because it encourages infantile dependence, creates more anxiety and guilt than it relieves, or is beyond the techniques of scientific investigation. In a recent book Tweedie[26] suggests that the *Christian* view of man is the only perspective which adequately delineates man's nature. Apparently this viewpoint accepts the authority of scripture and attempts to make use of Biblical concepts which refer specifically to man and his functions. It is difficult (although probably not impossible) to clearly delineate the Christian or Biblical view of man, however, because the Bible uses terms such as "heart," "soul," or "spirit." These terms are psychologically meaningless and must be rephrased somehow into more specific scientific language if we are to come up with a clear Christian theory of personality.[27]

The Christian psychologist must consider the issue of man's nature and must recognize that the non-Christian psychologist is likely to have a different viewpoint. As Christians we need to advance a theory of personality which is consistent with a Biblical view of man's nature. Such a theory will have to recognize man's original sinful state, the changes that follow when he commits his life to Christ and experiences the "new birth," and the influence of the indwelling Holy Spirit. Such a view will have to consider whether man is a unity, a dichotomy (having a body and mind) or a trichotomy (having a body, soul, and mind). Christian personality theory will have to account for individual differences. It will have to consider the problem of conscience. It will have to say something about the unconscious and it will have to decide whether and to what extent naturalism, culturalism, humanism, existentialism, theism, or any other view of man is consistent with Biblical teaching.

Requirements for a Christian Theory of Personality

Let us assume that theories of personality are necessary and that we need a Christian theory of personality. With these assumptions perhaps it would be wise for us to turn to a brief consideration of some requirements that would be essential for the construction of an adequate Christian theory of personality. At this relatively early point in my thinking at least four basic requirements would seem to be important.

1. *The theory should have a clear and explicit language.* Hall and Lindzey[28] suggest that most personality theories lack explicitness. The theorist who is not explicit, will not communicate effectively and will be unable to contribute much to a Christian theory of personality. We must be aware of a tendency among Christians to use terminology which is meaningful to the "in-group" but jibberish to the non-believer. Rotter's[29] criteria for an ideal psychological language are good guidelines for the Christian personality theorist. Our terms, he suggests, should be reliable (that is, having the same meaning to all psychologists), have minimal overlap, be minimum in number,[30] and serve some useful predictive purpose. Precise and clearly defined terminology should be a guiding goal if our theory is to be useful in describing, explaining, and predicting behavior, and in suggesting research hypotheses.

At the risk of contradicting myself, it may be wise at this point for me to emphasize that precision isn't always possible, and sometimes it isn't even desirable. As Hebb[31] has noted, sometimes it is better to be temporarily naive and productive than to be sophisticated, hypercritical, and sterile. We should aim to be

as explicit as we can, however, without becoming involved in intensely detailed elaboration.

2. *The theory should give a description and explanation of human behavior.* Earlier it was suggested that a theory summarizes and integrates empirical data. The Christian theory of personality should enable us to better understand, whenever possible, the relationships between empirical findings. Although I recognize that this is an ideal and perhaps unattainable goal, we should strive to present explanations which are logical, complete, and consistent both with the Biblical view of man and with the findings of contemporary psychological research in such areas as perception, learning, emotion, motivation, abnormal behavior, development, thinking, physiology, and social behavior. Here we will have to decide whether or not to have a broad molar theory which attempts to account for many aspects of behavior (and most personality theories are of this type) or a more molecular theory which deals with behavior in some limited aspect. At some place, I suspect, we might have to attempt explanations of such questions as why Christians become psychotic, why teenagers rebel against the church, or why college students doubt.

3. *The theory should give practical techniques for the guidance of researchers and practitioners.* I am inclined to agree with Hall and Lindzey that the basic question which "overrides and actually makes trivial all questions of formal adequacy is the matter of . . . what empirical research is generated by the theory."[32] If a theory stimulates no research and if it gives no guidelines for the psychological practitioner, then the theory is useless and should be altered or discarded altogether.

In our considerations of technique, however, we must decide whether the current tools of our science provide the only or even the best ways for the Christian psychologist to explain, describe, and understand behavior. We must ask if the therapeutic or educational techniques that are based on current research findings, are the only or the best ways for the Christian psychologist to deal with others. Within the past five years, several reputable psychologists have begun to wonder if psychology is becoming too technique bound. Sanford, for example, thinks that psychology is "fragmented, overspecialized, method centered, and dull." This is primarily because psychologists now find their problems in professional journals and largely confine their investigations to issues for which psychological techniques are available. There has developed a "psychology-without-a-person" which avoids involvement with the problems of life. The Christian personality theorist must recognize that the current tools of science may not be the only sources of knowledge about man. Certainly the Bible, while not a scientific textbook and while saying very little about the subject matter of modern psychology, nevertheless does reveal some characteristics of man which are beyond the techniques of empirical science. A practical methodology must be a crucial requirement for any Christian personality theory.

4. *The theory should be able to make predictions about human behavior.* We have already defined a scientific law as a relationship between variables which has been tested and received a relatively high degree of confirmation. Given certain antecedent conditions, a subsequent event can be expected to regularly follow.

Undoubtedly, such prediction is less possible in psychology than in the natural or physical sciences. In the first place, there are relatively few established laws in psychology and secondly, the mutiplicity and complexity of variables in psychology make prediction very difficult. Fincher[33] has compared the current scientific status of psychology with that of meteorology. Both the psychologist and the weatherman make predictions about future events. Both predict with a high degree of accuracy but because "their predictions must be based on contingencies beyond the control of the predictor" they are sometimes wrong. Unfortunately, their errors are highly visible and likely to be remembered by the general public. But even the weather predictor has an easier job than the psychologist. The weather is uninfluenced by the predictions that have been made, but the psychologist can never be sure about the influence of his predictions on subsequent behavior.

We must agree with William James that psychology will never be able to write biographies in advance. As scientsists, however, psychologists must make predictions about their subject matter. This must be true in the laboratory, the psychological clinic, the industrial consulting rooms, and wherever psychologists work. Indeed, if we are to function efficiently as human beings we must be able to make accurate predictions about the behavior of others. Behavior prediction cannot be eliminated from an adequate Christian theory of personality.

Conclusion

In this paper, I have suggested that theories of personality are necessary in psychology and that Christian psychologists should attempt to make explicit their own Christian theory of personality. I have suggested some requirements for such a theory and would like to conclude with a warning which perhaps is self-evident, but which should be emphasized nevertheless.

We must not fall into the trap of thinking that there can be only one Christian theory of personality which is in itself unchangeable and "true." It would be relatively easy, I suspect, for a Christian who believes in the unchanging and infallible Word of God to devise and then tenaciously cling to a personality theory that appears to be consistent with scripture. But there can be more than one Christian personality theory. Tweedie[34] has been a pioneer in this area by suggesting one approach based on the logotherapy system of Frankl. In contrast, Mecherikoff and Walker[35] have at least implicitly adopted a different and more behavioristic

theoretical position in an article in the *Journal of the American Scientific Affiliation*. Finch[36] appears to be one Christian who is moving along with the recent "third force" movement in psychology which has risen as a reaction against the behavioristic and psychoanalytic orientations that have guided the course of our science for so many years.[37]

The importance of formulating a Christian theory of personality has been discussed before.[38] It is time, however, for Christian psychologists to become active in making our theoretical assumptions explicit. We must become involved in the application of our own unique Christian perspectives to the problems of understanding and predicting human behavior. There will be times, of course, when apparent contradictions will appear between God's revealed Word and God's world. We must seek to resolve these discrepencies but if this is not possible, we will have to put them temporarily aside until more evidence is available and perhaps until we reach glory.[39] Let us recognize that we will have differences of opinion concerning our theories, but let us be flexible and willing to alter our theories in the light of further evidence. It is then that our Christian theories of personality will serve their greatest usefulness.

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ADVANCE IN THE LAST TWENTY FIVE YEARS IN PSYCHOLOGY

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A great deal has happened in psychology in the past quarter century. Whether all of this may be called "advance" is a question of value judgment on which there is not complete agreement, either inside the discipline, or in the culture as a whole. If we look upon increases in quantity and complexity through the common American rose-colored glasses we may be forgiven for calling it an advance, and we will have preserved the literary symmetry of the afternoon's program topics.

A Growing Record of Proliferation

One of the simplest ways to document the growth of these years is to note a few statistics from the journal, *Pyschological Abstracts*, which prints a brief summary of every published psychological book and journal article.

In the eight years from 1933 through 1940 there was a fairly steady volume of between six and seven thousand abstracts per year. The war years steadily decreased that number to a low point of 3,539 abstracts in 1945. Since then there has been a steady increase up to a record of 16,619 in the 1965 volume, with the production curve still rising rapidly. At this time these articles are reported from more than 500 periodicals throughout the world. Popular articles are not included. Taking the 1940 bench mark, we see that scholarly production will likely be about 2½ times as great in 1966.

Meanwhile *Psychological Abstracts* has seen fit to revise and amplify its table of contents. In 1940 there were 13 subject headings. Today there are 173 headings in three rank orders – that is, divisions subdivided twice. This indicates not only the multiplicity of subjects which have come under the umbrella of psychology, but also the degree of specialization which has attended this proliferation. Psychology has come a long way from the days when the philosophy of the soul took on the additional subjects of memory and psychophysics.

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Specialization in psychology has the same attendant advantages and dangers as elsewhere. The generalist has long since been unable to comprehend the entire field, whereas the specialist fails to keep touch with the larger significance of his field. Because specialists in such diverse fields as infant intelligence testing, olfactory sensitivity of possoms, and the clinical treatment of emotional disorders have so little in common with each other, there are grave problems of communication. When the usual five thousand or more psychologists gather this week end for the annual convention of the American Psychological Association, their monolithic organizational appearance will really hide the fact that in the main these people are attending a small number of sessions in what is a group of minorities meeting under the same roof. The head of this dinosaur sometimes has difficulty getting messages to his distant tail. It is gratifying to see that an organizational structure has nevertheless been maintained through the years.

Some Areas of Prominent Activity and Interest

In 1940 I had my introduction to psychology by way of the second edition of Floyd L. Ruch's, *Psychology and Life*. Even then it packed a considerable quantity of material between two covers. In the attempt to give at least a paragraph to each significant new development, the subsequent revisions became so cumbersome that in the middle fifties the publishers already frankly admitted that the average college student could not be expected to study the whole text in a one-semester course. Various methods of skipping chapters and abbreviating courses were attempted, until it has become evident to everyone that one can no longer teach the subject in any but the most cursory manner in a single semester.

With this awareness let me, nevertheless, select some areas of development which appeal to me as representative of what has happened in psychology in the past twenty-five years. Someone else's selection might differ at a number of points.

About 1940 psychologists began to be very interested in the measurement of public opinion. Since then they have followed this up with an applied field called Consumer Psychology.

Out of the war experiences came a great impetus for the construction and use of measurements for vocational guidance, both in schools and in industry. Together with the development of the study of the relationship of men to machines, there has grown up a flourishing profession of industrial psychology – which also borrows a great deal of the skills from clinical psychology.

Spearman's statistical formula for coefficient of correlation, and his concept of unitary intelligence have both been improved upon – according to some psychologists. With the assistance of a very complicated statistical factor analysis, Thurstone, Cattell, and others have proposed multiple factors in intelligence. The old I.Q. score has therefore given way to more sophisticated descriptions of human intellectual functioning, which also include personality factors that are involved in the mental processes, and estimates of the kind and degree of impairment created by emotional disorders. This is part of the armamentarium with which specialists now identify dozens of types and causes of mental retardation, and distinguish them from emotional disorders.

Psychological testing has become common in the clinical practice of physicians as well as psychologists and social workers. A landmark on the way was Rapaport's monumental study of the diagnostic use of common psychological tests, including intelligence tests. Culture-fair tests were devised as it became apparent that one's upbringing can significantly alter the meaning of test questions.

The anthropologists, in fact, have become very much involved in the question of whether personal or ethnic characteristics are innate or acquired. The result has been the involvement of psychologists and anthropologists with other social scientists on research, theorizing, and even the implementation of findings in the areas of culturally deviant behavior (such as juvenile delinquency), child rearing practices, sexual behavior, prejudice, and authoritarianism. Margaret Meade has greatly influenced the development of such subjects, and also helped spark a whole resurgence of new studies about the age group of adolescence. Adorno's work on the authoritarian personality acquired a bibliography of over a thousand titles in less than ten years. Not only adolescence came in for a new look, but the subject of old age was opened up to psychological study for the first time since G. Stanley Hall wrote his book, *Senescence* in his own ninetieth year.

The Freudian tradition has deepened and broadened in a number of ways. Horney, Fromm, and others have explored social determinants of personality in a new way, others focused much attention on the ego and its defenses, and Anna Freud has carried her father's work through twenty-two volumes of *The Psychoanalytic Study of the Child.* On that subject, the developmental studies of Gesel have been challenged by Piaget, and there is a vast quantity of data on childhood. Unfortunately, human development still lacks a satisfactory unifying system of explanation, in spite of these impressive contributions.

Certain aspects of Freudian theory and technique have become almost universally used by the helping professions of clinical psychology, social work, marriage counseling, and psychiatry. The broad outline of his theory of psychodynamics is so universally used that many, even of the professions, have no idea whence they came.

A recent surge of interest has developed in the extension of a study of human dynamics to groups. Kurt Lewin launched one approach when this leading Gestaltist founded the Research Center for Group Dynamics right after the second World War. A more recent expression is that of studying family dynamics, by Ackerman and others. Lewin's studies have greatly influenced business management and social institutions. Family dynamics has resulted in a new form of intervention in human troubles – family group therapy. During and after the war group psychotherapy procedures were explored and published by Foulkes and Anthony in England, and by Powdermaker and Frank in America, so that group psychotherapy has reduced the cost of treatment for many. A more recent amalgam of these techniques of group dynamics and group therapy is found in the popular, short-term sensitivity training groups. One writer, in dismay, claims to have identified more than two hundred kinds of therapy. Certainly, one must mention Moreno's psychodrama among these. There are not that many truly distinctive forms, but we have certainly seen the development of many variations on some old themes which give us a great variety of approaches to use in different situations. Rogerian non-directive counseling grew up like a mustard seed in these twenty-five years, and has apparently been outgrown by Rogers himself. There is something about this change in a highly respected theorist and therapist which appeals to me as being not only change but advance. However, there are those who do not share Rogers' flexibility, and they might not agree.

Behaviorism had established itself as one of the significant "schools" of psychology back in the late thirties and early forties. Today behaviorism almost completely dominates academic psychology, but it has changed greatly in character. From simple considerations of stimulus-response arcs, it has had to reckon with the mediating processes of the organism, and got itself deeply involved in the increasingly complex consideration of intervening variables both within and outside the organism. It has done so in typical mathematical and research fashion and kept its house in order, but has proliferated in a number of directions.

Interesting to me are the ways in which Mowrer and others applied behavioristic learning theory to many practical affairs. Masserman produced experimental neurosis in cats by way of conflicting learning situations; and Wolpe built a system of psychotherapy on reconditioning and desensitization.

Hebb, in response to studies of sensory deprivation, and the effects of removing portions of the brain, has concluded that instead of seeking quiescence and death (as Freud said), the human being requires an

optimum level of stimulation, and seeks it. He has also offered an explanation for the way brain cells do their work by creating networks as a result of a frequently used path. Once any part of the path is stimulated it tends to trigger the activity of the whole network. Thus he explains how partial stimulation of such a figure as a square causes the person to perceive a whole square. In this way, then, behaviorist and Gestaltist have come close to a meeting ground.

Others have applied the principles of engineering to psychology. Norbert Wiener's book, *Cybernetics*, started people building mechanical models of the brain along the lines of modern computors. These models do not perform the work *for* human brains, but reproduce more or less complicated aspects of *how* it works.

Lest that seem too reductionistic, note the struggle to the edges of scientific respectability of three areas of research – hypnosis, extra-sensory perception, and hallucinogenic drugs such as LSD. Each has gained some stature as more refined research has been done. Concerning hypnosis and extra-sensory perception we now know more accurately just what we don't know. With the cooperation of medicine and physiology, psychologists have participated in bringing increased benefits from the new psycho-tropic drugs; but we have also learned that we cannot expect to find a "drug heaven", in spite of what the proponents of drug therapies may preach.

If we now say that these years have produced evidence that instinctive behavior is frequently triggered by highly specific and complex situations in the environment; and that our perception is highly colored by our previous experience; then we have come around to some of the newer discoveries about some of the oldest subjects in psychology. It also gives us an excuse to move on to what may be the most significant single change in psychology in this quarter century.

The Rise of Professional Psychology

The involvement of large numbers of psychologists in the armed forces during World War II seems to have marked a turning point in much of the emphasis of the entire field, and brought about the present deep involvement of psychology as a helping or healing profession. Psychologists no longer only study and teach about people, they *do* something about them. The largest group of these doers – numerically second only to the teachers of psychology – are the clinical and counseling psychologists who involve themselves in the practical problems, and especially the emotional ills, of others.

Loud cries come from within certain circles in the psychological community to the effect that we don't know enough about human beings to try to take responsibility for helping them, and that the business of psychologists is to research and teach. Certain groups, often politically influential, campaign against what they regard as gross intrusion on human rights and privacy by psychological tests and by clinical practices. In spite of all this, clinical psychologists, marriage counselors, and industrial psychologists, are in much greater demand than the supply; their income rises steadily from year to year; and they are more pushed than invited into an increasing variety of positions of trust and responsibility.

The result within the psychological community is that there is a gradual shift of power, and there is a considerable quarrel as to what should constitute the training of a psychologist. There are those who insist that a clinical psychologist is just another psychologist and he should be trained like all the rest. There are others who feel that the clinician should be specifically trained for his task. One expression of this latter position is the establishment of the Graduate School of Psychology at Fuller Theological Seminary, where the data base of psychology is taught, but the focus is on diagnosis and therapy of emotional disorders; and where great effort is put forth on the part of both the faculty and students to put adequate supervised clinical experience and supervision into the program.

Clinical psychology has tried to profit from the experience of the older helping professions such as medicine. A professional conscience for all psychologists has been published by the American Psychological Association, and has become particularly binding for clinical psychologists. Certification or licensing laws have been enacted in about half the states of the Union, and standards for adequate training and experience are thus becoming effective in at least the most populous parts of this country. There is not time to enumerate these standards here, but a warning should be sounded to the effect that some persons are offering their services to evangelical Christians with the confidence that their claims and credentials will not be carefully scrutinized.

The recent trend in religious circles of all kinds has been to espouse part or all of the data and techniques of psychology, so that there is another significant trend in recent years of a meeting of two traditions which long remained either independent or at times hostile. Along with this meeting, and partly because of it, there is a recent uneasy stirring in psychology toward the regaining of a psyche, or soul.

Such prominent psychologists as Buhler, Mowrer, Meehl, and London have sparked a reconsideration of moral and ethical values in a discipline which formerly prided itself on scientific objectivity; and they have a following which, if still less than the majority, is nevertheless bringing the voice of conscience to psychology from within its own ranks. They are pointing out, among other things, that every therapist has values, and that he transmits them to his patients; therefore those values should be examined and openly judged. The existentialist therapists, in particular, use personal involvement with the patient as a technique, and therefore the personality of the therapist becomes even more significant than in the less involving therapies. Without stating his thesis, I should point out that Dr. Travis* will present a paper tomorrow which deals with

this subject from the mature perspective of one who has been at the very heart of the whole psychological enterprise for almost fifty years.

In closing one may summarize by saying that in the past 25 years psychology has grown to involve more people, more research, broader scope, greater skills, and more practical involvement in everyday human affairs than in all the time preceding; and, like the young man who finds himself finally successful, acknowledged, and responsible for the welfare of others, psychology has begun to reflect seriously upon its own character. It seems to many of us that this is a most appropriate time for psychology and the Christian faith to come into meaningful confrontation.

*See Journal of A.S.A., Vol. 18, No. 4, Dec. 1966, p. 127.

PSYCHOTHERAPISTS VIEW RELIGIOUS BEHAVIOR

C. EUGENE WALKER*

It is a generally known fact that many professional psychologists and psychotherapists hold rather strong negative biases with respect to the religious beliefs of their patients. These biases appear to spring from many sources. To some, firm religious conviction indicates a neurotic and infantile need to depend on a higher power for the solution of life problems. It is asserted by these therapists that such dependency is detrimental to the emotional health and stability of the patient. In a similar vein some therapists regard religious beliefs as absurd superstitions that enslave people, thus preventing them from realizing their full potential and hindering their growth along more fruitful lines. For other therapists there seems to be a strong need to vindicate their personal rejection of religious beliefs by convincing others that there is nothing to the standards which they were taught in their youth.

But, from whatever source, it is a well established fact that many mental health professionals hold relatively strong negative biases against religious beliefs. I recall sitting in a diagnostic staff meeting of a large hospital in which a psychiatrist was presenting the case history and initial interview data on a patient that was to be examined that morning. The psychiatrist noted in his report that the patient exhibited evidence of religious delusions. At this point another staff member questioned the reporter as to what form the religious delusions had taken. The psychiatrist stated that the patient said he had accepted Christ as his personal savior, had been born again, often talked with God, and was praying that God would help him with his problems so that he might soon leave the hospital. The psychiatrist looked up and said, "I'd call that a religious delusion. Wouldn't you?" The other staff member, however, came to the patient's defense. He asked, "Where is the patient from?" When the reply was given that the patient was from a Southern state, the psychiatrist said, "That's not a religious delusion. Everybody down there says that."

Conservative Christians have quite rightly taken exception to the hostile biases held by some psychologists and psychiatrists toward Christian faith. The scientific evidence available is extremely confused and conflicting and by no means clearly supportive of the psychologist's contentions. The therapist's opinion very obviously lies in the area of an unscientific but nevertheless tenaciously held bias. The conservative Christian, therefore, is behaving appropriately when he objects to these biases and criticizes therapists who see a part of their job as removing any vestige of religious belief from the patient before he is considered completely well. Fortunately, this practice, once relatively common, is currently being found in a steadily decreasing number of professionals and is no longer nearly as prevalent as it was.

However, as a Christian psychologist, I think it imperative that we realize, as in most cases of bias, that the bias held by many psychotherapists does contain a small element of truth. It is true that if one examines certain segments of Christianity, especially what might be termed the ultra-fundamentalist segment, one begins to feel that successful performance of religious obligation in this group appears to impose upon the person a kind of pseudo-neuroticism. I refer, for example, to certain religious groups in which an excessive display of emotionality is considered an absolute indicator of spiritual depth and maturity. In an effort to be accepted by one's peers and to feel properly "Christian," many people in these groups tend to develop a rather hollow exuberance and a type of compulsive spirituality. A related feature, of course, is the extent to which some of these groups rely on various kinds of emotional signs and "leadings" of the Holy Spirit without testing these for reality or appropriateness against the clear and revealed teaching of the Holy Scripture. Many excesses and unwise decisions have been later passed off with the comment, "Well, it was just the way I felt led."

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A second feature often noted in these groups is that there is an enforced kind of rigidity and compulsivity built into the practice of Christianity. That is, true Christianity seems to inhere in obeying a number of very explicit rules without flexibility, deviation, or compromise of any kind. Frequently these rules are on major points, well demanding compulsive care and observance. However, they sometimes include minute and inconsequential rules – in some cases, for example, even governing the use of certain terms, phrases, or expressions peculiar to a given congregation or group and to no other. This type of rigidity produces a kind of conventionality and lack of originality that saps the personal vitality of the individual.

A further matter has to do with the extreme emphasis in some circles which is placed on the shortcomings and guilt of the person in his failure to be perfect. Sermons are preached and advice given to the effect that sin is sin in the eyes of God and that the slightest deviation, the slightest mistake, the slightest shortcoming, and in some cases even thinking about such a shortcoming, is the same as actually committing a destructive sin. That a person thoroughly indoctrinated with this attitude develops a sense of foreboding, uncomfortableness, general dissatisfaction and unhappiness should not come as a surprise when we realize that in the vicissitudes of everyday life no one can achieve complete, absolute perfection. It might also be mentioned that a rather unfortunate outcome of this state of affairs is that some people take this philosophy literally. When they realize that it is impossible to be perfect in relatively small things, it then becomes increasingly difficult to resist more serious temptations because, after all, "sin is sin" and what difference does it make if you can't be perfect anyway.

Lastly is the fact often commented upon that in some circles true Christian living demands severe curtailment of pleasure in order to be "separate from the world" and "avoid contamination." I have been painfully aware of this matter in working as a youth director and a youth counselor for a number of years. When a Christian young person decides to date a member of the opposite sex, he suddenly discovers that, according to his religious beliefs, on most evenings there is virtually no place to take his date. All too often I have seen sincere young people, frustrated in this manner, end up sitting in front of a TV or in a parked car, necking and petting, which would seem to be a much more inappropriate and inconsistent form of behavior but one which is not so obvious to others as attending the local movie theater or some such affair and, therefore, tacitly becomes acceptable.

This extreme deprivation of pleasure is very definitely in contradiction to the basic principles of mental health which require that the individual have adequate relaxation, refreshment, and recreation. It is not surprising that many Christians, both young people and adults, occasionally go on what might be called "binges" of pleasure seeking which are later referred to as periods of backsliding and repented of only to be repeated again. This kind of cyclical (mountain peak-valley) experience is not uncommon in the lives of many Christians.

Lest any misunderstand or take undue exception to these comments, let it be quickly asserted that I do not mean to imply that every instance that might be subsumed under these general points is neurotic and ought to be eliminated from the church. I am not opposed to emotionality in the expression of religious beliefs, not even intense emotional experience if it is genuine and healthy. I am not opposed to rules or principles on important points which are firmly held without compromise in the Christian life. But I am opposed to the imposition of unnecessary rules and the lack of flexibility in dealing with situations that may, for some reason, fall outside the scope of a commonly held principle. I certainly do not question that we need to be aware of our shortcomings and that on many occasions realistic guilt must be faced and dealt with, but I do question the manner in which our obligations are sometimes presented and the oppressive guilt often unnecessarily placed on the shoulders of Christians. And finally, I am not at all suggesting that we grant license to every form of lust and desire, but, rather, that when the deprivation of pleasure is seen as a Christian virtue and a necessity for a consistent Christian testimony, that this be done thoughtfully and in a manner that will truly glorify God.

The question is basically not one of principle but of emphasis; of interpretation and application of principle. It is perhaps time that we as Christians re-examine our testimony in the light of the grain of truth that has led to the biases among psychologists against Christian belief. It is perhaps time that we revaluate standards formulated in the 1890's and early 1900's which in terms of society today may be unnecessarily forcing a form of pseudo-neuroticism upon the Christian community. It is imperative that we do this inasmuch as this self-imposed religious neuroticism, to whatever extent it exists, has the same effect on our spiritual lives, our relationship to God, and our testimony before the world as does a genuine personality neurosis on the life of an individual so afflicted. That is, we are hindered in the full, genuine development and fulfillment of our religious commitment by the hindrances and obstacles of neurotic-like restrictions.

View from the Top

In the late '60s and early '70s, there will be a frantic construction of new houses. Family formation will be at its peak. Between now and the year 2000, we will build as many buildings in America – houses, offices, everything – as have been built since the start of this country to the present day . . . We are chewing up our land at an incredible rate. Houses replace farms at the rate of 1,000,000 acres a year. Freeways chew up another 1,000,000 acres. And the pace of our industrialization is such that unless truly heroic measures are taken, there will not be one clean running brook left in America. –Theodore Repplier in *Advertising Age* –as published in HIS, January, 1967.

SOME NOTES ON THE DEBATE IN PSYCHOLOGY

ALLAN R. ANDREWS*

The recent debate concerning the criticism of contemporary psychology and the proposal of a new approach carried on in JASA by Finch[1] and Mecherikoff and Walker[2] is unfortunate, yet necessary.

It is necessary because it reflects the tenor of contemporary theorizing and the so-called clash between "experimentalists" and "clinicians". It is unfortunate because, on both sides, it reflects a lack of understanding and awareness of the opposing point of view; an attitude which also characterizes much of the contemporary psychological scene.

Several points can be noted affirmatively in a quick survey of the Mecherikoff and Walker article. The authors are correct in criticizing Finch for his misplaced emphasis on Descartes and Hegel in the light of what "logical positivism" means to the contemporary experimental psychologist. John Locke or Rudolf Carnap would better represent the experimentalist's precursors. They further point out that Finch does indeed make a straw man attack on Behavior theory via Watson and Freud, neither of whom are staunchly defended by either Behaviorist or current psychoanalysts. Both, to be sure, are strongly revered in their respective camps, but both are heavily modified in the formulations of contemporary theorists. It is true also that Finch makes an unguarded transition from psychology to psychotherapy, perhaps unaware of the experimentalist's tendency to pounce on such transfer as "illegitimate" and "unscientific". Any graduate student in Psychology could have served warning about this attempt, for it has become a comical anomaly, in most universities, to pursue research in psychotherapy outside the limits of counter-conditioning or other learning theory paradigms.

On the other hand, several points should be made in defense of Finch. While I do not wish to engage in thinking another man's thoughts and errantly defending his intentions, I believe a careful reading of Finch makes it clear that he does not reduce the issue to ". . . a choice which psychology must make",[3] but rather he suggests very succinctly that "a more comprehensive approach seems necessary".[4] The misunderstanding comes because Finch believes the existential approach looks more promising for the Christian, while Mecherikoff and Walker see in psychology as a natural science the more profitable path to follow.

In this paper I hope to present a few valid reasons for agreeing with the temperament expressed by Finch while showing that the path of Mecherikoff and Walker, though perhaps not a "Procrustean bed", and assuredly of great value to the study of man, is committed, by definition, to a truncated view of human nature. In this effort I shall repeatedly direct attention to a very readable recent publication entitled, *Humanistic Viewpoints in Psychology*, edited by Frank T. Severin[5], which does the great service of collecting the disjointed viewpoints that have been heretofore making sporadic appearances in the psychological literature.

The basic presupposition of Mecherikoff and Walker is that psychology is a natural science. They are careful to emphasize this point, though they are careful also to skirt the serious debate that centers on this very point. It is traditional to include psychology in the social sciences, but in actual academic procedure the discipline is modeled after physics and treated as a natural science. It is this very basic issue which needs to be clarified, for it is not at all clear that the scientific method as applied in physics is applicable to the social sciences. Mecherikoff and Walker make the point that "other natural sciences may also be so criticized (i.e., as Finch has done)",[6] but the very word "other" which they employ does not square with the basic issue, namely, is the data-base of psychology amenable to the methods of natural science?

It is at this juncture that Finch's discussion of Descartes and Hegel may have relevance, though he would better have mentioned Skinner, Spence or Hull, for the problem of the experimenter's involvement in his experiment (i.e., what Finch calls eliminating the very subject data under study, viz., the knower himself) is a real problem. It amounts to giving a precise definition of psychology, the usual one being, the science of behavior. Is the experimenter, in his laboratory performing an experiment, a unit of behavior, and as such a valid unit of study for psychology? Is the experimenter eliminated from consideration when he is observing the operant behavior of a pigeon? The answer to this question will help define psychology. Carl Rogers, framing the question as "Persons or Science?",[7] says of the experimenter, "if he is to be a good scien-

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tist, he immerses himself in the relevant experience, . . ." We might ask, does psychology study man in his uniqueness, his individuality, his human *being*-ness, his personal reality, or does it limit itself to the study of man *in vitro*? The phenomenological approach to the data ordinarily considered to be the data of psychology; what Finch calls a "logos of the human psyche"[8]; is much more encompassing than the discipline modeled after physics. In physics, man, by definition, is objectified from the data of his discipline, but can this be true in psychology?

Considering the humanness of physicists, Severin points out that "Einstein, Heisenberg, and other twentieth century physicists . . . have been forced to the realization that a scientist arrives at his theory speculatively".[9] Rogers concurs with the generalization that ". . . throughout the use of such rigorous and impersonal methods, the important choices are all made subjectively by the scientist".[10] This then is also the bulk of Finch's plea to "Recognize the limitations of the scientific method, derive from it all the information possible, but under no circumstances limit the subject of knowledge to its methodology".[11]

It is significant that Mecherikoff and Walker do not address themselves to the Finch discussion of the spirit. They criticize Finch's view as "a proposition unconnected to specific procedures for testing its validity or applying it in practice",[12] but this is precisely the fault of viewing psychology as a natural science and imposing the scientific method. It says, in effect, that what lies outside the verification of the senses is not real. Here is the contemporary carry-over of logical positivism and Watsonian Behaviorism; it eliminates from its data-corpus man in his loving, dreaming, hoping, creating, hating, fearing, dying and his praying. Along the lines of a more comprehensive definition of psychology, Abraham Maslow writes, "my definition of a psychologist is broad but specific . . . those — and only those — who are interested in developing a truer, clearer, more empirical conception of human nature".[13] He goes even further by laying down lines for the discipline to follow, "Psychology should turn more frequently to the study of philosophy, of science, of aesthetics, and especially of ethics and values".[14]

Mecherikoff and Walker provide (themselves) what may be the most pertinent criticism of psychology as a natural science. They emphasize that "it is important to note that psychology *as a natural science* cannot (nor does it attempt to) comprehend the full stature of man".[15] This is the key to a definition of psychology, for in its dogmatic, mechanistic, sense-bound empiricism, psychology as a natural science *does indeed* attempt to comprehend the full stature of man and the classic outworkings of such assumptions are found in B. F. Skinner's novel, *Walden Two*.[16] Granted, Skinner does not speak for all psychologists, but his narrow definition of scientific psychology is widespread. The irony of the experimentalist's rigid position is noted by Adrian van Kaam, "to declare that only those propositions of psychologists make sense which can be experimentally verified is one of the most sweeping assumptions one can think of because it contains a definite and irrevocable judgment concerning all possibilities of human knowledge and their relationship to what is knowable".[17]

The behavior theorists of contemporary psychology have insisted, like Mecherikoff and Walker, that psychology be defined as the science of behavior. This definition, however, needs careful examination. When considering the word "behavior" there are not only problems of inclusion of the experimenter but also the implicit assumption that one can approach specifically human behavior with the inherited subject-object model of the natural sciences. These problems are closely related, to be sure, and are the topics of a very important work by Stephan Strasser, *Phenomenology and the Human Sciences*.[18] Strasser argues that it is of the nature of the human sciences (which includes psychology) to operate from a subject-subject model with the experimenter acting, not as a "disinterested spectator", but as an "understanding witness".[19]

The accepted definition also tends to delimit the definition of science by reducing it to a certain methodology. If one allows, however, for defining science as a systematic discipline there is provision for the possibility of an *empirical human science;* a human science which avoids the reductionistic, objectivistic approach that follows the model of the natural sciences. The growing existential emphasis in contemporary psychology, when properly understood, is not a sell-out to Sartre, but is rather a disciplined approach to the study of man.[20]

Finch, with interests in the applied branch of the field, is not cautious in his discussion and Mecherikoff and Walker are quick to question his alignment of psychotherapy and psychology. The attitude that would prohibit such a transition would prefer that psychotherapy be carried on in the manner of Wolpe's technique of reciprocal inhibition, which is a therapeutic extension of the subject-object approach and a strongly manipulative procedure. It is of the very warp and woof of clinical psychology to be involved in research with an n of one. Furthermore, it is this one-to-one relationship which must essentially be considered a subject-subject relationship rather than one of subject-object. Granted, Wolpe's method effects its "cures", it is, neverthless, founded in the implicit view of man which says "to understand this world, one must be like unto it — objective, impersonal, mathematical, precise".[21] Such a world simply does not exist for the clinician and his human subjects. It is from the clinic that most of the existential literature found its impetus, and there is a growing tendency to note that the clinician is more of an artist than a scientist, but such a labeling does not eliminate him from consideration as a disciplined psychologist.[22]

It must be affirmed that in a discipine which deals with the problems of human love, hate, creativity, anxiety, etc., one cannot dismiss clinical psychology as unscientific simply because it does not fit into a spe-

cific research paradigm. The work of Viktor Frankl and his Vienna Polyklinik, together with the phenomenological work of the Lexington, Kentucky group stand as examples of a rigorously defined scientific approach to the problems of psychotherapy, existing outside the objectivist attitude. While Finch may have made an unwary transition, the greater error lies with Mecherikoff and Walker who exhibit the widespread closed-mindedness of the objectivist orientation by questioning the status of psychotherapeutic research.

While these notes are not the place for an extensive treatment of the phenomenological-existential approach, several observations are pertinent to the debate under consideration.

First, the so-called "third approach", while it is indeed heavily critical of much of traditional psychology, recognizes the value of such a differential approach and feels that many insights can be gained for the human sciences via the current research trends. Secondly, it recognizes the dangers of a pure subjectivism with which it, at times, seems closely aligned. van Kaam summarizes the matter thusly,

> The assumptions of phenomenological-existential psychologists are of as great a variety as those of the positivistic psychologists. . . . They are the counterpart in psychology of the new assumptions of the quantum physicists and existential philosophers. Becoming, creativity, growth, self-actualization are terms which more or less indicate in which direction these assumptions are developing.[23]

The goal of the human sciences is an understanding of the human person through rigorous, disciplined study of the experiential, behavioral relations of man as apprehended by other persons.

For the Christian there is the ever present danger that such a human science will develop outside the consideration of a man's relationship to God. The current trend is one which builds its structure on the insights pertaining to human nature which are gathered from the existential philosophers. Tension for the Christian will arise when these insights are in direct opposition to the Biblical perspective to which he is committed. Nevertheless, the avenue which the trend is taking seems much more aligned in its analysis to a view that would emerge from a Biblical anthropology.

These notes seek to consider the points of contention between Finch[1] and Mecherikoff and Walker[2] as they reflect the situation in contemporary psychology. While not in full agreement with Finch, they seek to counter some of the criticisms made by Mecherikoff and Walker by examining the definition of psychology as the science of behavior. This examination attempts to show that Mecherikoff and Walker err in the direction of an objectivist and therefore truncated view of man. These notes further seek to defend psychotherapy as a science with a subject-subject corpus of data and points to the insights of the rising phenomenological-existential trend as a possible heuristic stimulus for a psychological theory based on a biblical anthropology.

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New York Times

Cheating is increasing among the city's [New York] high school students, especially those near the top of their classes who are competing for the limited number of openings in Ivy League colleges. This pattern emerged from interviews with hundreds of students at a dozen schools, where midterm examinations are now in progress. It also was the consensus of most principals and teachers at other schools.

The prevailing view was that the youths were responding to the spiraling demand for high grades made by college admissions officers. The pressures are likely to intensify as society's demands increase for highly educated experts able to digest and extend scientific and technological research. Pointing up this contention were reports that the worst offenders are students who could get good grades without cheating and that honors classes were the most affected.

— Martin Tolchin, "Cheating Rising in City Schools."

Launched

A kind of "Christian Peace Corps" has come into being through the vision of a young pastor. The plan is to recruit for short-term missionary service Christian volunteers between the ages of 18 and 70 with a wide variety of skills. The response has been far beyond expectations.—*Published in* HIS, *February,* 1967.

THE SEQUENCE OF CAUSAL ANALYSIS IN THE SOCIAL SCIENCES

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An explanation in the social sciences differs from that used in physical science. Since man seeks goals, one must often understand the effects of social action before the causes can be known. The fact that man has choice prevents the assumption of a strong deterministic position in social science. Similarly, the objectivity of the social scientist is weakened and his statements of social causation are tempered by his own evaluations.

The problem of defining social reality remains. Moving from the organicism of Durkheim to the interpretive approach of Weber, one arrives at a position which recognizes the importance of the individual. It is on this level that the convergence between Christianity and social science begins.

The insistent problem in the philosophy of social science is concerned with the nature of explanation; is it similar to that used by physical science or not? This paper will attempt to defend the view that necessary differences exist and explore the contribution which such a position makes to a Christian view of social science.

Contemporary Views of the Nature of Social Science

In his authoritative work, Nagel claims that although methodological problems occur in the social sciences, they are not insuperable.[1] While an objective social science is not possible, much can be done to sharpen the "law-like" statements made in the discipline. There is little likelihood that they will ever become as precise as those made by the natural sciences. Hempel asserts that, in natural science, explanation of an event means the explanation of some (not all) repeatable characteristics in a specified situation.[2] It also means that explanation shows such an event to be expected in view of other events which are prior to or contemporaneous with that event. While social science has all of the characteristics of any science, Gibson believes that social science can claim less precision.[3] While no laws are without exception, it is more necessary for the social scientist to state the exceptions to his assertions.

The more unique features of social analysis are found in the writings of others. Melden, for instance, believes that one cannot explain social action without understanding the rules which give them meaning. The use of moral judgment, then, is necessary to analyze social action.[4] Brown becomes more teleological in his perspective and asserts that explanation of social action is possible through the use of intentions and functions.[5] Hence, he stresses the goal-oriented nature of behavior. Finally, Winch claims that social science is more closely linked to philosophy than natural science.[6] As is true with Melden, he notes the importance of understanding the social context through the use of subjective means. Since he is critical of J. S. Mill, perhaps it is best to start with that classic figure and arrive at the subjective position by more systematic means.

The Deterministic Position of Mill

In a statement concerning the nature of sociology which is seldom referred to, John Stuart Mill states:

> There are two kinds of sociological inquiry. In the first kind, the question proposed is, what effect will follow from a given cause. . . . There is also a second inquiry, namely, what are the laws which determine those general circumstances themselves? In this last the question is, not what will be the effect of a given cause in a certain state of society, but what are the causes which produce and the phenomena which characterize, States of Society generally? In the solution of this question consists the general science of society.[7]

Mill alerts us to those elements of sociology with which one must be concerned; effects, causes, and the phenomena to be observed. Elsewhere he refers to these phenomena as social facts.[8] By emphasizing the latter question in his quotation, he appears to claim that explaining the causes of social facts is the proper endeavor of sociology. Perhaps the proper question to be raised is whether we can ever adequately explain social facts.

Unfortunately, Mill provides little direction concerning the sequence of analysis to be followed in dealing with these problems. Does one deal with effects, causes or facts first, or are all of these elements dealt with at the same time?

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In another statement showing his strong tendency toward organicism, he claims:

> From whichever of the social elements we choose to set out, we may easily recognize that it has always a connection, more or less immediate, with all the other elements, even with those which at first sight appear the most independent of it . . . by displaying the manner in which every change in any one part, operates immediately, or very speedily, upon all the rest.[9]

Hence, Mill seems to suggest that the sequence of sociological inquiry is relatively unimportant, since the elements are so completely interdependent that the relationship of one to another will be apparent. As will be noted later, what Mill states here is significant, but the recognition of the connection of social elements will not always be readily apparent.

Perhaps Mill held an overly simplified view of sociology. Certainly it would not be unusual for his time if he did. For instance, he claims "there really is one social element which is thus predominant, and almost paramount, among the agents of social progression. This is the state of the speculative faculties of mankind."[10] It is his assumption, then, that human knowledge "is the main determining cause of the social progress".[11] Nevertheless, modern sociology finds greater justification in seeking for multiple causal factors rather than the primary causal factor.

The Social Reality to be Observed

Assuming that the scientific steps to be taken by sociology do have a meaningful sequence, we can now attempt to understand what they are. First, it is necessary that the proper social phenomena be observed. To start with the wrong social facts is to prevent adequate understanding of cause and effects. It is further suggested that the effects of these facts must be understood before an adequate causal analysis may be commenced. It is only after there is assurance that the proper facts and effects have been isolated that the causes of social phenomena may be understood. The danger is always to take for granted the adequacy of the lower level of analysis.

Pleading for an empirical approach to the world, Hume asserts "that causes and effects are discoverable not by reason but by experience".[12] He seems to suggest that because of custom, it has been assumed that causal explanations are to be sought by means of reason. What is needed, then, is a reevaluation of method in order to proceed with greater accuracy. Until this is done, error is compounded upon error. In a similar fashion, it is necessary for the contemporary sociologist to evaluate what he knows in order to determine whether he is proceeding in the proper fashion.

Despite the work of Durkheim, to which reference will be made later, there is still uncertainty as to what constitutes the most profitable level for social analysis. Homans' recent criticism of contemporary sociology clearly underscores the misconception under which sociology has been laboring.[13] We have taken for granted the existence of norms, roles, and institutions, while the question of their real existence was never asked. While trying to explain these phenomena, theories were never developed; analysis was confused for theory. Functionalism, which considered these phenomena to be "real", was never able to develop any viable theories.

It is Homans' claim, then, that sociology has been concerned with the wrong level of social reality. The only opportunity to explain social phenomena lies in the analysis of men rather than higher contextual social levels. Aware that such a position smacks of reductionism, Homans asserts that the psychological level is the proper level for sociological analysis; it is not possible to keep the personal and the social separate.

If Homans should be correct, then it is apparent that functionalism has not directed our attention to the real phenomena. While many significant interrelations and insights have been presented, theoretical statements of cause and effect would not be readily achieved on this level of analysis. It should be noted, however, that Homans' main argument is not against functionalism or for theory as such, but rather, it is for a clear understanding of what constitutes the factual data of sociology.

The point which must always be kept in mind is that, in its immaturity, sociology has not developed the adequate definitions of referents upon which a conceptual scheme might be built. To rush into statements of cause and effect, without such a solid foundation, is to bring about the unfortunate situation to which Homans refers.

Having once developed their functional perspective from the contributions of anthropologists, it is entirely possible that sociologists became too independent and relied on their own assumptions. Certainly Gibson was guiding us in the direction suggested by Homans when he concluded:

> we have to regard the characteristics of individuals in themselves as the *starting-points* of social enquiry, and we have to say that the task of the different branches of social science is to examine the consequences, direct or indirect, intended or unintended, of the actions of these individuals -- including under these, of course, the kinds of groups and institutions which are found among them.[14]

This statement clearly directs us to the level of the individual for the initiation of research and the use of functional questions for further analysis. In both cases, the agreement of Gibson with Homans appears to be strong. Further, the emphasis to be put upon effects as the next step in inquiry is clear. The question of how to seek causes is not raised.

The Value of the Holistic Approach

The tradition which is, essentially, being developed here is both positivistic and organic and takes its present form in functionalism. The argument, however, is that the representatives of the approach never clearly described the sequence of analysis to be followed. Nevertheless, it has been suggested that such a procedural approach is discernible. The original reference to Mill's work notwithstanding, it can also be observed

that there has been little emphasis on a rigorous causal analysis.

One does not have to seek very far to discover the reason for this approach. Referring to Comte's " 'inversion' of procedure", Hayek describes as "an indisputable axiom" the position "that where we have to deal with social phenomena, the whole is better known than the parts".[15] This holistic approach results in an inability to adequately discern the relationship of parts to parts. In referring to this "idea of necessary connexion", Hume states "When we look about us towards external objects, and consider the operation of causes, we are never able, in a single instance, to discover any power or necessary connexion; any quality, which binds the effect to the cause, and renders one an infallible consequence of the other".[16]

The problem to which Hume alludes is the difficulty of determining the sequential pattern of events. In a statement which is highly reminiscent of Henderson's description of Pareto's notion of equilibrium,[17] Hume states:

> We say, for instance, that the vibration of this string is the cause of this particular sound. But what do we mean by the affirmation? We either mean *that this vibration is followed by this sound, and that all similar vibrations have been followed by similar sounds: or, that this vibration is followed by this sound, and that upon the appearance of one the mind anticipates the senses, and forms immediately an idea of the other.* We may consider the relation of cause and effect in either of these two lights but beyond these, we have no ideas of it."[18]

The question here is not whether an organismic approach to social phenomena is profitable or not. What is relevant is whether or not we have understood the proper means of proceeding with analysis. As Hume rightly notes, the problem is always one of definition; reasoning prevents us from clearly distinguishing among similar objects.[19] From this we may conclude that the organismic approach is on solid ground when it has established the social facts to be observed and it is linked with a positivistic view.

It is Durkheim, of course, who most clearly represents this school. His argument is very close to that which has already been developed here. First, "Theory would be introduced only when science had reached a sufficient stage of advancement."[20] Second, *"when a science is in its infancy,* we do not have the right to affirm the existence of such facts . . . it is possible to establish that facts have a meaning, and what the meaning is, *only when the explanation of the facts is sufficiently advanced."*[21] (emphasis supplied) Third, the understanding of defined facts comes from an understanding of their consequences. While the "sole function of the definition is to establish contact with things" it is the purpose of consequences to allow for a definition of these phenomena.[22] It is Durkheim's claim, then, that if crime is a social fact, "we define crime in terms of punishment (because) in order to understand crime, we must begin with punishment."[23]

From these statements, we may repeat the claims made heretofore. When a science is as immature as sociology is, at present, we cannot take for granted the phenomena which we are studying; it is necessary to be sure of the factual nature of things. In addition, the effects caused by the existence of such facts should be readily understood in order to reaffirm the definition of those things which are being studied. It is only after such procedures have been disposed of that we can become involved in the explanatory function of theory.[24]

The Importance of Studying Effects

It should be clear now that once the social phenomena which we are studying are defined, the next step in analysis should be the study of effects, so that greater clarity and specificity of these definitions might be achieved. In addition, the isolation of effects can point us to possible causes.

Returning to Durkheim, we should examine his now famous reference to the normality of pathological conditions in society. Having once established that crime is a social fact, Durkheim insists that it is normal, not only because it is inevitable and, in fact, contributes to the welfare of the society, but also because it acts as a guide concerning morality in the society. Thus, it serves a useful purpose and can be the basis for suggesting changes which should be introduced in order to increase stability. To understand the reality of crime, it is first necessary to comprehend the effects which it might have.

Once it is seen that crime is "normal", we gain a more clear insight concerning the nature of crime but the problem now centers in the consequences of crime. Using more recent functionalist terminology, if it is possible for crime to be both functional and dysfunctional in its consequences, how are we to determine what causes are to be sought? Durkheim himself suggests that the causes of crime are legion, since crime is relative and depends on "that definition which the collective conscience lends" to the criminal act.[25]

It is precisely at this point that the positivistic position is weakened by the need to make a choice among those causes and effects which are possible. The scientist, obviously, can no longer be completely objective and his choice must be formed by meaningful values which are available to him. In his contribution to the methodology of the social sciences, Weber clearly delineates the problem:

> how is the *causal explanation* of an *individual* fact possible — since a *description* of even the smallest slice of reality can never be exhaustive? The number and type of causes which have influenced any given event are always infinite and there is nothing in the things themselves to set some of them apart as alone meriting attention. A chaos of "existential judgments" about countless individual events would be the only results of a serious attempt to analyze reality "without presuppositions". And even this result is only seemingly possible, since every single perception discloses on closer examination an infinite number of constituent perceptions which can never be exhaustively expressed in a judgment. Order is brought into this chaos only on the condition that in every case only a *part* of concrete reality is interesting and *significant* to us, because only it is related to the *cultural values* with which we approach reality. Only certain sides of the infinitely complex concrete phenomenon, namely those to which we attribute a general *cultural significance* — are therefore worthwhile knowing. They alone are objects of casual explanation.[26]

There is a definite subjective element in causal analysis; we must choose those causes and effects which are of special relevance. Effects are also chosen, however, for the purpose of clarifying the definition of a social fact. Though this defining function of effects appears to be more objective, we must remember that facts are also subject to cultural values. While the choice of effects to be used in seeking causes is immediately based on cultural values, the choice of those effects which assist in understanding the fact is more objective, once the nature of the fact has been established.

If we are to understand crime as normal, we center our attention upon those consequences of crime which make it useful. These, however, may not be adequate for understanding the causes of crime, and we must make additional choices of those consequences which will guide us to possible causes. It seems apparent, then, that the importance of studying the effects of social facts stems from this two-fold function of effects, with subjectivity of choice increasing as there is concern for seeking causes.

Our attention is now turned to the question of validating the claim that causes may be derived from effects. The definition of cause offered by Hume seems critical here; he states:

> we may define a cause to be *an object, followed by another, and where all the objects similar to the first are followed by objects similar to the second.* Or in other words *where, if the first object had not been, the second never had existed.* The appearance of a cause always conveys the mind, by a customary transition, to the idea of the effect. Of this also we have experience. We may, therefore, suitably to this experience, form another definition of cause, and call it, *an object followed by another, and whose appearance always conveys the thought to that other.*[27]

In reducing these statements to their elements, Mill states "cause, as (Hume) interprets it, means the invariable antecedent."[28] This definition agrees with Comte's approach, Mill maintains, and establishes the methodological perspective so strongly defended by Durkheim.

Causality as a "Guiding Principle"

To define a causal relationship, however, is not to solve all of the problems in establishing one. In defense of empirical methods, Hume claims that no cause can be established by reason alone. While it is possible to reduce the many possible causes of many effects into a few general causes, the establishment of the ultimate causes of these principles is probably outside the realm of human inquiry.[29]

Not only are ultimate causes difficult to ascertain, but we can only assign to causes a probability of their existence. It is Hume's contention that the influence of custom is too readily accepted in this field; the philosopher accepts the cause which is generally understood to result in an effect. It is only when the usual cause doesn't produce the usual effect that some "secret" cause is considered to be the important factor.[30] Hence, it is not likely that one will arrive at more than a probability that a particular cause is responsible.

In these circumstances when dissimilar effects result from similar antecedents, Pap claims that the "principle of causality . . . is best described as a *guiding principle* of causal inquiry that owes its successes to a contingent feature of the universe."[31] Of significant importance, then, is the need to ascertain whether effects are dissimilar before one can claim more than probability for a causal statement.

Not only must our attention be refocused onto effects in order to establish any meaningful causal statement, but it is also necessary to determine the circumstances surrounding the causal relationship.[32] If two causes produce the same effect, it may be assumed that the circumstances were comparable. When a difference exists between causes and effects, however, it may be assumed that the relevant circumstances were different.

Once again we return to the problem of what constitutes a social fact, for if it is perceived that a particular cause of crime does not result in the expected consequence, the "reality" of crime in that case must be further explored. As criminologists have noted, crime is relative to its legal definition, which is changeable. If it should be found that an increase in a crime results in a decrease in the rate of punishment, which is not at all unlikely, a change in the laws pertaining to that crime is quite likely responsible. Since laws are, in effect, the social definition of the crime, it is necessary to reevaluate our understanding of the nature of crime; i.e., is it an act or a social interpretation of that act?

MacIver's Three Axioms

Having arrived at this point, it is now instructive to turn to the work of MacIver, who, McEwen suggests, is most helpful in arriving at a definition of causality.[33] MacIver's scheme is succinctly stated in three "axioms": 1) whatever happens has a cause, 2) where there is a difference in the effect there is a difference in the cause, 3) every cause is the effect of a prior cause and every effect is the cause of a posterior effect.[34]

The implications of the first axiom suggest that each happening is an event in a specific process and to "explain anything is to discover the order within which it falls."[35] In this process, "cause is the conjuncture viewed as active; effect, the conjuncture viewed as being acted upon."[36] To understand cause and effect is to understand the nature of their activity or passivity. What we are observing, then, is what "is both acted upon and acting at the same time."[37]

For MacIver, then, the meaning of being a thing or to have existence is to be an object in this process which is both acting and being acted upon. The establishment of what this thing is which is to be observed is gained by understanding, in a general sense, the process in which it has its being. By stressing the nature of this process, MacIver tends to clarify the earlier statement by Hume and illuminates the claims of Mill.

The second axiom alerts us, again, to the importance of effects. By observing a difference in the consequent, we know there is a difference in the antecedent. Observing water as an element in the process of freezing, we understand that there is a change in the temperature. The important point seems to be that the drop in temperature might not be apparent if the freezing of the water were not observed. The validation of our claim that the analysis of effects leads to an understanding of causes, assuming the surrounding conditions are identical, is strengthened.

It is important to note the significance of MacIver's statement "that the search for causes is directed to the difference between things".[38] Not only is it necessary that we know what it is which we are observing, but it would also be necessary to have some basis for determining difference. If such an observable element is not capable of measurement, it cannot be certain that the change resulting in an effect is the basis for understanding difference.

The third axiom reminds us that a thing may be both a cause and an effect at the same time. Observing the freezing of water suggests that it is being acted upon by the cold, but it also reminds us that the forming ice is acting upon the shore line as expansion takes place. The events occurring in a particular time period in the freezing process, then, may be both effect and cause.

It could be suggested that MacIver puts causal analysis into its proper perspective for the social scientist. Causality is not something which is absolute and inviolate. As MacIver reminds us, the "prior and posterior are always relative".[39] It is also important to note that causation is universal.[40] As long as things exist, there must be causes, and the establishment of relationships among events in a process is a proper causal analysis. The fruitfulness of the analysis largely depends on the quantifiability of the things themselves and the extent to which they are bound into a close relationship to one another.

Causal Analysis in Durkheim's SUICIDE

The theoretical position to which reference has been made so often is that of positivistic organicism. The classic analysis in this tradition is Durkheim's *Suicide,* which so clearly presents quantifiable data which can be seen to exist in a relationship because of the close linkage which the various elements in the study have with one another. A detailed analysis of sections of this study, then, should prove of assistance in illustrating the principles which have been presented.

In determining what constitutes suicide, Durkheim claims it is necessary to establish those "common qualities objective enough to be recognizable by all honest observers".[41] With this goal, he is then able to define suicide as "all cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result."[42] Nevertheless, this definition is not as capable of objective observation as Durkheim might suppose. Is it possible for all observers to be aware that a particular act will produce death? Those of us who are unfamiliar with the death dealing qualities of hemlock would not necessarily know that Socrates, in keeping with Durkheim's definition, committed suicide. As was earlier suggested, the Weberian position which stresses the value of "understanding" of the actor's intentions is necessary here.

This weakness notwithstanding, the definition greatly limits the actions to be observed. In addition, it establishes the importance of motivation in suicide; it is intentional action. If suicide were nothing more than individual action, Durkheim would have little interest in it. For him, the reality of suicide is found in its appearance as a social phenomena; it "is itself a new fact *sui generis,* with its own unity, individuality and consequently its own nature — a nature, furthermore, dominantly social."[43] As a social fact, then, suicide can be studied, not on the individual, but the social level where it finds its clearest expression in the measurable suicide-rate.

Through the use of these statistics, Durkheim shows that suicide is not caused by cosmic, normal psychological, or psychopathic factors. The causal explanation, therefore, is reduced to social factors. The complexity of such causes still presents a formidable problem, but, as in the case of crime, it can now be assumed that suicide is a normal pattern of action and the process to be studied can be found in the routine of daily life.

It is clear that Durkheim understands the nature of causal analysis. Realizing that causes and effects will vary with differing conditions, he assumes that different types of suicide will be found. Hence, he uses the relativity of causes and effects as a strength rather than a weakness; he seeks different types of suicide rather than ultimate, unvarying causes. The process of causal analysis is used to sharpen the classes of social facts which are to be studied before the causes themselves are to be sought.

Realizing that different types of suicide are possible because of the surrounding circumstances, Durkheim is now able to distinguish these types from the differing attitudes toward suicide permitted by societies. It is not only that a society allows a person to assume his right to take his life, but in some societies it is necessary that a person take his life. The former condition leads to egoistic suicide and the latter altruistic.

Referring to this distinction between these two different forms, Durkheim states:

> (in the case of altruistic suicide,) the weight of society is thus brought to bear on him to lead him to destroy himself. To be sure, society intervenes in egoistic suicide, as well; but its intervention differs in the two cases. In one case, it speaks the sentence of death; in the other it forbids the choice of death. In the case of egoistic suicide it suggests or counsels at most; in the other case it compels and is the author of conditions and circumstances making this obligation coercive. . . . This sacrifice then is imposed by society for social ends. . . . The destiny of one must be that of the others.[44]

In the case of altruistic suicide, it is clear that although the suicide is an individual act, it has social effects and causes. Indeed, the understanding of altruistic suicide is that it is not only normal but moral; to ignore committing suicide when it is expected is to bring dishonor and disrespect to oneself. The unnatural state of a person who lives when he has no right to acts as a blot upon the society which can only be removed by suicide. In these situations, suicide is functional for establishing reequilibrium in the society. The explanation of altruistic suicide is not possible without recognizing these effects which result.

The section of Durkheim's work which is most well known deals with anomic suicide. Comparing egoistic suicide with anomic, he notes that the latter occurs when man's activity lacks regulation while the former stems from man's inability to find a basis for existence in life.[45] The types of suicide have different causes because circumstances surrounding their occurrence differ.

While egoistic suicide occurs in rather stable conditions of freedom, the anomic variety is characterized by crisis and the establishment of states of disequilibrium. Whether such conditions are periodic or chronic in a society is of little importance. What is meaningful is that in the anomic form the individual feels cut off from society while in the egoistic he perceives himself to be without meaning in it.

What, then, are the social facts and causes with which Durkheim is concerned? First, he attempts to explain elements in the suicide rate. Why do more Protestants than Catholics commit suicide? Why do single individuals commit suicide more often than the married? These questions represent, for him, the different types of suicide and constitute social facts. Second, he does not presume to give final explanations for these facts in the form of ultimate causes. In avoiding reductionism, he is satisfied to isolate purely social causes which are above the levels of individuals or social relationships.

Nevertheless, Durkheim realizes that such conclusions are still not a complete explanation of suicide, for it still varies with the unique individual. "Of course, not all the peculiarities which suicide may present can be deduced in this fashion; for some may exist which depend solely on the person's own nature. Each victim of suicide gives his act a personal stamp which expresses his temperament, the special conditions in which he is involved, and which, consequently, cannot be explained by the social and general causes of the phenomenon."[46] To more than approximate the explanation of suicide on this level is not possible and, it might be added, confirms the justification of Weber's contributions.

The Weberian Position

It might be well to balance the perspective used here with some comments on Weber's work. Despite the fact that causal analysis is possible in social science, Weber serves to remind us of the hazards in such an undertaking.

Weber's famous essay *The Protestant Ethic and the Spirit of Capitalism* was the first of a series of comparative studies of religion which he planned and made. It was his thesis that a capitalistic spirit, as exemplified by the Puritan "ethic", was a critical variable in the development of capitalism. In addition, certain broad social environmental factors were necessary to create the fertile ground. Without these two factors, capitalism, as defined by Weber, wouldn't develop.

Using the comparative method of analysis, Weber set out to find other societies which had one of the critical factors and not the other in order to observe whether capitalism developed. In Ancient China, Weber felt a case had been found to validate his thesis. The results could be simply shown as follows:

	Factor 1	*Factor* 2	*Result*
Western Europe	Environment conducive for capitalism	Protestant Ethic	Capitalism
Ancient China	Environment conducive for capitalism	No comparable ethic	No capitalism

Such an analysis exemplifies MacIver's second axiom. By observing that the consequences in China differ (no capitalism exists), we conclude the second critical factor was absent (no capitalistic spirit). This, in fact, Weber felt was the case.

It should be stressed that Weber's object was not to develop a tightly structured causal analysis. Rather, he could suggest that the Protestant Ethic was causal only after first establishing the existence of the effect, capitalism. Weber's greatest point of vulnerability lay in the definition of capitalism, not in his causal analysis. His methodology was far too cautious to permit claiming a law-like characteristic for the Protestant Ethic which would always result in capitalism.

At one point, his chief critic, R. H. Tawney, argues that "material and psychological changes went together, and of course the second reacted on the first. But it seems a little artificial to talk as though capitalist enterprise could not appear till religious changes had produced a capitalist spirit."[47] Elsewhere he criticizes Weber's conclusions as "susceptible, it may perhaps be held, of more than one interpretation."[48]

Weber never intended to be so deterministic. It was precisely for this reason that Weber closes by saying "it is, of course, not my aim to substitute for a one-sided materialistic an equally one-sided spiritualistic causal interpretation of culture and of history. Each is equally possible."[49] Perhaps he who claims more for social analysis doesn't truly understand its nature.

Conclusion

In bringing this paper to a close, I would hardly expect anyone to have a more clear understanding of the nature of causal analysis in social science. Though the issues are too complex at present to allow for lucid interpretation, I would hope that the differences in the means of explanation between the physical and social sciences are apparent.

In addition, we should be reminded of the points at which Christianity and the type of social science which has been described converge. First, one cannot adequately understand a "social fact" without considering *the impact of the individual.* On several occasions, it has been noted that analysis should start on the individual level. Secondly, causal analysis must *consider the intentions of the individuals* in their actions. Social behavior is increasingly teleological in nature in our society, and by orienting himself to the future, man causes his behavior to be less capable of being predicted. Finally, the *patterns of causal relationships are non-deterministic* and susceptible to the influence exerted by the individual and other unanticipated social forces. Within this framework exist the foundations of a valid causal analysis in social science and the opportunities, and dilemmas, of a Christian interpretation.

NOTES

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3. Quentin Gibson, *The Logic of Social Enquiry* (London: Routledge and Kegan Paul, 1960)
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6. Peter Winch, *The Idea of a Social Science* (London: Routledge and Kegan Paul, 1958)
7. John Stuart Mill, *A System of Logic* (8th ed., New York: Harper & Bros., 1884), pp. 630-631
8. *Ibid.*
9. *Ibid.*, p. 636
10. *Ibid.*, p. 641
11. *Ibid.* Hume anticipates the continuation of such a position on causes by referring to those philosophers, in a deprecatory manner, who "acknowledge mind and intelligence to be, not only the ultimate and original cause of all things, but the immediate and sole cause of every event which appears in nature". Charles Eliot, ed., *The Harvard Classics -- English Philosophers of the Seventeenth and Eighteenth Centuries, Vol.* 37: *Locke, Berkeley, and Hume* (New York: P. F. Collier & Son, 1910), p. 362
12. Hume, p. 326
13. George Homans, "Bringing Men Back In", *American Sociological Review,* 29 (December 1964), pp. 809-818
14. Gibson, p. 107
15. F. A. Hayek, *The Counter-Revolution of Science* (Glencoe: The Free Press, 1952), p. 176
16. Hume, p. 356
17. L. J. Henderson, *Pareto's General Sociology* (Cambridge: Harvard University Press, 1935). Such notions of equilibrium and self-adjusting systems are, of course, at the center of functionalism and contemporary organismic thought.
18. Hume, p. 368
19. *Ibid.*, p. 354
20. Emile Durkheim, *The Rules of Sociological Method,* ed. George Catlin (Glencoe: The Free Press, 1938), p. 25
21. *Ibid.*, p. 24
22. *Ibid.*, p. 42
23. *Ibid.*
24. It is interesting to note the strong convergence here of Homans with Durkheim. Nevertheless, while Homans raises the same warnings as Durkheim and advises a more precautious approach to theory, in his attack on functionalism and strong reductionist tendencies, Homans would greatly diverge from Durkheim.
25. Durkheim, p. 70
26. Max Weber, *The Methodology of the Social Sciences,* ed. Edward Shils and Henry Finch (Glencoe: The Free Press, 1949), p. 78
27. Hume, p. 368
28. John Stuart Mill, *The Positive Philosophy of August Comte* (New York: Henry Holt & Co., 1875), p. 9
29. Hume, pp. 328-329
30. *Ibid.*, p. 352
31. Arthur Pap, *An Introduction to the Philosophy of Science* (New York: The Free Press of Glencoe, 1962), p. 311
32. *Ibid.*, pp. 309-310
33. William P. McEwen, *The Problem of Social-Scientific Knowledge* (Totowa: Bedminster Press, 1963), p. 334
34. Robert M. MacIver, *Social Causation* (New York: Ginn & Co., 1942), pp. 23-24
35. *Ibid.*, p. 26
36. *Ibid.*, p. 29
37. *Ibid.*
38. *Ibid.*, p. 27
39. *Ibid.*, p. 30
40. *Ibid.*, p. 31
41. Emile Durkheim, *Suicide,* ed. George Simpson (Glencoe: The Free Press, 1951), p. 42
42. *Ibid.*, p. 44
43. *Ibid.*, p. 46. This premise which Durkheim makes concerning the social nature of suicide seems to be based on what MacIver refers to as "the faith on which all science rests". p. 34
44. *Ibid.*, pp. 219-220
45. *Ibid.*, p. 258
46. *Ibid.*, pp. 277-278
47. R. H. Tawney, *Religion and the Rise of Capitalism* (New York: Harcourt, Brace & World, 1926), p. 262
48. Max Weber, *The Protestant Ethic and the Spirit of Capitalism,* trans, Talcott Parsons (London: Allen and Unwin, 1930), Foreword, p. 10
49. Weber, *The Protestant Ethic.* . . . p. 183

Two Decades in the World of Science

The generation which has grown up in the past twenty years is unique. Nothing like it has ever existed in the history of mankind. Every teenager and every twenty-year old everywhere has, in his or her bones, radio-strontium, a manmade element which did not exist before 1945. Its presence, the result of fall-out from atmospheric bomb tests (now suspended), may be medically unimportant but it is the brandmark of The Atomic Age. For many, their birth certificates were registered by computers. For some, their zodiacal sign was Sputnik. . . . This is a generation which was born into The Atomic Age, programmed into the Cybernetic Age, rocketed into the Space Age and stands poised on the threshhold of The DNA Age. They take for granted scientific and technological advances about which the Founder Fathers of the United Nations legislating for the future, knew nothing. When they signed the Charter at San Francisco in June, 1945, only three people — Truman, Attlee and Eden — knew (and each imperfectly) about the impending release of nuclear energy. —Lord Ritchie-Calder in *The UNESCO Courier* — as published in HIS, January, 1967.

LETTERS TO THE EDITOR

The Computer Revolution

A few comments on Dr. L. H. Williams' article "A Christian View of the Computer Revolution", (Vol. 8, No. 2, June 1966).

In principal the digital computer is a simple device, yet it would not be an unreasonable modification in the use of words to describe its capability as "mental capacity." We must, however, recognize that a human who could do no more would be properly classed as an imbecile. The computer can compare two symbols and say they are alike or differ. If in numeric mode it identifies the larger. It can add a positive or negative one to any given number. It might have memory capacity for a few hundred or millions of symbols.

We might say that a computer is an imbecile but an incredibly fast one with perfect recall.

Man has been able to use it to solve such problems as extracting a root to any power only because man has been able to reduce such problems to an iterative sequence of additions and comparisons. It is man's ability to reduce complex problems to simple iterative sequences that makes the computer a valuable tool. In iteration, because of its speed and accuracy it can significantly out-perform man.

There is no more reason for man to fear the computer as "unfair competition" than there was for him in the past to fear that the animal beasts of burden and later the machine would put him out of work. Both are capable of out-performing man within narrow limits and, at times have given some new problems of readjustment. Those men who have prepared themselves to take advantage of their unique capabilities have never suffered from this competition. Man's unique versatility has always ensured his usefulness.

It seems to me that any Christian should have complete confidence that "being made in God's image" absolutely guarantees against our obsolescence if we will make use of our God-given talents. To consider any tool man can develop as capable of obsoleting man is to dishonor God in whose image man is made.

That man has been able to develop a computer means that we are closer to the day when machines will be the adequate slaves of men. Yet with perfect machine slaves, man has great need for service from his fellow man.

When man seeks to honor God and serve his fellow man, the computer is another effective tool to improve that service. It will never justify man's compensation for non-service.

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Divisions of Geologic Periods

The comments by Dr. J. N. Moore (March 1966 p.32) caused me to review once more the reference cited by Morris and Whitcomb (*The Genesis Flood,* p. 211) in light of the comments made earlier by Dr. Wayne Ault (March 1964, p. 30). Morris and Whitcomb refer to an address by Dr. Edmund Spieker as part of a Distinguished Lecture Series given at many universities throughout the country. The lectures were sponsored by the American Association of Petroleum Geologists to stimulate discussion on various phases of geology. It was their purpose to point up a problem which has long been recognized in the formation of the geologic column. This is the matter of the boundaries between the divisions of the geologic time table.

When first developed in the 19th century, the divisions between the geologic periods and eras were arbitrarily placed where there were thought to have been great tectonic (mountain building) movements. Thus it was said that the Appalachian Revolution marked the end of the Paleozoic, the Laramide Revolution the end of the Mesozoic, etc. As Spieker points out, this has long been known to be an unworkable concept for it is very difficult to determine the actual time of tectonics and no orogeny is worldwide. Spieker urges geologists to recognize, therefore, that the geologic column cannot be correlated exactly worldwide. He further points up the fact that mountain building has occurred through billions of years of geologic time and many orogenies are recorded in the rocks.

If Morris and Whitcomb had chosen to use Spieker's article in its entirety, they would have had one of the strongest arguments against the Noahic Flood's having formed all the geologic strata.

In pointing out the difficulties involved in placing orogenies stratigraphically, Spieker does not question the observed sequence of strata which have been laid down during the various geologic ages. He stresses the importance of correlation of the various outcrops to build up a composite geologic column. In correlating, the geologist determines that certain layers in one outcrop are the same as layers in another outcrop not immediately adjacent to the first. Thus, if four layers of outcrop A are observed and it can be shown that the top layer is the same as the bottom layer of outcrop B, then a composite column incorporating the layers in both outcrops can be made. It is from this type of careful field work that the total geologic column of about 500,000 feet of strata has been determined.

If these were all laid down by the Noahic Flood, we should not have the evidences of numerous orogenies in the column; many times layers were deposited, formed into rock by cementation or compression, raised up to make mountains, then eroded to deposit sediment in another basin.

In contrast to Morris and Whitcomb's observation (p. 209), "The geologic time scale is an extremely fragile foundation on which a tremendous and unwieldly superstructure of interpretation has been erected," Spieker (p. 1812) says, "I do not propose

any changes in the time scale. Past experience shows, for one thing, that it would not do any good. But, more important, the scale we have is just as good as any other; let us merely use it in full apprehension of the things I have been trying to bring out. Let us try by all means to think intelligently about it, laboring to discover the real significance of its boundaries and making them conform to nature as far as possible but realizing that *in the end correlation is far more important than subdivision* and that our whole picture of boundaries may be illusory; above all improving the means in paleontology, stratigraphy, and structural geology as best we can to deal with its extremely difficult problems, but never allowing ourselves to see in it features that are not justified by all the pertinent and acceptable facts. Let us not forget that our time scale is a distributive generalization and so can not stand on any group of facts for any time or place."

Spieker's argument is not against the time table and an orderly sequence of layers laid down over a long period of time, but points out, as long recognized by geologists, that the boundaries between the divisions cannot be worldwide and are difficult to pinpoint at most localities.

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Warfield and Antiquity of Man

In the light of J. O. Buswell, III's rejoinder (JASA, Dec., 1965), my position apparently needs some clarification. When I say that "Warfield's paper is intrinsically bound up with the science of his day", I do not mean logically, but psychologically. Warfield said:

> Science does not demand an inordinate period for the life of human beings on earth: this is done only by a particular school of speculative theorizers, the validity of whose demands on time exact investigators are more and more chary of allowing. (p. 236)

He reiterates this position often enough in his paper (cf. pp. 245, 246, 249, 250) to make it clear that in his mind anyone claiming a date for the origin of man in excess of 20,000 years was a "speculative theorizer", an inexact investigator, and a doubtfully scientific person, who was doomed to pass away.

On the background of this psychological conviction, Warfield made his statement that "There is no reason inherent in the nature of the Scriptural genealogies why a genealogy of 10 recorded links . . . may not represent an actual descent of a 100 or a 1,000 or 10,000 links." (p.238) He cavalierly made this statement at a time when he felt sure that no one would ever have occasion to take the "10,000 links" literally and rest a defense upon them. To go on quoting this statement then as justification for dating Adam before 20,000 B.C. does violence to Warfield's true position.

On the other hand, Warfield did mean what he said in that the genealogies *per se* can conceivably, in the abstract, be stretched to infinity. But here again, one is scarcely justified in using his statement in the abstract, apart from the context of the rest of his paper—not to mention being apart from the context of the Bible (cf. my original paper and pp. 186-7, *A Survey of Old Testament Introduction*—Gleason L. Archer).

Warfield also said,

> For the whole space of time before Abraham, we are dependent entirely on inferences drawn from the genealogies recorded in the 5th and 11th chapters of Genesis. And if the Scriptural genealogies supply no solid basis for chronological inferences, it is clear that we are left without Scriptural data for forming an estimate of the duration of these ages. (p. 237)

He concluded that the "Scriptural data leave us wholly without guidance". You say that this conclusion is independent of the science of his day, and you cite it to contradict the "claim made by Seely and others that there are indeed Scriptural guides and indications for ascertaining the age of man . . ." But this conclusion of Warfield's is a pure assumption on his part. He never tried in any way to prove that there is nothing but the genealogies in Scripture to serve as chronological guides. You cannot use this conclusion then — a mere assumption — to contradict my paper.

The dating of Adam, Cain, Abel on the basis of their associated culture either never crossed the mind of Warfield; or if it did, he completely ignored it in his paper. I believe that he overlooked this crucial question because he was never sufficiently challenged by the science of his day (by solid evidence instead of just "speculative theorizers") to take the matter seriously enough to make a thorough investigation (to look a little longer and harder) into the ways of possibly dating Adam.

It is true, finally, that dating Adam in the Neolithic age is "one interpretation", but you cannot dismiss it simply by saying it is preconceived and that Warfield held an interpretation that allows Adam to be created 200,000 years ago. I tried to show in my paper that if you place Adam anywhere but in the Neolithic, you run into very difficult if not insurmountable problems. To use Warfield legitimately, you must show how his thesis overcomes these difficulties — but this is, of course, impossible because he never dealt with the issue of the cultural discontinuity between Genesis 3 & 4 and Paleolithic man.

Lulled to sleep by the science of his day, he made statements which abstractly can be used to defend dating Adam in pre-Neolithic times; but *even then*, the problems that I and others have raised remain. I say then "hiding behind Warfield" because (even if you still do not agree that the science of his day seriously affected the limits and conclusions of his paper) — his paper is limited to the genealogies *per se* and has no answer whatsoever to the present conflict over the cultural discontinuity between Adam and Paleolithic man.

I am still convinced that (even if my "one interpretation" proves to be incorrect) Warfield's paper is essentially irrelevant to the modern point of debate. The cultural discontinuity still remains to be explained, and the quoting of Warfield only obscures this issue and prolongs the agony of finding a genuine solution.

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Response by J. O. Buswell, III

In answer to Mr. Seely's letter I should like to express a few thoughts regarding a distinction between Warfield's position and attitude toward the Bible and his position and attitude toward the science of his day.

Warfield's "true position" with reference to the science of his day indeed might have been as Mr. Seely ably describes. He could very well have had a "psychological conviction" that the remote antiquity of man was only held by "speculative theorizers." Thus his statements on the interpretation of the genealogies could have been "cavalierly made" — cavalierly regarding the science of his day, *but not regarding the interpretation of Scripture.*

Warfield's thesis, as I tried to show, is not in the realm of prehistory nor does it rest upon any particular scientific position or period. It is a thesis in exegesis. It is this thesis which stands today, self consistent and authoritative, independent of the vacillations or progress of science. Warfield's position is the more independently authoritative in this regard precisely due to his recognized stature in other areas of theology. No one can note his writings on apologetics, Christology, and systematic theology and his treatment of canonicity, the trinity, atonement, revelation, and inspiration in the major corpus of his works and be aware of their place in the heritage of today's conservative Christian thought without realizing that his paper "On the Antiquity and Unity of the Human Race" was not merely based upon arguments "in the abstract." There is absolutely no reason to believe that Warfield's considerations of Adam, creation, genealogies, *et al* were not thoroughly integrated into his system of theology, in "fundamentalist" terms at that time, completely without compromise.

As I indicated before, quoting him serves to identify us with the orthodox doctrinal position in all of these areas. I quote his interpretation of the Bible, not his leanings toward one interpretation or another of fossil man which he considered of "no theological significance." I quote him, as I stated, "As one of the most conspicuous and able defenders of Bible inerrancy."

Mr. Seely is also correct in pointing out that Warfield did not solve the problem of squaring the apparent cultural references in Genesis 3 and 4 with the existence of Paleolithic man. Neither have present-day theologians. Nevertheless, as I have previously insisted, a radical re-interpretation of these passages would not involve a fraction of the doctrinal jeopardy consequent upon a discontinuity in the unity of the human race which is demanded, as Seely earlier pointed out, by placing Adam in the Neolithic with human populations living long before.

The only alternative, and the one which Mr. Seely indicates that he has chosen, eliminates the discontinuity in the unity of the race by sticking to a "preconceived *interpretation* of another body of data", namely, the entire extent of the existence of Palaeolithic man. I do not dismiss this position merely because it is preconceived. I accept it as one alternative pattern of interpretation and fully recognize its particular resolution of the central problem. But anyone adopting this position must be prepared to offer with it an alternative interpretation of Palaeolithic man without doing violence to a considerable body of interrelated evidence.*

Warfield's position is of value, then, not "as justification for dating Adam before 20,000 B..C" which rests on other grounds; rather the value lies in the fact that *whatever* antiquity we find for man, it does not conflict with an orthodox position on inspiration.

May I enter another plea? If critics of Christian anthropologists wish to take the argument from there, it would be most helpful to take it to our conservative theologian colleagues and really come to grips with the issues at the level of the established canons of hermeneutics.

*Buswell, J. O., III, "Adam and Neolithic Man," ETERNITY, Vol. 18, No. 2, (February, 1967).

James O. Buswell, III
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Leith's Law

George Mavrodes (JASA, December 1966) finds some absurdity in my ideas about the absurdity of certain aspects of the thesis of apparent age, assuming (he says) that he understands these ideas. I think that he does, although I confess that I would have thought it was rather less difficult to arrive at this understanding of what I said. However, I now fail to see how my argument leads to the absurd conclusion which George derives from it. Let me outline the relevant ideas and the non-sequitur should be clear.

Firstly, I take it that there are logically impossible propositions which are also meaningful. It appears to me that the proposition "the knowable universe began with the appearance of considerable age at some time rather more recent than this apparent age" is both syntactically sound and without self-contradiction, and thus it is meaningful. Assuming this, until I am shown otherwise, I am also of the opinion that all the evidence appropriate to the proposition stated above, if this evidence is the knowable universe, is at the same time evidence corroborating and evidence falsifying it. I take this to indicate logical impossibility.

Now I can conceive of some source, such as visions or written revelation, indicating that the knowable universe began X years ago, although propositions about such matters have their own problems. I might also accept, assuming these problems are soluble, the truth

of such an indication if the credibility of the source and its interpretation seem well founded. Again, I might imagine some age Y for the universe as the last (not just the latest) word of science on the subject but this age cannot, since it includes all the relevant observational evidence and a correct understanding of all the relevant laws of nature, show a difference between the real age X and the apparent age Y. Thus I can accept the truth of the proposition "the universe has an age X" from a non-observational source of evidence and the truth of "the universe has an age Y" from scientific evidence.

However, I consider the conjunction of these propositions within the language of science to be logically impossible since all the scientifically relevant evidence, the knowable universe, both corroborates and falsifies the proposition "the universe has an actual age X and the appearance of a greater age Y". Of course, I may define "relevant evidence" to include sources other than the knowable universe since I take those sources, e.g. visions and written revelation, not to be part of the universe with which science, as normally understood, deals in determining the age which we seek. If this new definition is permitted, and it certainly may be even by a scientist, then the proposition is logically possible and may be true. I take it to be very likely false upon examining these additional sources of evidence with which I am familiar.

Thus logical possibility seems to depend upon what one considers evidence relevant to the truth or falsity of a proposition. I feel free to consider evidence which is not part of science as it is normally understood but I cannot introduce such evidence into that science. The scientist dealing with the physical universe is forbidden to use everything which he claims to know when conversing within the discourse of his discipline, although I hope he can still talk about his discipline, its limits, and what may lie beyond that discipline. The philosopher and others will do it for him if he doesn't. His prejudices and abilities may limit his interests and resources here but I cannot agree with George that it is his scientific concerns which restrict him. Rather, those concerns are limited by, among other things, decisions as to what is to be taken as relevant to them.

I take this to be something of a mixed blessing in the history of science when, for example, it delimits biology from chemistry in artificial ways, but no clear reason for diluting the general distinctions as to the sorts of relevance which I have been discussing. Perhaps George sees Leith's Law of demarcation as restricting the whole man, but surely there are useful and perhaps ontological differences between the realm of physical nature and the non-physical which one takes into account when one is a whole man doing scientific work. I find this a meaningful proposal and not at all absurd.

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The Sources of Science

Re the article by Mr. Siemens in the September, 1966, issue.

If I understand it correctly, he bases his argument on these ideas:

1) Christianity was the first philosophy to believe in the order of the universe.

2) The development of science was in large part due to a desire to benefit mankind, as a result of Christian thinking.

3) The "virtues" of the scientist are Christian virtues.

First, it is really unimportant which philosophy recognized the rationality of the universe. Mr. Siemens makes a good deal more of the mutual rationality of man and the universe than he should. This is no remarkable belief necessitating a "blind" leap of faith; the agnostic holds that man's rationality is an effect of the universe, just as his senses are adapted to his environment. If the Universe were arational, man would be arational in an identical way.

Second, Christianity should not want, logically, to benefit mankind. This is a purely cultural phenomenon of Western civilization. In this connection I invite you to read Letter VII of Mark Twain's *Letters From The Earth*.

Third, the "virtues" of the scientist have only this in common with Christian virtues; they derive from necessary rules of successful human relationships. It has been my feeling that Christian virtues do have some success in this area, but they are not sufficient.

I am afraid I have not developed these arguments enough to be convincing, but I hope you can see what I'm getting at mainly. I would be glad to have an opportunity to enlarge them, if some points are not clear.

Daniel Arthur Parelius, B.P. 8020,
Abidian, Cote D'Ivoire, West Africa

In a Hurry

Africa is a continent in a hurry. Her people see the advantages that modern technology has brought other countries and demand the benefits quickly. Meanwhile the population is soaring. From 260 million today it is expected to reach 353 million by 1980, so unless some major improvement is made, African countries could find their standard of living gradually declining over the years.

Starting this whole movement going is difficult. These countries will have to tackle many different things at once. They will have to raise overall educational standards. They will need to improve radio and newspapers and other methods of mass communication, so that the whole population can know what is going on. They will have to increase the number of scientists, which means increasing the number of universities and technical colleges, and the number of science teachers who train the children before they go to the university. All of this is going to cost money which will show no immediate return. —*UNESCO Features* – as published in HIS, October, 1966.

GOD'S MAN IS WHO I AM

SANDRA WETTHER*

A spec of cosmic dust—
A germ within a cell—
A cog to turn a wheel—
A link in a leaden chain—
Oh no, for I've the inexpressible joy
To scream—
I am God's man!

Not a cosmic particle,
Nor an insiginificant germ;
Not a mere mechanical cog,
Nor a lifeless leaden link!
Oh, no, for I can love and feel and think!
Yes, I must repeat—
I am God's man!

They say I'm really ape-like,
A monkey running 'round;
They call it evolution—
One cell – some change – and man.
But oh, the special wonder
Of a God-created man—
I am God's man!

Yes, I can love and feel and think—
I can even feel it hurt way down deep.
I can hear music and my whole body sings—
I have life and love and more – and God gave them all to me!
Cosmic, insignificant, mechanical, or lifeless—
Oh, how can it be?!?
I am God's man!

I peel an orange and taste its citric tartness—
I pick a jasmine blossom and its fragrance fills my head.
I piece a poem together and find my own expression—
I perceive complete fulfillment in the one I'll find to love.
Impossible that I just happened,
Or developed bit by bit—
I am God's man!

"And man became a living soul."
So says the Holy Book;
A universe of order,
A God of love, yet righteous,
A God-created Adam—
Oh, how I believe it—
I am God's man!

* Sandra Wetther is at Westmont College, Santa Barbara, California.

BOOK REVIEWS

MARLIN KREIDER
Editor

ADAPTATION AND NATURAL SELECTION: A CRITIQUE OF SOME CURRENT EVOLUTIONARY THOUGHT by G. C. Williams. Princeton U. Press. 1966. 307 pp., $6.50. This book, written for advanced students and professional biologists, takes a stand against unnecessary use of some of the current concepts such as genetic assimulation, group selection and cumulative progress in adaptive evoluton. The author suggests ideas of his own that can be used to understand biological adaptation.

HERKUNFT AND ZUKUNFT DES MENSCHEN: EIN KRITISCHER UBERBLICK DER DEM DARWINISMUS UND CHRISTENTUM ZUGRUNDE LEIGENDEN NATURWISSEN-SCHAFTLICHEN UND GEISTLICHEN PRINZIPIEN by A. E. Wilder-Smith. Brunner Verlag. 1966. 160 pp. The author deals with many subjects bearing on creation and evolution. He concludes that most popular attempts to harmonize Darwinism with beginning Genesis are unsuccessful. He also concludes that the creation of life in the laboratory, if it should happen, only proves the need for a wise creator. He goes on to state that 'theistic evolution' is not consistent with the character of God. (From the book review by E. Y. Monsma. *Christianity Today* 11(9): 39, 1967.)

CENTER OF THE STORM: MEMOIRS OF JOHN T. SCOPES by J. T. Scopes and J. Presley. Holt, Rinehart and Winston. 1966. 277 pp. $5.95. The memoirs of the Tennessee school teacher who in 1925 allowed himself to be used to test that state's anachronistic anti-evolution law in order to work up a bit of publicity for his home town even though he was uncertain whether he had actually taught evolution—he found the trial to be great fun.

ARCHAEOLOGY AND OUR OLD TESTAMENT by J. L. Kelso. Zondervan. 1966. 192 pp. $4.95.

CHRISTIANITY AND SCHOLARSHIP by W. S. Reid. Craig Press. 1966. 110 pp. $1.50 paperback.

THE BIBLE, SCIENCE AND CREATION by S. M. Coder and G. F. Howe. Moody Press. $2.95. Written for the non-technical reader.

CHRISTIAN ECONOMICS: STUDIES IN THE CHRISTIAN MESSAGE TO THE MARKET PLACE by J. R. Richardson. St. Thomas Press. 1966. 169 pp. $4.95 Deals with the general principles by which religious faith influences the values one attaches to goods and services. It also touches on the historical aspect of the Christian influence on the economy of Western civilization.

THE DEVELOPMENT OF CONSCIENCE by G. M. Stephenson. The International Library of Sociology and Social Reconstruction. Routledge and Kegan Paul. 1966. 134 pp. 25s net. From the study of psychopathic youth in a mental hospital who have by definition no conscience a concept of the development of conscience and motivation for good behavior is constructed.

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