JOURNAL OF THE AMERICAN SCIENTIFIC AFFILIATION

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The Journal Celebrates Its 30th Anniversary

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

THE JOURNAL'S 30th ANNIVERSARY

On January 7, 1949 the first issue of the *American Scientific Affiliation Bulletin* appeared under the editorship of Marion D. Barnes. It consisted of 19 sheets mimeographed and mailed by Russell L. Mixter in Wheaton, Illinois. The ASA had 75 members. The name was changed to the *Journal of the American Scientific Affiliation* one year later and mimeographing gave way to printing in 1952.

Page 1 of this Volume 1, Number 1, consists of a foreword by Editor Barnes. It is perhaps worthwhile to repeat here the initial vision concerning the purpose of the *Journal*.

> *The purpose of the* ASA *Bulletin is manifold. It is intended primarily for the benefit of the ASA members, and interested friends, and it is hoped that it will be instrumental in helping the organization achieve its primary purpose of witnessing to the truth of the Scriptures and elucidating the relationship of both the ideology and fruits of science thereto. Furthermore we confidently expect that in the publication of papers presented at the convention and others received from the membership at large, a real service will be rendered each of us in creating an enlarged appreciation and understanding of the Christian position in other fields of science than that of our own specialization. Also thru the* ASA Bulletin *we plan to give every interested member the benefit of a constructive criticism and Christian evaluation of papers presented and of reviews of books of great interest or strategic importance.*

Today with 4300 copies of each issue of the *Journal ASA* being printed, we hold to these same goals in the somewhat extended format that growth in membership and in science/Christianity relationships over the past 30 years has brought about. With this March 1979 issue, we add another 16 pages to bring you a 64 page issue.

A second feature of the *ASA Bulletin* was to provide editorial opportunities for guest authors. That first issue contained an editorial by then President F. Alton Everest, one of the founding fathers of ASA. Urging wide dissemination of copies of *Modern Science and Christian Faith* to the colleges and universities of the United States, Alton closes with the following words:
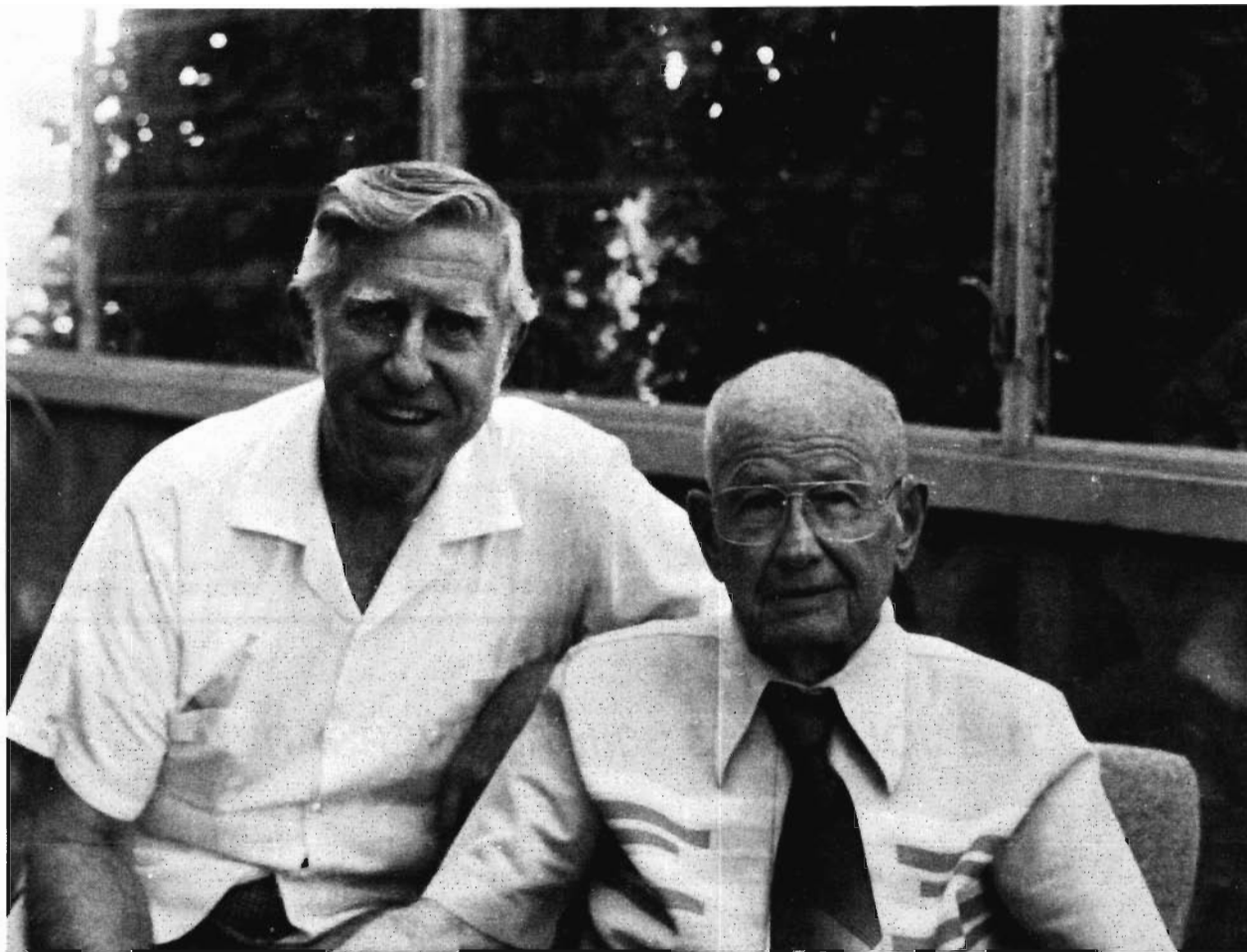
Founding Fathers F. Alton Everest and Peter W. Stoner on Peter's 90th birthday, June 16, 1978.

> *In short . . . the work of the ASA is just what we few members, by the Grace of the Lord, make of it. If we are lethargic, the work will shrivel; if there is no vision, no progress. I urge each member to make a positive and definite contribution to the work of the ASA, unsolicited, during 1949 that these students might be reached with the claims of Christ.*

The first issue of the *ASA Bulletin* contained two papers. The first of these was "A Christian View of the Development of Science" by Marion D. Barnes; the other was "The Meaning of Mathematics" by H. Harold Hartzler. They were both papers that had been presented at the 1948 Third Annual Meeting of the ASA, held at Calvin College with 25 registrants.

We celebrate this 30th birthday of the *Journal ASA* by reinstating the practice of guest editorials. Any ASA member may submit material for such an editorial (not more than 750 words) and we will select the most challenging and timely for publication.

We are grateful for the blessings of God upon the work of the ASA over the 30 years during which the *Journal ASA* has been published. His gift to us of greater potentialities carries with it greater responsibilities. Alton Everest's words are as true today as they were in 1949.

R.H.B.

The Behaviorist Bandwagon and the Body of Christ

I. What Is Behaviorism?

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To all appearances, they were simply an attractive and successful young couple: middle class, professional, and upwardly mobile. I had met them during a summer conference for Christian graduates, and discovered that from a liberal-church background, they had recently come into a more deeply biblical faith which they hoped the conference would expand and enrich. But further conversation revealed a complication in their lives which bid fair to ruin their marriage and shatter their young faith: they were the parents of an autistic child who was slowly driving them both (but especially the wife, who was his primary caretaker) to despair. After meeting four-year-old Billy, it was easy to see why. Despite that preliminary impression of haunting, almost other-worldly beauty which so many autistic children seem to emanate, he had never learned to talk, and showed virtually no signs of social attachment to—or even real awareness of—his parents or anyone else. His failure to develop communication skills was ironically more than made up for by a physical dexterity which could empty drawers of their contents in seconds flat, tear up a shelf full of books page by page, pick locks, divest Billy of all his clothes dozens of times each day, or take him ten blocks away from home the moment his mother lapsed from a state of constant vigilance over his every move. His mother was becoming weary and desperate, and his father, finding it harder and harder to deal supportively with her, was beginning to withdraw into an unhealthy over-preoccupation with his job. A month later, when I stayed at their home during a professional conference I was attending in their city, the family situation seemed on the verge of collapse because of the child, for whom they could find no place in any existing scheme for exceptional children.

The situation seemed bleak indeed—yet in our next exchange of correspondence a few months later, a

totally new note was being sounded: Billy had been accepted into a behavior modification program, and within weeks had begun to talk, to show other signs of social awareness, and desist from his bizarre behavior. His mother, progressively released from the tyranny of the child's former behavior, was full of hope, and the marriage relationship was improving steadily. The behavior modification program, she said, had been an answer to their prayers, and for the first time in years, life was worth living again.

Basic Definitions

What is behavior modification all about, and why should thinking Christians be concerned to understand it? Therapies for so-called disturbed people come and go; they all seem to work sometimes for some people, but no single one has emerged as a cure-all. Behavior modification might be just one more such tool in the therapist's bag of tricks were it not for a couple of other considerations: on the applied level, over the past ten years or so, it has had an impressive record of bringing back to some semblance of normality certain categories of people who had long since been abandoned (after the failure of more traditional therapies) to a life of minimal custodial care. These have included not only autistic children like Billy, but back ward schizophrenics, retardates, and certain other types of emotionally or socially disturbed persons.[1] On the theoretical level, the techniques of behavior modification are undergirded by a philosophy of man and the world which has attracted both ardent disciples and hostile critics. On both levels—the theoretical and the applied—there are far-reaching implications of which Christians need to be aware.

The term "behaviorism" (from which the clinical techniques of behavior modification originally derive) needs to be understood on three different levels: there is first of all what I will call *ontological behaviorism*—a set of faith-assumptions about the nature of human beings, and about the way they ought to be studied

by psychology. Secondly, there is *methodological behaviorism*[2]—a "model" which directs much laboratory research on human and animal learning, and which may *or* may not presuppose ontological behaviorism, depending on the researcher. Thirdly, there is *applied behaviorism*, which includes techniques of behavior modification and behavior analysis and which, in turn, may have a very tight *or* a very loose relationship to ontological behaviorism and methodological behaviorism depending on the practitioner. To evaluate the behaviorist movement in psychology in terms of a Christian worldview, we need to know what each of these three levels comprises.

The term *Behaviorism* came into use in the early 1900's when many academic psychologists, anxious to sever their historic ties with philosophy and to establish psychology as a discipline amenable to the scientific method, declared that it was both possible and desirable to develop a "science of man" which made no reference to what went on inside man's head, but rather concentrated exclusively on his *externally-observable behavior*. Behavior (usually defined quite simply as the movement of muscles and the functioning of bodily organs) could, after all, be reliably observed and measured by the researcher, whereas one could, they claimed, only theorize and argue endlessly about the nature of internal mental phenomena such as anxiety, love, hope, hostility, and the many other processes which the ordinary man on the street would naively expect to make up the subject matter of psychology.

The early behaviorists thus took it as their assumption that man could be studied in the same way the Newtonian physicist studied force and matter, or the biologist studied plants and animals: neither the physicist nor the biologist works on the assumption that the rock or the tree has internal feelings or mental processes which may account for their activities; only animistic, pre-scientific man thinks about rocks and trees in such ways, said the behaviorists. Rather, the scientist sees the rock or the tree as being essentially a passive reactor to the physical and chemical events of the environment, and the business of science as the establishment of clear relationships between environmental causes on the one hand, and their subsequent effects on matter, animal tissue, plant organs, or whatever. Indeed, science (and its offspring technology) began to make headway in the 16th century only inasmuch as it *did* consistently regard its subject-matter in this impersonal and objective way. The time had come, said the behaviorists, to study the behavior of man and animals in the same way, abandoning speculative pre-scientific notions about mental events which could not be seen or measured, and concentrating rather on experiments which revealed lawful relationships between measurable environmental causes (or "stimuli") on the one hand, and the organism's measurable, external behavior (or "responses") on the other. In this way, it was claimed, behavior could ultimately be understood, predicted, and controlled with the same mastery now displayed by the physicist over his lump of matter, or the biologist over his piece of animal tissue.[3] Hence, this extreme form of early behaviorism implied in the first place a mechanistic or "deterministic" view of man: man passively acted upon by his external environment rather than freely acting on it.

Secondly, it implied that human beings were devoid of any relevant, internal mental processes (such as free will, imagination, feelings, motives, or purposes) which might need to be studied over and above their externally-observable behavior in order to have a complete picture of what it means to be human.

Thirdly, extreme ontological behaviorism assumed that man was part and parcel of a totally materialistic universe—that is, a universe in which even man's apparent capacity to think, create, and make moral choices was reducible to the physical and chemical activity of the brain, leaving no place for any phenomena of a non-physical, mental or spiritual nature.

It must quickly be pointed out that this extreme form of behaviorism was progressively qualified in psychological circles (following J. B. Watson's original statement of it in 1913.[4] Nevertheless, its "deterministic," "mental process-less," and "materialistic" flavor has dominated North American psychology—both academic and applied—ever since.

Methodological Behaviorism

Deterministic views of man—*i.e.*, the notion that man is passively shaped by his environment and that as a consequence "free will" is an illusion—stretch back much further in the history of ideas than the advent of behavioristic psychology early in this century.[5] What made the behaviorist notion unique was (as we have just outlined) its combined emphasis on determinism, "mental processlessness," and materialism in its view of man. In addition (and perhaps more importantly), behaviorists proposed to take their view of man into the research laboratory and test it out experimentally. In those areas of psychological research leading to the practices of behavior modification, this has led to two major streams of research known as *respondent conditioning* and *operant conditioning*. Some behaviorists indeed took their view of man into the laboratory apparently convinced in advance that the research results would progressively confirm him to be a mechanical being, whose behavior is determined almost, if not totally, by the present shape of his environment and not at all by any relevant, mental or spiritual processes. Such researchers were what we might call "hard" ontological behaviorists. Other researchers, equally committed to the same experimental methods, did *not* assume the underlying view of man suggested by ontological behaviorism. Rather, they merely concluded that the most convenient and fruitful way to study man's behavior was to do laboratory studies *as if* man were a mechanical being totally at the mercy of his present environment. It is this latter position, saying "let's suppose just for the purposes of organized research that man is in some respects *like* a machine," which we will designate "methodological behaviorism."

The adherence to methodological behaviorism in laboratory experimentation led, as we have just mentioned, to two major research foci: the first was *respondent conditioning*, which deals with those behavioral responses for which human beings appear to be pre-wired (reflexes such as heart-beat, pupil dilation, respiration, eye-blinking, sweating, and so forth); the other was the *operant conditioning* of non-reflexive, muscular movements which we ordinarily think of as "voluntary" (such as picking up an object, putting food

into our mouths, walking to the store, and so on). The applied techniques of behavior modification later drew from both these research traditions.

Respondent Conditioning

In the area of respondent conditioning, the classic experiments (as every introductory psychology student knows) were done by the Russian physiologist Ivan Pavlov, who demonstrated with dogs that the "unconditioned" (that is, "built-in") response of salivation following the placement of meat-powder in the mouth could become "conditioned" to a stimulus (such as the ringing of a bell) which originally had no power to elicit salivation at all, provided that the bell was first paired for several trials with the original meat-powder, which could later be withdrawn. Pavlov, of course, went on to demonstrate that the situation was more complicated than this: the dog who has learned to salivate to the sound of a bell will not do so indefinitely if he is never given meat-powder again—his salivation response will "extinguish". Further, if he has learned to salivate to the tone of middle-C, for instance, his salivation will usually "generalize" somewhat to B and to B-flat, or to C-sharp and D in direct proportion as those tones are like the original. However, we can get the dog to "generalize" his response less—that is, to make it more "discriminating"—by making sure, during the training period when bell and powder are presented together, that he is always given meat-powder with the middle-C tone, but never to any other tone, no matter how close to middle-C. Research in respondent conditioning has undergone many sophisticated refinements since these early experiments, but the above description suffices to give the reader a general idea of its approach to the study of learned behavior.

Operant Conditioning

The second stream of laboratory research contributing to the behavior modification movement is that of *operant conditioning*, in which we are not dealing with an environmental stimulus (such as a bell, or meat-powder) which precedes and "pushes out", or elicits, a reflex response, such as salivation or fear, rather we are taking advantage of spontaneously emitted motor responses and "shaping" them in the way we want them to go by rewarding them immediately *after* they occur.

In the classic experiments of this research tradition, B. F. Skinner used hungry pigeons placed in what is now universally known as the Skinner box, an apparatus in which, to get bits of food, the animal has to learn to peck at a plastic disc, which then automatically releases a bit of grain into a trough. The animal's disc-pecking behavior is shaped by "reinforcing" with food first its mere proximity to the disc, then a little later, proximity plus raising its head toward the disc, and finally only actual pokes with its beak at the disc itself. Again, the animal's behavior is assumed to be totally determined by the environmental conditions: in its internal environment, the pigeon is hungry; in the external environment, the experimenter has set up certain conditions which the pigeon must meet with its behavior in order to eat—and eventually, it does. The situation can be complicated by requiring the pigeon to peck not once, but perhaps ten times for

Can the researcher assume that all behavior is determined, and proceed to establish universal laws about the causes of any and all behavior, including such things as moral actions, aesthetic preferences, and religious activity?

every piece of grain, in which case it will peck harder and faster to reach the imposed quota. Or we might reinforce the pigeon with grain on an erratic schedule —after random, unpatterned numbers of pecks, in which case the animal will continue his pecking behavior indefinitely, even after the grain-reward has been permanently withdrawn. We can also build in what are known as "secondary reinforcers": if the pigeon's pecking yields grain only when a red light is on in the Skinner box, the animal will learn to work to get the red light (the secondary reinforcer) to turn on so that he can then peck successfully for food.

Human Conditioning

Early research in both respondent and operant conditioning was conducted entirely on animals. But it was not long before laboratory experiments were being conducted which seemed to show similar conditioning propensities in human beings.

As an example of respondent conditioning in human beings, a puff of air to the eyeball reflexly causes a person to blink; if the puff of air is preceded often enough by, say, a bell or a flash of light, eventually the "conditioned stimulus" of bell or light will be enough, by itself, to elicit the eye-blink response. In a more practical example, a toddler touching a hot stove will very quickly and very reflexly withdraw his hand. Thereafter, the mere sight of the stove (previously neutral, or even attractive to the child) will act as a "conditioned stimulus" to produce a "stay-away response."

Operant conditioning could also be reliably demonstrated in human beings. For instance, a child before a set of colored buttons in the laboratory may be required to learn that pushing the "blue button" will yield him the "reward", or "positive reinforcement" of a marble. Although the child may start out playing with all the buttons in a more or less random fashion, once he has discovered that "pushing the *blue* button" yields a marble, he is more apt to focus his button-pushing "responses" on the particular "stimulus" of the blue button to the exclusion of the others. Or, in a more everyday example, the child learning to talk will make all kinds of unstructured babbling sounds—but gradually, as his parents use praise and encouragement to "positively reinforce" those sounds which approximate real words, the child begins to use such real-word approximations more and more to the exclusion of non-word babblings.

In all of this, the question again naturally arises: is the animal or person in a respondent or operant conditioning situation a totally passive organism, simply reacting to the conditions set up by the experimenter, unable to "think about," or "choose" his responses? Is he reacting as passively and thoughtlessly to externally

imposed, present conditions as two chemicals react to the manipulations of the chemist? And if he is, can the researcher then assume that *all* behavior—both human and non-human—is so determined, and proceed to establish, through further experimental research, universal "laws" about the causes of any and all behavior, including such things as moral actions, aesthetic preferences, and religious activity?

Psychologists engaged in such research differ in their responses to this question—but as methodological behaviorists they are generally all agreed on one issue, namely, that whether or not mental processes such as "free will" and "reflection" exist in man, animals, or both, the most fruitful and "scientific" way to study behavior is to proceed *as if* such processes did *not* exist. That is, the laboratory researcher should *assume*, for the purposes of his research that the organism whose behavior he is studying is totally at the mercy of the environmental manipulations imposed on it, and that, furthermore, one can come up with an adequate psychological description of him by concentrating on only what one can *see* and *measure* the organism doing externally, with no need to infer any "mental events" going on inside its head. This way, one can set about establishing "S-R" (stimulus-response) laws—laws about which environmental stimuli systematically and reliably produce which behavioral responses. Research psychologists may or may not transfer these assumptions to themselves as behaving organisms. Indeed, most probably do not, but rather credit themselves with both free will and other creative mental processes which they routinely use. Nevertheless, they continue to research the behavior of other people and of animals according to the assumptions of methodological behaviorism because they are convinced that this is the approach which will yield the most useful results, both for psychological theory and clinical practice.

Applied Behaviorism

We have just sketchily outlined the behaviorist laboratory research approaches of respondent and operant conditioning. How are such research orientations then applied to practical human behavior problems such as you and I might conceivably encounter?

On the applied level, the behavior modifier (or behavior therapist) transfers Pavlovian assumptions and techniques of *respondent* conditioning to human beings particularly in the treatment of maladaptive phobias. A person who has a pathological fear of dogs, for instance, is presumed to have picked up the reflex, emotional reactions which (to the behaviorist) are the essence of fear (increased heart-rate, sweating, pupillary dilation, butterflies in the stomach) in the same way Pavlov's dog picked up his habit of salivating to the sound of a bell. The sight of a furry dog to a child is usually neutral, if not positive—but if traumatically paired with the pain of a bite (which reflexly elicits crying), the sight of a dog may become a conditioned elicitor of the fear response, which never extinguishes because the child never allows himself to get close enough to a dog again to discover that not all dogs bite, and, indeed, that some are quite pleasant to be with.

To reverse this state of affairs, the behavior therapist uses processes known as "systematic desensitization" and "counterconditioning": the phobic client is first

taught (sometimes with the help of drugs) to relax deeply and peacefully in the therapist's office. Once this has been accomplished, "dog-images" are very gradually introduced, beginning with small, innocuous, far-away dog-photos and eventually working up to slides and movies in living color, and then to actual, unchained dogs right in the office. At no point does the therapist move on in the "stimulus hierarchy" of dogs before the client is able to maintain a state of complete relaxation in the presence of a less-threatening dog-image. What the therapist is doing is teaching the client to learn a new response (relaxation) to an old stimulus (the sight of dogs), and it is assumed that the acquisition of both the original fear and the new relaxation has been as automatic and lawful a response to engineered environmental conditions as what went on in Pavlov's laboratory. The behavior modifier is merely the specialist who has acquired a detailed knowledge of these "laws of behavior" and is fairly reliably able to analyze and change behavior as a result of their application.

Many behaviorists are fond of pointing out that the success rate of such treatment procedures of neurotic phobias is an impressive 90%, in contrast to the older methods of psychodynamic therapy, whose rate of remission (an embarrassing study in the 1950's records) is no higher than that of untreated neurotics who get well spontaneously.[6] Furthermore, it can all be done with essentially no reference to the patient's personal history, subjective feelings, or internal mental processes such as thinking and choosing: whether these things exist or not, many behaviorists claim that a science of behavior (normal and abnormal) is possible—and desirable—purely on the basis of externally-observed behavioral responses to presently-manipulated environmental stimuli.

Practical applications of research in *operant* conditioning began to attract much attention in the 1960's, when an entire mental hospital ward of apparently hopelessly-regressed patients was turned, as it were, into a gigantic Skinner box situation. Rather than being humored in their bizzare behavior, patients were gently but firmly required to begin approximating socially acceptable activities. For a severely disturbed patient, this might mean something as basic as learning to use the toilet in return for meals. For a less-regressed patient, it might mean spending time reading the newspaper in return for a much desired cigarette or candybar. In both cases, the behavior required is simple and undemanding at first, but gradually more and more is required for the same amount of reinforcement, analogous to the pigeon's being reinforced only once every ten pecks, or only randomly. In this way, the socially-desired behavior, which begins by needing continuous reinforcement to keep it going, eventually becomes such a well-ingrained habit that it needs only occasional reinforcement. (This is undoubtedly the kind of programme in which young Billy, the autistic child described earlier, ended up).

Likewise, the principle of secondary reinforcement was borrowed from the Skinner laboratory: patients who might first of all work only for actual food or other goodies soon learned to work for plastic pokerchips, which could then be turned in for a variety of primary reinforcers ranging from cigarettes to yard

privileges. Again, the results seemed amazing: patients for whom traditional talk-and-insight therapies had long since been abandoned, many of whom had spent years in a zombie-like state on the back wards, were learning how to talk again, how to socialize, and even hold down jobs—simply through judicious manipulation of the present environment, with no appeal made to personal insight, choice, or will-power, and no reference to past personal history.

From experimental work in laboratories and selected institutions, behavior modification programs based on such operant conditioning have now spread to classrooms, kitchens, rehabilitation wards, prisons, churches, reform schools, nursing homes, day-care centers, factories, movie theatres, national parks, community mental health centers, stores—and just about any environment one might care to name. The programs, riding high on their apparent initial successes, are heavily funded by governments at all levels, and staffed by efficiently trained experts in "behaviorese" who often appear confident that, with enough time and latitude, whole cities (perhaps even the world?) could be turned into one gigantic Skinner Box. By the planned use of positive reinforcement, disadvantaged children have learned to read, delinquent boys have begun engaging in productive work, parents have eliminated children's untidiness, factory workers have increased productivity, public facilities have brought littering under control. These are only a few of the areas in which behavior modifiers have found ready consumers for their product, and there is no indication that the buying trend is about to stop.[7]

Let it be pointed out, however, that just as the methodological behaviorist may or may not intrinsically *believe in* the mechanistic, mental process-less model of man after which he patterns his laboratory experiments, so the behavior modifier working in the applied setting does not *have* to regard human beings as total robots in order to practice his trade. Indeed, most behavior modifiers, being primarily oriented towards using whatever method "works" for a given client, usually have no qualms about adapting techniques from psychological traditions other than behaviorism where the problem at hand appears to demand them.[8] Furthermore, many behavior modifiers may not even concern themselves much about the image of man that is presupposed by ontological behaviorism. While such a vagueness of connection between belief and practice may seem strange to most Christians (who presumably labor to make their whole lives consonant with their biblical view of reality), it is by no means an uncommon phenomenon among contemporary North American psychologists, most of whom have been trained to believe that there is *no* intrinsic connection between one's metaphysical world-view and the way one practices science. At any rate, it does not appear to be usual for most contemporary practitioners of behavior modification to adhere very strictly to the mechanistic, historic mental process-less view of man set forth by ontological behaviorism.[9]

B. F. Skinner

However, in a world where traditional belief-systems have largely been abandoned, leaving contemporary man in a spiritual vacuum which cries out to be filled, a

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single articulate and authoritative spokesman for a particular worldview will often have a disproportionately great impact on the thinking and the policy-decisions of his day. Such a person is B. F. Skinner, the chief protagonist for ontological behaviorism and the pioneer of operant conditioning, who has devoted much of his extra-laboratory work life to articulating and defending a strictly behavioristic view of man. In the '40's, he wrote the novel *Walden II*,[10] his portrait view of the behaviorist Utopia in which everyone was naturally and effortlessly good simply because the environment had been successfully designed to reward them for nothing but good behavior. In the early '70's, his *Beyond Freedom and Dignity*[11] stated in even more unequivocal terms what the essence of man must be, given the findings of Skinnerian-type research: If, as Skinner concludes from behaviorist (and especially operant conditioning) research, man can be shown to be totally controlled (apart from a few inborn reflexes) by the reinforcing events of his environment, then human freedom is a myth; indeed, we mistakenly assume that a person has done something "freely" when we have merely failed to discern what environmental pressure "made" him do what he did. Likewise, the "dignity" of man is also mythical: we praise a person for his accomplishments, but again simply because we have not isolated the environmental circumstances or reinforcers to which the real credit is due. To Skinner, it is the lamentable tenacity of these myths of human freedom and dignity which keeps the totally-planned, *Walden II*-type society from becoming a reality. If only we would look to the environment, (rather than to illusory notions of human freedom and accountability) and set it up in such a way that desirable behavior would always be reinforced, and undesirable behavior never reinforced, then we would be well on our way to heaven on earth.

The combined effect of Skinner's behaviorist treatise and the early success of applied behavior modification has been to unloose a burst of Utopian enthusiasm on the part of some, and a storm of criticism on the part of others.[12] Having dealt with the (undeniably solid) research foundations of respondent and operant conditioning and the (undeniably effective) applications of behavior modification to certain types of behavior problems, we will be concerned in the later portions of this paper to deal with some of the criticisms levelled against the whole enterprise. Some of these criticisms are theoretical, others practical, others moral. We will deal not only with some of the more common criticisms submitted by the science and humanities communities at large, but also attempt to comment both on the behaviorist model and these criticisms of it from a Christian perspective.

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[1]For representative collections of articles on the growing use of behavior modification techniques, see Rubin, R.D., Fensterheim, H., Lazarus, A.A. and Franks, C.M. (Eds.) *Advances in Behavior Therapy* (New York: Academic Press, 1971) or Ullman, L. P. and Krasner, L. (Eds.) *Case Studies in Behavior Modification* (New York: Holt, Rinehart and Winston, 1965)

[2]See Meehl, P. *What, Then, Is Man?* (St. Louis: Concordia Publishing House, 1958) Chapter 3, for an elaboration of this term.

[3]See Watson, J. B. "Psychology as the behaviorist views It" *Psychological Review,* 1913, 20, 158-177.

[4]For a comprehensive review of the changing face of behaviorism, see Koch, S. "Epilogue" in *Psychology: A Study of a Science,* Vol. III, pp. 729-788. New York: McGraw-Hill, 1959.

[5]*Ibid.*

[6]Eysenck, H. J. The effects of psychotherapy in H. J. Eysenck (Ed.) *Handbook of Abnormal Psychology.* New York: Basic Books, 1961.

[7]Goodall, K. Shapers at work. *Psychology Today,* 1972, 53ff. *Five years of the Twin Oaks Community.* New York: Wm. R. Morrow, 1973 for examples of very unbehavioristic, humanistic psychology techniques used in a setting which purports to hold to strict ontological behaviorism!

[9]In the case of behaviorism and its adherents, this theory-practice schizophrenia may be a blessing in disguise, since a *consistent adherence* in practice to ontological behaviorism might long since have resulted in the Orwellian, 1984—type of society which many critics of behaviorism fear.

[10]Skinner, B. F. *Walden II.* New York: The MacMillan Company, 1948 (Note: page citations in this article are from the 1968 paperback edition)

[11]Skinner, B. F. *Beyond Freedom and Dignity.* New York: Alfred A. Knopf, Inc., 1971.

[12]See particularly Chomsky, N.: Psychology and Ideology, in *For Reasons of State.* New York: Random House, 1970; Koestler, A. *The Ghost in the Machine.* New York: The MacMillan Company, 1967; Wheeler, H. (Ed.) *Beyond the Punitive Society.* San Francisco: W. H. Freeman and Company, 1973.

Christianity and Culture
I. Conscience and Culture

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Universals of Conscience?

This is a dream, a wish, a hope—that some scholars will help us to understand conscience better by careful, documented, cross-cultural research. What is conscience telling people cross-culturally? Is there Scriptural evidence for a law of conscience as related to—or not related to—the law of Moses?

Three Types of Law

In Romans 2:14-16 (RSV), there seem to be three different law sets, which we will subscript as Law$_1$, Law$_2$, Law$_3$. The first is the law of Moses; the second, the moral law underlying a particular culture; the third, the more basic and more general law, the ultimate law of God which will somehow relate to the universe of different cultures on the judgment day:

When the Gentiles who have not the law (L_1) do by nature (L_2) what the law (L_1) requires, they are a law to themselves (L_2), even though they do not have the law (L_1). They show that what the law (L_3?) requires is written on their hearts, while their conscience (L_2) also bears witness and their conflicting thoughts accuse or perhaps excuse them on that day when, according to my gospel, God judges the secrets of men by Christ Jesus (via L_3, the law of God). (Compare the translation from *The Living Bible:* "He will punish the heathen when they sin, even though they never had God's written laws (L_1), for down in their hearts they know right from wrong (L_2). God's laws (L_3) are written within them . . .")

Two major implications are here: (a) There is a universality to moral law, which is panhuman, *genetically* transmitted, not relative to a culture, and not isomorphic with the Mosaic code. That is, there is some universality to conscience. (b) There is an area of God's ultimate requirements upon man which leaves room in His judgment for some diversity in the individual's responsibility toward God's ultimate moral wish for man. Thus there is variability within rigidity; there is an area of God-allowed flexibility in the outworking of God's deeper absolutes. This variability is in part a function of knowledge or conscience-sensitivity which is *culturally* carried beyond the Fall by common grace.

The universal may be distorted, but not lost, by the Fall. There is still a common core of uniformity, perhaps not easy to find in every culture. There is always in every culture some empirically detectable restraint against killing. (There are some friends you are not supposed to kill—maybe you are supposed to kill your enemy.) There is at least some minimum kind of incest which is considered wrong. There is objection to some kind of appropriation of another's goods (perhaps your favorite spear, or the hunting dog by which you might eat or go hungry). And in *no* culture known to me is there a total reversal of moral criteria, such that the total good of the one is the total bad of the other. (For individuals, however, there seems to be the possibility of at least partial reversal: "Woe to those who call evil good and good evil," Isa. 5:20; and the one who says of Christ that "He has an unclean spirit" "never has forgiveness"—with self-destruction of conscience, and blasphemy against the Holy Spirit perhaps being equated here, Mark 3:30,29.)

I do not believe that this universality is the result of *mere* cultural spread. (I could not, of course, prove it.) But on the other hand, differences do occur in detail. In spite of these differences seen in culture, there is (as I understand Paul) some eternal validity in the common core of conscience-sensitivity. By it men may stand; by it they may fall; by it they may be judged; through it they may be lost; through it we see that they are twisted, and that *before* Christ came, they needed Christ. Christ came to seek and to save those who already had a valid law of conscience but who did not live up to what they knew, who had light but were unable to follow it, who needed help to meet their own ideals.

In Luke 12:47-48 our Lord tells us that that servant who knew his master's will but did not make ready or act according to his will would receive a severe beating, whereas he who did not know and did what deserved a beating would receive a light beating. Everyone to whom much is given, of him much will be required. And from Matthew 11:21-24, we learn that it will be more tolerable for Sodom and Gomorrah with their homosexuality than it will be for the first century academic rejectors of the Christ who met Him in person.

Anger as Calibrating Conscience

What kind of research program could help us to understand, support, modify, or reject such notions as (a) and (b) above? The cue may be found in Matthew 7:1-2 from the words of our Lord: If you judge, be ready for the same criteria to be used against you. Here our Lord is trying to teach me that when I get

In no culture known to me is there a total reversal of moral criteria, such that the total good of the one is the total bad of the other.

angry at somebody, it is dangerous for me. Why? Because if I get angry with my brother, and I say something, it gets on a "tape recording." Then at the judgment seat in heaven, when I say that I didn't know any better, the tape recording will replay my voice shouting in anger to someone: "You are bad, you did this." Then God may legitimately say: "How can you say that you did not know that it was bad, in view of the fact that you scolded your brother for doing it?" *My anger at someone else calibrates my conscience*, and every idle, angry word I speak calibrates what is inside my conscience knowledge. When I do what I have accused somebody else of doing as wrong, I have no excuse. So it is a literal truth that by the judgment I mete out, God will judge me—as in Romans 2:1-2 we are without excuse if we condemn another but do the very same thing ourselves. And in Matthew 5:22 we hear that if we are angry with our brother, if we insult our brother, we are liable to hell. What an extraordinary statement from the lips of Christ!—but rational, sensible, and intellectual. When I am contemptuous of my brother—"You fool!"—I *calibrate* (or document) *my evaluation criteria*.

There are, then, universals of getting angry or contemptuous, which in principle are present around the world but are in detail variable, but we have no classical study of it by Christian or by secular sources. (At least when I asked a retired professor of cultural anthropology a short time ago, he told me there was none. I do not know the literature well enough to guarantee that myself.) So I am urging my colleagues abroad to keep a diary, recording when somebody gets angry so that at some future time these general comments may be refined.

These culturally-identified laws (L_2) are related to but vary from the law of Moses. Why, then, did they need Moses? To discern universals of good and evil more sharply within one setting of specifics. But there was more in Moses than just this. There was a *way out* of this twist, by animal sacrifice, looking forward to Christ. And there was more detail to help define our "neighbor." This is sometimes difficult. For example, several years ago, the man who (if I didn't misunderstand him) had been in recent years in charge of studying scores of miles of Chicago waterfront to see how to prevent pollution, called a meeting of some Christians to try to get them interested in the problem of the pollution of their environment. He failed and was very disturbed about this fact. Finally I asked why he did not request his pastor to preach on Deut. 23:13. The pastor there asked me to do so instead. The congregation listened when I read the text for the sermon of the morning:

> You shall have a place outside the camp and you shall go out to it; and you shall have a stick with your weapons; and when you sit down outside, you shall dig a hole with it, and turn back and cover up your excrement.

Because the Lord your God walks in the midst of your camp, to save you and to give up your enemies before you, therefore your camp must be holy that He may not see anything indecent among you, and turn away from you.

I have seldom heard salvation and sewage preached just that way. But I've been places where I wished that this law of Moses had been incorporated into the culture.

The Jewish culture needed to learn from Jesus that the new commandment was for love and courtesy to an enemy. Our conscience must be *taught* that we should love those who hate us, and that the God who sends rain on the just and unjust requires this for our good as well as for the good of our enemies. Otherwise, if every time anybody does something to me which is bad, I return something bad, eventually evil "calls my tune"—I react automatically with evil to evil. But the only possible freedom in all the universe is to be immersed within the character of God, where action is free from such contextual triggers.

An autobiography by Tariri, an intelligent man though illiterate, will illustrate some of this problem. (He was asked questions and answered them on tape. I know him, and I studied his language with him.) He was a headhunter and had killed some twenty people. He tells us how he learned to shrink and cure heads. (You have to cut them off nice and neat down by the shoulders, they taught him—you don't cut them up under the jaw!) But why should he make war on the Candoshi, he asked himself—they were his own flesh and blood. Note the implicit recognition of responsibility and conscience. But the reply: If you are like that, you will become a great chief—with the moral conflict between knowing it is not good, and the normal fallen Gentile desire to want to rule it over everybody else and be greatest by dominating. He lost the battle, as we so often do. He added that his friends were afraid, when they saw a head hanging around someone's neck as an ornament, that this might happen to them some day—or that they might learn that their son's head had thus been taken by the enemy. This, he said, was very sad and some day one like this would have to go and get his son's head back.

The moral: Here is a man who knows that it is wrong to take heads, but does it for power (as we do things for power), and at the same time feels sadness (or thirst for vengeance) when he sees the same happen to his own son, or wonders if it will.

We have seen that anger helps to calibrate conscience —conscience by which men will be judged. And we have seen that this differs partly, but never totally, from culture to culture.

We have spoken only of anger and conscience—but note Paul's insistence that consciences may differ, and should be honored, in relation to eating food offered to idols (I Cor. 8:7-13); and note especially that this in part abrogates the judgment of the church council (Acts 15:29) which reported that it had seemed good to the Holy Spirit and to the church there, in relation to the cultural context of synagogues where Moses was read (Acts 15:21). This is an astonishing reversal, under a cultural relation to absolutes. Similarly, Paul acted "under the law" (L_1) to win people in that context (I Cor. 9:20); but "outside the law" (L_1 replaced by L_2), but not without "law toward God" (L_3), i.e.

under the "law of Christ" (presumably L_3).

The Model of *Etics* and *Emics* in Cultural Analysis

Now we ask: What kind of academic model will help us, in part at least, to understand this difficult relation between a continuing universal of God's moral law, and evidence of culturally variable patterns of conscience which God states that in some way He honors?

We have such a model in linguistics. I refer to the generalized form of *etics and emics* (terms which I coined some time ago by shortening the more specific terms *phonetics* and *phonemics*[1]). It specifies how things which are "different" from an absolute point of view are usefully treated as the "same," from a different cultural point of view which takes into account purpose and functional equivalence or meaning.

What kind of model will help us to understand the difficult relation between a continuing universal of God's moral law, and evidence of culturally variable patterns of conscience which God states that in some way He honors?

I first met this problem when trying to learn a few words of Chinese. I remember the experience vividly but have forgotten the particular words. Although I later specialized on phonetics for a number of years, at that time I could not hear the difference between words which contrasted only by the presence or absence of a small puff of air ("aspiration") after *p*, *t*, or *k*. (The words are said to be phonemically different, as are— for English—*tie* and *die* which differ by the presence in *d* and absence in *t* of vocal cord vibration). Yet I had been trained by my culture (by my language in this instance, as part of my culture), to ignore (not to "hear") such a puff; the two *p* sounds in *paper*, in English, differ by such an aspiration (the first has it, the second does not). But pairs of words in Chinese differ in meaning solely because of this puff sound. English speakers are trained by their culture to treat the two *p* sounds as systematically "alike" for purposes of word recognition or differentiation; the two are said to be *(phon)etically different* but *(phon)emically same*. In training linguistic students to be prepared to study languages alien to them, phonetic training must be given them to prepare them to hear many sounds which in a similar way occur in their own languages, (phon)- etically, but without them being at all aware of that fact.

Note, however, that two languages which differ in such ways—by different (phon)emic arrangements of sounds into systems of sounds significant to those systems—nevertheless *can translate messages* from one to the other, in spite of these apparent (and, for the beginner, in fact serious) obstacles. Somehow, the deeper fact of *message*, or meaning, can transcend the *carrier particles* of those messages. If this were not true, all communication would cease across impassable language barriers. As it is, one only has to become all things to

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all men, under the constraints of the emic—structural—systems of a particular language, to pass on the message he comes with, from outside that system.

There are in some sense several kinds of language universals: (a) the fact that every language uses consonants, for example, even though the specific list or etic detail may differ; (b) the fact that messages of significance or interest to members of a culture occur in every culture; (c) the fact that such messages are in general translatable, with approximately equal impact or meaning (subject to delay in the developing or in the process of borrowing words or descriptive phrases for items or experiences which have not been known in the borrowing culture, and subject to some limits which block translation of puns, or of rhyme, or similar kinds of forms).

The same principles seen through emic sounds, with their etic variants, are relevant to all phases of purposive culture. It is emically relevant in the U.S.A. for example, to drive on the right hand side of the road—in contrast to illegality on the left; but in Britain the emic system is different—driving on the left is appropriate. (And in both there is etic variability: e.g. in the U.S.A. one may wander gently within the right hand lane, not too wildly, lest one be thought of as drunk (this is etic variability, not emic contrast); in Britain, the same applies to the left.) Note, however, that this emic but surface difference leaves untouched the underlying *universal moral issue*: one must drive—or act in other circumstances—so as not to endanger his neighbor unnecessarily. This is relative to the culture, insofar as driving on right or left is concerned. That is, the *moral principles—moral meanings, the constraints of conscience—are translatable into different cultural patterns just as language messages are.* And the stake at judgment day, the universal condemnation for carelessness in taking a life, would clearly be administered relative to the local culturally-determined emic system of left or right.

Here we see in terms of everyday life how two cultural systems can differ, yet both be treated with respect by God as being emically *viable* sources of, or patterns for conscience. We may find that difficult to follow—even as I find it difficult to drive in a culture where the left is the "right" place to drive; it takes will, and concentration, lest former habits move one into the (there) morally-wrong-via-formal-error pattern.

Moral principles are translatable into different cultural patterns just as language messages are.

On the Emics of Comfort

Yet in such an instance it is important for us to ask: "Who is my neighbor—and how does he want me to treat him emically?" I have seen a visiting Mixtec boy of Mexico give his grandfather an elegant present—a dish of toasted grasshoppers, treating his relative as he would want to be treated. One sees easily in such

circumstances that that which is valued in the visited culture is not necessarily that which is valued in one's home town. Here the universal of neighborliness is unchanged. Its implementation differs according to the local emic form.

Once this point has been reached, other very deep problems are at stake. Such a question is: How can I give comfort to those who are in pain and sadness? At the tomb of Lazarus Jesus wept—in the culturally appropriate way to communicate the universal of being deeply moved in spirit—and it was "read" properly by those who saw in that way how deeply Jesus loved him (John 11:33-35). And Paul to the weak became as one weak (I Cor. 9:22). We need emic adaptation to a culture if we wish to give comfort in a way that can be understood—and the understanding of messages comes through more emic channels than just those of language.

We are in need of careful anthropological studies of the techniques used in different cultural areas for *showing* comfort—and help in learning to use them. (Personally, I find it awkward, as representing a generation of undemonstrative New Englanders, to let the present mid-westerners read my feelings; even my daughter has been startled to see me meet my sister, with whom I have for many years had the closest, deep personal and professional fellowship at home and abroad—and shake hands! No kissing for us.) And then, in the pattern of Christ, we need to translate our feelings into visible, emically readable patterns of behavior.

On the Emics of Persuasion

Here, then, is the opposite of anger, an emic contrast: the giving of comfort. But other emic differences between cultures occur, which are also of great importance to us, if we wish to communicate with persons elsewhere. One of them, I found to my surprise, is that there are differences in the techniques of persuasion. We take it for granted—we are emically conditioned to our own system—that when we are persuasive to our colleagues at home we should by the same approach be persuasive to peoples of any other culture. Unfortunately for our peace of mind, this often fails, and we find ourselves ineffective. For example, colleagues of the Summer Institute of Linguistics in the Philippines found that in certain preliterate animistic tribal groups—neither Christian nor Islamic nor Hindu—the people were exceptionally powerful arguers in philosophy. They considered our people to be inept and unpersuasive. One of our anthropologists suggested that a fifteen minute presentation of a topic, followed by a two hour discussion group, would be more persuasive than a longer lecture—and would come closer to their own all-night discussion sessions.

We are already indirectly acquainted with different types of persuasion, but have seldom, if ever, focused on them directly. Ezra and Nehemiah both faced a certain kind of problem, members of their community marrying people who did not join in serving God with them. When Ezra faced this problem, his approach was that of the self-humiliating leader who aroused sympathy and thus obedience: "When I heard this, I rent my garments and my mantle, and pulled hair from my head and beard, and sat appalled . . . humbled . . .

ashamed . . ." (Ezra 9:3, 10:1-17). It worked. But Nehemiah used a different emic style (with the same absolute moral demand underlying it): "And I contended with them and cursed them and beat some of them and pulled out their hair; and I made them take an oath . . . I chased them from me . . . Thus I cleansed them" (Nehemiah 13:25-30). This emic style also worked.

The argument types in the gospel of John are remarkably varied: In Chapter 1, by the testimony of John, Chapter 2, by signs—the wine; Chapter 3, eye-witness ('We have seen'); Chapter 4, personal experience; Chapter 5, evidence of the works of the Father; and so on.

Paul, too, used different persuasive styles for different audiences: in Acts 15:4, a report declaring all God had done; in 15:38, pragmatic argument about Mark; in 17:2, argument from the Scriptures; in 17:22-23, argument from a cultural component of reference to an unknown God; in 17:28, quotation from their own scholars or poets; in 22:2, the social pressure of the use of the native language, Hebrew, carrying a biographical report; and, in the epistles, commendation versus scolding, versus didactic instruction. All of these were emically different, but useful.

We must be ready to use whatever tools are culturally appropriate to carry the universal absolute message. And such tools include the concomitant necessity of being scholars as servants, not rulers; with emically visible compassion, not inner upset or anger by which we would now sow, and from which we would eventually reap.

A Postscript on Conscience

A statement in the July 25, 1977 issue of *Time* about the New York power blackout with its accompanying looting gives clear evidence that newsmen have known for a long time this principle of responsibility evidenced by voiced complaint: "A teen-age girl on Manhattan's upper West Side complained to friends that some boys had offered to help carry away clothes and radios [stolen by her], then had stolen them from her. Said she, with the skewed logic of the looters: 'That's just not right. They shouldn't have done that.'"

An instance from the academic field has also just come to my attention: In *Language, Journal of the Linguistic Society of America* (53:406-11, June 1977), Georgia M. Green of the University of Illinois in a review is strongly protesting a book written by Ian Robinson which severely attacks Chomsky and his band of followers who have dominated the linguistic scene for almost two decades. After an initial quote from Robinson (who says "that Chomsky has attained the goal of complete uselessness") Green complains in her opening sentence: "Who is Ian Robinson, and why is he saying these terrible things about us?" But a few lines later she herself says of Robinson's book: "If you are a professional linguist, you will be annoyed, appalled, amazed, and disgusted, but unlikely to stomach reading past p. 25." Being a member of academe is no shield against motes and beams. Education, professorships, and publishing are not the antidote to the fall. Some deeper re-structuring is needed by all of us mortals.

REFERENCE

[1]Kenneth L. Pike. 1967. *Language in Relation to a Unified Theory of the Structure of Human Behavior*, 2nd edition. The Hague: Mouton.

What became of Einstein's brain? . . . it had been removed for study by Thomas S. Harvey, the pathologist at the Princeton Hospital where Einstein died (April 18, 1955). . . . Harvey had had most of the brain sectioned and distributed to various specialists. Nothing has yet been published about their findings . . . because there is still more work to be done. . . . At the death of Friedrich Gauss, one of the greatest mathematicians in history, his brain was bequeathed to a Dr. Rudolph Wagner, who undertook to compare it in weight, depth of fissures, and pattern of cerebral convolutions, with the brain of an "ordinary" day laborer. The brains of Gauss and the laborer turned out to be identical in all respects. Even with contemporary methods, it would be more surprising than otherwise if the nature of Einstein's genius could be divined from dead tissue. "So far it's fallen within normal limits for a man his age," Harvey told the New Jersey Monthly *of the savant's gray matter. Like his last words, the physical basis of Einstein's mind has eluded understanding.*

Nicholas Wade

"Brain That Rocked Physics Rests in Cider Box," *Science* 201, p. 696, August 1978.

Bible Translation and Linguistics

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The purpose of this article is to acquaint readers with the field of linguistics, particularly as it relates to Bible translation.[1] The paper sketches the historical background of Bible translation as a general context into which the description of linguistics fits. The Summer Institute of Linguistics, Inc. (SIL), the largest training organization for linguistics in the world, is described in some detail.

Brief History of Bible Translation[2]

Bible translation has its origins in the antiquity of the Jewish people whose literature is generally said to date from late in the second millenium B.C. after the conquest of Canaan. The Old Testament was written mainly in Hebrew but there are also portions in Imperial Aramaic and a few words in Persian and Egyptian.

Although writing had been developed by the Sumerians more than a millenium earlier, and although bilingual education in Sumerian and Akkadian had existed during the second millenium (Wiseman 1970, 30), it seems likely that these advances had little direct influence upon the ancestors of the Jewish people. Writing served primarily to record the affairs of state, the exploits of rulers, legal matters, business, and the esoterica of religion. Such writing was confined largely to the centers of power and there were few literates among the interior people apart from formally trained scribes who handled diplomatic correspondence. The language of diplomacy was an Akkadian *lingua franca* that stretched from Mesopotamia through Palestine, and the Canaanite scribes who wrote the Amarna letters

(14th cent. B.C.) reflected their own dialect in their use of it (Moran 1961, 54).

The biblical narrative of Jewish history begins with the patriarchs Abraham, Isaac and Jacob whose language has been regarded as a dialect of Old Aramaic (Black 1970, 1). It is also known as Amorite or East Canaanite (Bauer 1926, Landsberger 1954). Albright regards it as one of five distinct dialects, not identical with (South-) Canaanite nor proto-Aramaic (Moran 1961, 57). Moscati (1964, 4) cites its status as being controversial. Although the linguistic data are subject to varying interpretations, it is generally agreed that there were numerous dialects spoken in the fertile crescent and that the dialect of the patriarchs and their descendants was distinct from those of the inhabitants of Canaan. The linguistic relationships as proposed by Moscati (1964) for the Semitic family are shown in Table A.

Black (1970, 4) states that

> the relationship between the members of this widely diffused family, each with its own distinctive features, is much the same as that within the Germanic group of languages, German, Norse, Danish, Swedish, etc., or the Slavonic group, Lithuanian, Russian, Polish, Serbian, etc.

To this comparison one could add the Romance languages (Moscati 1964, 16).

It is well known that the fertile crescent has always been the scene of population movements and economic and military struggle. In the days of the patriarchs such struggles were between small nomadic groups, and the

Table A
The Semitic Languages

North-East group (Mesopotamia)	Uncertain	North-West group (Syria & Palestine)	South-West group (Arabia & Ethiopia)
Akkadian (Assyrian dialect) (Babylonian dialect)	Amorite Ugaritic	Canaanite Hebrew Phoenician and Punic Moabite Aramaic (various dialects)	Arabic Ethiopic

patriarchs and their descendants until Joshua (ca. 1800-1350 B.C.) have been frequently identified with the Apiru (Habiru) people from which comes the word "Hebrew." Anati (1963, 390) states that the Apiru were bands of people with a way of life similar to that of the patriarchs and that they existed in Palestine throughout the Canaanite period and ultimately took an active part in the conquest of Canaan under Moses and Joshua. Most scholars believe that the Jacobian migration to Egypt involved only a portion of the patriarchial community and that the descendants of those who remained (the Apiru?) joined forces with their invading relatives led by Moses.

The nomadic nature of the Canaanites resulted in a high degree of culture contact so that by the time of Moses the Canaanites were familiar with at least eight languages recorded in five completely different writing systems (Mendenhall 1961, 50, n.23). These close linguistic relationships and contrasts of the various groups plus the presence of the Apiru undoubtedly enhanced the assimilation of the invaders who very quickly adopted the Canaanite language and alphabet, the latter giving rise to the devlopment of the Early Hebrew alphabet about 1000 B.C. (Diringer 1970, 13).

Moses, who is considered to have written the Pentateuch, received his education at the Egyptian court (cf. Acts 7:22) and is believed to have appointed officials to keep records during the exodus. The writer-compiler of the Pentateuch may have had sources from a number of languages, but the only non-Hebrew words in current manuscripts are Leban's Aramaic equivalent *Jegarsahadutha* for Jacob's Hebrew *Galeed* (Gen. 31: 47), the Egyptian form of Joseph's name (Gen. 41:43), and an Egyptian exclamation (Gen. 41:45). Anati (1963, 389) states that Moses and other names in Leviticus are of Egyptian origin.

Just what sources the writer of the Pentateuch drew from is an open question, and various hypotheses reflect the conjecturer's presuppositions. Conservative scholars would attribute a greater portion to original composition than their less conservative colleagues, of whom some would go so far as to say that portions of the Pentateuch are translations of borrowed literature. For example, Kaiser (1975, 26-7) suggests that as the Jews assimilated to the Canaanite way of life they also entered into the area of major international literature. The chief example is the popular flood epic which is found in the fragmentary Sumerian *Atrahasis* epic and in the Akkadian *Gilgamesh* epic. Fragments have also

been found in a Hittite translation. A cuneiform fragment of the *Gilgamesh* epic dating from the 14th Cent. B.C. found at Megiddo led Kaiser to conclude that the Canaanites were the intermediaries leading to the biblical accounts. Accordingly, some can then assert that portions of the Pentateuch are translations (but see Ackroyd's (1970, 71) more cautious appraisal). Until recent discoveries proved the antiquity of the Early Hebrew alphabet, many scholars accepted the arguments that cuneiform was used until 700 B.C. and one, A. Cowley, suggested a theory that Ezra (about 400 B.C.) "translated the cuneiform documents into Hebrew, and wrote the results down in simple Aramaic characters" (Diringer 1970, 12).

Bible translation has occurred in the context of culture contact, often resulting either from people undergoing linguistic assimilation who desire to maintain a basis for their historic faith, or from the attempts of a dominant or victorious people to convert their alien subjects. Neither of these situations arose until after the Assyrian victory over Samaria in 722 B.C. when large numbers of Samaritans were exiled and replaced by people from Babylon and other areas. The nature of the mixed population led to a translation of the Pentateuch into the Samaritan dialect.

When the southern kingdom fell to the Babylonians in 596 B.C., the nobles and wealthy people were taken to Babylon where many, such as Daniel, were educated in Aramaic (the biblical 'Chaldean') for three years. Others fled to Egypt.

As a result of the Babylonian experience many Jews acquired the *lingua franca* Aramaic as a second language. Translation must have been a regular practice; Esther 1:22, 3:12 and 8:9 record that the edicts of King Ahasuerus were translated into every language, the last reference applying to 127 provinces from India to Ethiopia plus the language of the Jews. Moreover, the O.T. books composed during this period are those that reflect the acceptance of Aramaic; Daniel 2:4-7:28, Ezra 4:8—6:18, 7:12-26, and Jeremiah 10-11 are written in Aramaic, and Daniel 5:25-28 contains Persian words.

The demand for an Aramaic translation probably arose during this exilic period or the Persian period following it, for by the 3rd century B.C. Aramaic had replaced Hebrew. Translation into Aramaic culminated in the *Targums*. Those which adhered to the Massoretic text were official and claimed prestige whereas those which were free and paraphrastic were unofficial.

The Jews that fled to Egypt ultimately established their community at Alexandria. As a result of the Hellenic influence, the Alexandrian community produced the Greek Septuagint O.T. which was the first attempt to tranlate the O.T. into a non-Semitic language. There were numerous translators working from texts based upon both Early Hebrew and Aramaic. Generally scholars have focused their attention on the translation with a view to determining the veracity of the readings in the Massoretic text rather than judging the qualitiy of the translation, although that of Isaiah has been regarded as quite inferior.

The next impetus for translation came in the Roman period following the destruction of Jerusalem in 70 A.D., the resulting dispersion, and the spread of the Christian message. As a result of the Christian interest in the Septuagint there appeared a number of minor Greek versions, of which many were attempts to harmonize the Greek text to that of the Hebrew. Acquila's in 128, "was of the most slavish character, rendering the Hebrew word for word without regard for the exigencies of the Greek language" (Sutcliffe 1969, 99). Also literalism characterizes the versions of Theodotion (100-33) and Symmachus (174). Origin's *Hexapla* (c. 240) added confusion to the search for the original Greek version, and there was such a proliferation of "vulgar" texts that scholars now speak of "text families".

This textual confusion led to a focus upon reconstructing the precise wording of the putative original text. In time the text was considered to be so sacred that even the word order was thought to be of divine origin, and many translations were judged to be faithful to the degree that they conformed to the word order of the original language.

As Christianity spread out from the Eastern Mediterranean more major translations were completed. Tatian (160-180) produced the Syriac *Diatessaron,* the life of Christ based upon a harmony of the four Gospels. Other translations include the Old Syriac (c. 200), the Syriac Peshitta (c. 300), Philoxenian (508), Harklean (616), and Palestinian Syriac (300-500). Latin versions include the Old Latin (200) used in north Africa and the Vulgate of Jerome (405). Coptic versions were the Sahidic (350) and Bohairic (650). Other versions such as the Ethiopic, Nubian, Arabic, Sogdian, Armenian, Georgian, Slavonic, and Persian have been based upon relatively late Greek texts or other translations. Most were markedly literal such as Ulfilas' (350-380) Gothic translation which is said to have followed "a system of imitation which in his time was imposed by respect for the sacred text" (Hunter 1969, 343).

The single bright star during this period is Jerome who was a scholar of Latin, Greek and Hebrew, spoke Syriac fluently and knew Aramaic and Arabic to lesser degrees. He was well aware of the problems of translation and formulated his own principles to lead to a translation of sense to sense, not word to word (cf. Sparks 1970, 519-26). His *Vulgate,* completed in 405 but not accepted by the Church until the eighth century became the key to a correct interpretation of the faith after Latin passed out of use, and the hierarchy set up indices which prohibited any vernacular translations on the fear that they would undermine their authority. Consequently in Italy, Spain and France translation was done apart from the Church, usually

by the Reformers. Ultimately in the eastern European countries, the Church reluctantly issued authorized translations based upon the Vulgate. As a result the Vulgate which Jerome translated so as to express sense for sense became the basis for more literal and sometimes incomprehensible translations.

There were so many bad translations in Europe during this time that the few good translations came to be revered. Such was Luther's Bible which became the basis for translation into neighboring languages such as Swedish and Danish. Other versions in use for considerable periods were the Dutch version of 1637, the English of 1611, and the Czech Kralice Bible. Such is the conservatism which has affected Bible translation.

The Impact of Linguistics Upon Bible Translation

Waterman (1963, 2) attributes the beginnings of linguistic investigations to the Greeks and the Indians, the former being characterized as those who speculated about language and developed philosophical grammar, and the latter as those who described language in detail both in grammar and in phonology. The Indians, beginning with Panini in the fourth century B.C., concentrated on describing Vedic Sanskrit and clarifying the Vedic hymns. The later influence of these descriptions on European linguistics was in the area of morphological analysis and guiding principles for the comparatists (see Rocher, 1975).

The European form of traditional grammar, however, is more indebted to the Greeks. Aristotle distinguished parts of speech and the Stoics carried on Aristotle's study of case relationships. With the exception of two works about Latin, the Greeks did not apply their method of linguistic description to the scores of languages spoken by their neighbors and by those under their suzerainty. Rather it was the Romans who passed on to Europe the grammatical model, in particular Priscian's Latin grammar which was used during the Middle Ages.

The growth of interest in languages and linguistic description was directly the result of the missionary efforts of the Christian church. As the Bible was translated into the vernaculars, accompanying glossaries were prepared. With the invention of printing, lists of vocabulary were distributed and scholars began to recognize language similarities. At this stage Bible translation was feeding a growing interest among scholars in language study.

The interests of these early linguists reflected the spirit of the age. As biblical scholars were obsessed with determining the most probable readings of a putative original text, so were linguists consumed with an interest in defining the newly recognized relationships of the European languages and reconstructing a protolanguage. This interest in historical linguistics persisted into the twentieth century, and linguists said little that was relevant to the issue raised by the rapidly expanding program of Bible translation.

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The main influence of the scholastic world was the allegiance given to the Latin grammatical model in the description of exotic, i.e. non-European, languages. In effect this led the analysts to impose the familiar categories of the European languages upon languages quite alien in both grammatical and semantic sructure. The impact of this model persists today so that some missionaries still follow it although most linguists abandoned it decades ago.

The first really productive influence of linguistics upon Bible translation came as the result of the development of modern structural linguistics. In effect it freed the missionaries and other analysts from the classical model. It was now the responsibility of the analyst to discover the categories relevant to the grammatical and phonological systems of the language being investigated and to describe its structure.

Insights in the areas of grammatical and phonological analysis were soon followed by insights into semantic analysis. The distinctive features of phonological analysis were said to be paralleled by semantic features in semantic analysis. Anthropologists soon began to analyze semantic fields such as kinship systems, color categories, and flora. The goal of this type of analysis was to arrive at an emic understanding, i.e. an understanding of the cognitive order which the vernacular speaker imposed upon his world through his language. From these beginnings developed the field of cognitive anthropology with its emphasis on ethnostudies such as ethnoscience, ethnobotany, etc.

What this did for Bible translation was to make clear the methodology that good Bible translators had unconsciously used throughout history. It gave the translators the basis for an explicit science of translation.

Early Textbooks

In general the methodology of modern linguistics as applied to Bible translation can be traced directly to the early textbooks of Nida (1947 and 1949) and Pike (1947 in particular). Just as these two men received their linguistic structuralism from men such as Sapir (1921), Bloomfield (1933), and Fries (for example, 1952), so thousands of missionary linguists and translators have been influenced over the past four decades by Nida and Pike.

Several of Pike's and Nida's students have become noted linguists (for example see the works of Grimes 1975, Longacre 1976 and Wonderly 1968) and have continued to teach and conduct field seminars for Bible translators. Pike's general theory of language and society (1967) has not received a wide linguistic audience, but his pedagogical materials continue to be used widely, including the most recent textbook which was written jointly with his wife (Pike and Pike 1977). Recently, Brend has edited a number of Pike's works as well as some major efforts of his students and colleagues (Brend 1972, 1974, 1975).[3]

It is interesting to note that despite these early foundations in structural linguistics, there were also restrictions. Just as the so-called Latin model caused earlier students of the language to adjust their grammars accordingly, the structuralist model caused later students of language to view non-grammatical meaning cautiously. Although Nida, as we mentioned earlier, has long been a student and scholar in semantics, he has

not been an original theoretician. It took transformational grammar (Chomsky 1957) to outline formally the serious limitations of structural grammars based on the analysis of constituent structure. Without the polemics and prodding of later transformational scholars it is doubtful that today's teachers of Bible translation and basic linguistic methodology would have developed their present interest in semantics. Bible translation would be the poorer because key concepts on kernel sentences (Nida 1964:59-62), underlying or deep structure with a generative device for analyzing the process of decoding source text, are based on the work of Chomsky and his followers.

On the other hand good Bible translators and students of the exotic languages have always been good anthropologists. The first courses of the S.I.L. included topics on Latin American and Indian cultures (see the Hefleys 1974). There have been excellent publications dealing with topics related to Christianity across cultures (for example the Journals *Practical Anthropology* (1954-72), *Missiology* (1973 to date) and books such as Mayers 1974 and Nida 1960). Enlightened missionaries have always been conscious of their impact on other cultures.

One final area of contribution by linguists and Bible translators should be mentioned: that of language learning. All SIL linguists and many missionaries must learn languages that do not yet have alphabets, grammars, or dictionaries. The frustration of such language learning has led to a series of excellent helps specifically designed for learning a foreign language. One of the earliest and best was by Nida (1957), followed by other books more specific in purpose. Gudschinsky (1967) aids those learning a language to pronounce it correctly; Larson and Smalley (1972) provide a complete learning program; Healey (1975) gives a day-by-day field manual with programmed elicitation and numerous practical details; the Brewsters (1976) provide a simple text which gets the learner quickly and successfully into a daily schedule. Each of these books is built squarely on a linguistic foundation, demonstrating again the close link between areas of Bible translation and language study.

Although some linguists have been displeased with the relationship between missionary work (Bible translation) and linguistics,[4] others have praised the contribution of missionary linguists.[5] In 1955 Professor Kenneth L. Pike, president of the SIL, began field workshops. Pike began to train counsultants on a world-wide scale, visiting virtually every country where SIL worked. On the basis of the consultant training program SIL members were encouraged to study for advanced degrees, returning to staff summer schools and field workshops and adding an academic dimension that has influenced the whole organization.[6]

Decisions of a Bible Translator

Any Bible translator who is also a linguist will soon be confronted with several aspects of the work that require a decision: (1) his view of language; (2) the importance of the vernacular or mother-tongue; (3) what type of translation he is aiming for and how this can be checked; (4) the social dimensions of language and translation use; (5) his view of the Scriptures.

Bible translators should have a high regard for lan-

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guage. God expressed himself in a natural, idiomatic language, and his revelation to us in the accepted canon of the New Testament was in Koine Greek, a dialect which developed from the common circles of society and served as a *lingua franca*. This was in contrast to the then current prestige dialects of classical literature.

It follows that God did not intend his message to assume the status of a literary artifact, retaining all of the obsolete (but often sacrosanct) pronunciations inflections, lexical inventory, and word order of an ancient language. The translator views N.T. Greek exactly as any other language: it has a structure particular to the Greek of that period, and the linguistic methodology involved in the study of its structure is in general no different from that in studying, let us say, Kewa of Papua New Guinea.[7]

From the late 50's the linguist N. Chomsky has had a profound influence on studies on language, linguistics, and the philosophy of language. Chomsky (1968) argued that present day structuralism has grown out of the abandonment of certain important concepts of Cartesian philosophy, in particular the theory of universal principles and rational explanations. This early rationalistic philosophy of language is often most clearly associated with the "doctrine of innate ideas" and contrasts with logical positivism, where man uses words of explanation to somehow adapt to and control the environment. Because the world is seen differently by each person language is not to be trusted. This so-called behavioristic view of language led later to a thesis of linguistic relativity (Whorf 1940), where observers are not led to the same picture of the universe unless they have similar backgrounds. Although many linguists have disagreed with this basic thesis (Longacre 1956), it nevertheless influenced certain early structuralists who, in turn, taught many of our present day peers in Bible translation theory and practice.[8] We are now in a post-Chomskyan era of reassessment with an emphasis on bridge disciplines and in general a less hostile view of language data and the work of Bible translators who are also linguists.

Secondly, a Bible translator as linguist must have the conviction that the vernacular is an extremely important and capable vehicle for God's Word. He observes that God's Word in the vernacular not only makes an impression but that the Holy Spirit activates people through its truths. But people have questions, even on the clearest translation, or even to the most apparently obvious statements. Witness, for example, Thomas' response when Jesus said to his disciples, "You know the way to the place where I am going." In other words, all aspects and ramifications on the translation of the Bible—as on any piece of literature—must be capable of discussion in the very language into which it is translated. Naturally, key words (theological primitives, if you wish) influence the development of the folk theology of a given group. God has given every homogeneous group of people the capacity to communicate in a language particular to that group, linguistically unique. To preserve this homogeneity societies and sub-groups purposefully create dialectal features. Translating the Bible into this particular dialect identifies the Scriptures, and consequently the God which they reveal and exalt, with the society or

Good Bible translators and students of the exotic languages have always been good anthropologists.

sub-group. God is no longer alien; his truths are no longer irrelevant to the problems of the group. In short, God speaks to the group in their language. Unless this obvious fact is held as crucial to a Christian's, and consequently the church's development, Bible translation is seen as peripheral to the so-called main task of evangelism. Linguistics becomes an esoteric tool for those somehow gifted in languages, an interesting hobby but hardly of any interest to the main work of the church.

If the above importance of the vernacular is granted, it should be seen at once that the kind of translation that we give to people is just as important as the fact that they receive one. The controversy surrounding the introduction of *The Living Bible* and earlier translations of parts of the Bible by the same author will bear this out. For various reasons—and Taylor outlines why he began his translations of the Scriptures—this version has been either accepted or rejected like nothing since that of John Wycliffe himself. There are arguments against the paraphrase on the basis of exegesis, choice of English words and idioms, other figurative language, and so on, but it is read and understood by all age groups. Most lay people are at a loss to explain or understand the controversy surrounding *The Living Bible* and resort to the safety of the accepted version of their church or denomination. This illustrates how church society, in particular church leaders, influences the acceptance or rejection of a translation. In the case of preliterate societies without any Scriptures there is no such educated clergy to influence the masses, so the techniques of translation and the methods of checking the translation are of primary importance.[9] If the translation is based squarely on linguistic analysis and methodology it can be checked on the same basis. The whole range of types of translations and related technical matters has been treated extensively by Wonderly (1968). A recent book by Beekman and Callow (1974), with an accompanying manual (Larson 1975) and additional discussions on discourse (K. Callow 1975) are used in coursework at the SIL for instruction on the basics of Bible translation.[10]

Any Bible translator soon realizes that there are important social dimensions influencing the acceptability and use of the translation. For smaller language groups bilingualism is an important consideration. Aspects such as acculturation, prestige dialects, cultural centers of communication and information sharing will determine the potential usage of the translated Scriptures. While these are not purely linguistic, they do enter into an important area of study, that of sociolinguistics. Sociolinguistics is one of the so-called bridge disciplines (like psycho-linguistics, mathematical linguistics, linguistics and logic, computational linguistics, or educational linguistics) and, in part, uses certain established sociological testing procedures to determine linguistic variables and correlate these with class or community values. There are many recent studies in this area, but

for Bible translation, Wonderly (1968) is the best treatment. Applications for Bible translation have included determining attitudes toward languages, often including variables of education, sex, bilingualism, age, and other factors of cultural dynamics.

Finally, we might mention that the view of Scriptures that the translator has will influence his motivation and contribution. The translator's view of the inerrancy of the Scriptures needs to be carefully checked. This is an area in which there is potential disagreement on the part of missionaries involved in the translation and distribution of the Scriptures.

The Future

It is interesting that at a time when the linguistic techniques of Bible translation have become quite specialized, more than ever before the national churches have also become more motivated to participate in the translation task. National Christians feel that it is part of their moral responsibility to provide the Scriptures for fellow citizens. Courses are being offered on a regular basis in many countries and in several languages to provide the methodology. A re-evaluation of just how much linguistics a national translator needs and just what kind it should be is being made in many countries. This process of evaluation and feedback will influence the nature of the courses offered to nationals. But one thing is certain: national translators want to be involved and can do the job equally as well or better than their expatriate counterparts. It remains for linguists to adapt their materials to the needs of these national translators, not focusing on exotic terminology and elaborate taxonomical procedures but, rather, on the basic linguistic principles which underlie Bible translation, semantics, orthographies and the study of language in culture and society. This is the challenge of linguistics for the future.

FOOTNOTES

[1]The historical sketch was written by McElhanon (SIL and the Australian National University) and the outline by Franklin (SIL). We then combined efforts on the revision and synthesis which followed.

[2]Wonderly and Nida (1963) survey the development of language study and Bible translation from the early church through the twentieth century. They relate, in particular, to the influence of linguists on the language work of Christian missions. Also see the 'Introduction' in Nida (1972).

[3]Brend did not include authors such as Merrifield (1967) who have deviated from Pike's theory. For a brief history of the development of Pike's theory see Waterhouse (1974).

[4]For example, Trager (1963, 103). It would be interesting to see Trager's (or other linguists') answers to the questions on language design, God and world view framed by Longacre (1976).

[5]Charles F. Hockett (1955) commented on the valuable language materials gathered by SIL people.

[6]Nida and Pike were the first to complete Ph.D. degrees. Although at the end of 1960 less than 20 SIL members had completed the Ph.D., by the end of 1976 over 100 members had been awarded it. Some 20 of them are no longer with the organization including Nida who in the early 50's joined the American Bible Society. His departure forms an important dimension of the professional interplay between SIL and the Bible Society, as others have suggested (e.g., Hymes and Fought, 1975). Of course, many very capable linguists and translators have no graduate degree, but this is only one method of quantifying any advanced training program. It should be noted that fully 50% of SIL members serve in non-linguistic capacities as educators, pilots,

mechanics, medical personnel, radio technicians, printers, carpenters, etc.

Wares (1974) lists over 4,300 items published by SIL members ranging from simple pre-reading vernacular materials through practical suggestions for applied linguistics to complex theoretical statements.

[7]Although N.T. Greek is no longer spoken, the discourse types, sentence patterns, relationship of elements within clauses, range of wordbuilding rules, and so on, are not unlike those of every language. Wonderly (1968) outlines the rationale and methodology for translating the Bible into the "common" language of the people. He is concerned that the translation be common to speech of both the higher and lower socio-educational levels. His book is clear and extensive and anyone concerned with the socio-linguistic dimensions involved in the types of Bible translations that exist should consult his work.

[8]This is not to imply that translators follow "linguistic relativity." Eugene A. Nida has been most influenced by developments in semantics arising out of the early 60's. See the review of his main studies on semantic structures, language structure and translation, and componential analysis by A. Lehrer (1976).

[9]There are numerous helps available for translators, particularly in the area of the exegesis of the best Greek texts. Other materials include a series of handbooks on particular books of the N.T., (e.g. Bratcher and Nida 1961), as well as commentary compilations, theoretical volumes on translation (Nida 1964; Nida and Taber 1969) published by the United Bible Society, back translations, Notes on Translation, and a textbook (Beekman and Callow 1974) published by the Wycliffe Bible Translators and the Summer Institute of Linguistics.

[10]The first text-oriented book on translation was by Nida (1947) in which he established sets of correspondence between languages. For a historical review of translation in relation to structural linguistics, ethnology, mechanical translation, communication theory, psychology, and the philosophy of language see also the work of Nida (1974). Incidentally, Nida perpetuates a slip when he states (1974: 1050 and elsewhere) that the SIL is "also known as the Wycliffe Bible Translators." The two are separate legal entities: both are incorporated, with different charters of purpose, but overlapping membership. They have different presidents and vice-presidents and usually only SIL is legally and formally recognized in the countries where SIL members work. WBT is the home division entity, responsible for maintaining a relationship with the Christian churches and public.

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Herman Dooyeweerd's Contribution to the Philosophy of the Social Sciences

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Herman Dooyeweerd, the Dutch Christian theorist who died in 1977, made an unusually wide-ranging contribution to the philosophy of the social sciences. His Christian standpoint led him to reflect seriously on the foundations of law, society, economics, and politics. Perhaps his most important contribution to the social sciences was in clarifying the difference between the various "hows" of human social existence—the modes or functional dimensions such as the legal, economic, moral, linguistic, social, etc.—and the actual things that exist ("what" exists) such as states, families, churches, labor unions, industries, friendships, etc.

The crucial requirement for any social science is that it not functionally reduce the life of man to one mode or "how" of existence, and that it give an account of the particular nature of its own modal outlook in relation to other modal sciences as well as of the real social "whats" that it will be examining abstractly from its own particular viewpoint.

With the death of Herman Dooyeweerd on February 12, 1977, the scientific world has lost one of its most distinguished twentieth-century Christian contributors. Dooyeweerd was Professor of the Philosophy of Law at the Free University of Amsterdam, and a Fellow of the Royal Dutch Academy of Sciences. More than fifty years ago he received his doctorate in jurisprudence at that same University which was founded by the noted Christian educator, theologian, journalist, and statesman, the former Prime Minister of the Netherlands, Abraham Kuyper. Before accepting the teaching post at the Free University, Dooyeweerd served as manager of the Abraham Kuyper Foundation at the Hague, a research organization for the Anti-Revolutionary political party that Kuyper had organized, during which time he established the political quarterly, *Anti-Revolutionaire Staatkunde*. In addition to his scholarly labors, Dooyeweerd also held several public posts in the Netherlands.

In the Foreword to his main systematic work, *A New Critique of Theoretical Thought*,[1] Dooyeweerd admitted to the strong influence in his student years of Neo-Kantian philosophy and Husserl's phenomenology. But the strongest influence in his life remained Christianity—the reformed Christianity of Dutch Calvinism. Together with D. H. Th. Vollenhoven, Professor of Philosophy at the Free University, Dooyeweerd inspired a new school of Christian philosophical and social thought. Members of this "school" have held chairs at the Universities of Utrecht, Leiden, and Groningen, the Technical School of Delft, and the School of Economics in Rotterdam; and students of Dooyeweerd and Vollenhoven are professors in several institutions in South Africa as well as in this country at a number of colleges and seminaries. Recently students of this "school" founded the graduate Institute for Christian Studies in Toronto, Ontario, Canada.

The occasion of Dooyeweerd's death is certainly a proper time to consider some of his contributions, and it is the intention of this article to look at one of those contributions that has been little noticed, but which is related to a very lively discussion in the social sciences today, especially as a result of the widespread interest among social scientists in Thomas Kuhn's book, *The Structure of Scientific Revolutions*.[2]

Ethics and Law

While pursuing his study of jurisprudence, Dooyeweerd became more and more convinced that the problem of the relation between ethics and law was the most crucial one for the science of law. The seriousness of this problem, he felt, lay in the fact that the relationship between the "legal" and the "moral" could not be determined solely from the viewpoint of one side or the other without the reduction of the one to the other. This problem led him to reflect critically on the foundations of juridical science, for he became convinced that a "deeper" or "higher" standpoint was necessary from which the relationship between law and ethics (as well as between law and economy, law and aesthetics, law and faith, etc.) could be determined. An understanding of this deeper standpoint, he concluded, was absolutely essential for the preservation of legal science itself, yet by its very character it was a standpoint which had to transcend the special realm or aspect of "law" as such.

Without attempting to elaborate Dooyeweerd's methodical critique or his conclusions,[3] I will simply point out that this search for the foundations of the various special sciences (vakwetenschappen) is what he means by critical philosophy (critische wijsbegeerte). Philosophy is not an independent, metaphysical speculation about ultimate reality which is then brought to bear on the sciences as an "outside" determiner. Rather, each science, by the very nature of its attempt to abstract and isolate a special field, should be driven back to reflect on its own foundations. If a science is to remain critically scientific and not degenerate into the mere repetition of frozen dogma, it must continually ask the question of its own character and of its relation to all other special fields. This critical reflection begins to reveal to any scientist that there are basic suppositions of a totality-character (Dooyeweerd calls them philosophical) which underlie, precede, and make possible the special scientific investigations that are already under way.

> It is impossible to establish a line of demarcation between philosophy and science in order to *emancipate the latter from the former.* Science cannot be isolated in such a way as to give it a completely independent sphere of investigation and any attempt to do so cannot withstand a serious critique. It would make sense to speak of the autonomy of the special sciences, if, and only if, a special science could actually investigate a specific aspect of temporal reality without theoretically considering its coherence with the other aspects. No scientific thought, however, is possible in such isolation "with closed shutters."[4]

Although Dooyeweerd is concerned with all the sciences, not just the natural sciences, his point about philosophical presuppositions is related to Thomas Kuhn's insistance that in natural science

> effective research scarcely begins before a scientific community thinks it has acquired firm answers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may legitimately be asked about such entities and what techniques employed in seeking solutions?[5]

Equally important in this critical reflection, according to Dooyeweerd, is the question of the character of *scientific thought* itself. It has long been assumed in

In place of the scientific wars among the proponents of various "-isms" who seek to reduce concrete reality to one or another absolutized modal function, we can enter into closer cooperation out of concern for the multi-faceted analysis of this reality which is common to us not only as creatures but also as scientists.

Western philosophy and science that theoretical thought, or "scientific reason," (theoretisch denken) is an autonomous, self-sufficient starting point. But, says Dooyeweerd, this assumption has not been justified by a "really critical investigation of the inner structure of the theoretical attitude of thinking itself."[6] There is good reason, on historical ground alone, for calling this assumption into question, because the Greeks, the Scholastics, and the modern Humanists, for example, each meant something different by "reason." If this assumption were truly unproblematic, then it would seem that real differences could be solved in a purely theoretical way.

> But, as a matter of fact, a Thomist has never succeeded by purely theoretical arguments in convincing a Kantian or a positivist of the tenability of a theoretical metaphysics. Conversely, the Kantian epistemology has not succeeded in winning over a single believing Thomist to critical idealism.
>
> In the debate among these philosophical schools, one receives the impression that they are reasoning at cross-purposes, because they are not able to find a way to penetrate to each other's true starting-points. The latter are masked by the dogma concerning the autonomy of theoretic thought.[7]

Dooyeweerd's discussion at this point is rather like Kuhn's when the latter is digging into the character of pre-theoretical "paradigms." The reasons for accepting a new paradigm and rejecting an old one, says Kuhn, "do not derive from the logical structure of scientific knowledge."[8]

> To the extent . . . that two scientific schools disagree about what is a problem and what a solution, they will inevitably talk through each other when debating the relative merits of their respective paradigms. . . .
>
> In a sense that I am unable to explicate further, the proponents of competing paradigms practice their trades in different worlds. . . . The transfer of allegiance from paradigm to paradigm is a conversion experience that cannot be forced.[9]

In the context of this critical examination of the foundations of science, it appears to me that Dooyeweerd's contribution to the philosophy of the social sciences is twofold. In the first place, he engages in a deeply *historical* analysis of the development of philosophy and science which helps to show why there have been different schools of thought, even with regard to the same subject matter, and, in the second place, he presents some unique *systematic* arguments that aid in the distinguishing and classifying of social sciences.

Dooyeweerd's Historical Analysis

Regarding the first half of this contribution, Dooyeweerd offers a penetrating critique of philosophy and some of the sciences by studying their historical development with a view to the *pre-theoretical* "perspectives," "motives," and "world views" which drive and mold them. In this critique he penetrates to what he calls the "religious basic-motives" (*religious grond-motieven*) of theoretical thought.[10] The word "religious" must be understood here not in the narrow sense associated with theological dogma and cultic practices, but in the sense of the deepest driving spirit and frame of reference which encompasses a community of human beings in all their activity, including their scientific study. By "motive" Dooyeweerd does not mean simply what some would call the personal biases or psychological motivations which an individual scientist brings to the work of an otherwise "objectively neutral" science. Rather he believes that with this word "motive" he is pointing to the real basis and encompassing framework that constitutes the communal enterprise of philosophical and special scientific study itself. Every science, says Dooyeweerd,

> presupposes a theoretical view of reality, including an idea of the mutual relation and inter-connection which exists among its various aspects. And this idea, in turn, is intrinsically dominated by a central, religious motive (*le motif religieux central de la pensée*).[11]

He attempts to show, for example, how the basic "*form-matter*" framework of Greek thought arose through the "encounter of the older pre-Homeric Greek *religion of life* (one of the different nature-religions) with the later *cultural* religion of the Olympic gods."[12] Though the Greek philosophers set out to free theory from religious myth, yet, Dooyeweerd contends, their philosophies were not freed from the central motive which was born out of the encounter of these two religions. The medieval, philosophical-theological framework of "nature-grace" appears for Dooyeweerd to be rooted fndamentally in the attempted synthesis of the Christian and Greek basic-motives.[13] And modern science and philosophy reveal, for the most part, the dialectical religious dynamic of "nature-freedom" which arises from the secularization of the Christian Idea of creation and freedom, emancipating human personality from its religious dependence upon the God of revelation.[14]

It is not my intention to try to display or summarize any of Dooyeweerd's critical, historical study here. A sufficient amount of his work has been written in or translated into English so that anyone interested in following his critique can do so. The point to be made here, however, is that Dooyeweerd's method yields especially valuable insights at the key transition periods in Western thought, and any social scientist will find valuable material in his writings since he has done considerable research not only in law but also in sociology, history, politics, and philosophy.

Dooyeweerd's Systematic Approach

Allowing his historical critique to speak for itself, then, I would like to concentrate on the other dimension of Dooyeweerd's contribution to the philosophy of the social sciences. Naturally since he has been trying to expose the fundamental motives and philosophical presuppositions of the various sciences, he has been driven to the clarification of his own religious basic-motive and philosophical assumptions.[15] It is in connection with his philosophical theory that I would like to point out something of special significance for the social sciences and their historical development.

Dooyeweerd contends that the various natural and social sciences, both in their successes and in their failures, have revealed the need for distinguishing between the modalities (*modi, wijzen, modaal aspecten*) of existence and the *concrete things*, events, persons, institutions, etc., which function according to these modalities. By "modality" he means the "how," the manner, or the mode of existing realities. For example, human beings in society exist and function in at least the following ways: numerically, spatially, physically, biotically, psychically, logically, historically, linguistically, socially, aesthetically, juridically, morally, and pistically (by faith).[16] These modes of human existence, Dooyeweerd believes, have been discerned and abstracted by special scientific analyses, and it should be the continued concern of these sciences to differentiate, clarify and describe these modes of existence more fully. The scientific enterprise, however, is one of theoretical abstraction. That is to say, the power of analytic thinking which differentiates a modal field for concentrated logical attention, does not grasp reality in its concrete and full actuality. Science gets at these modal "hows" of existence through theoretical abstraction, but to do this it depends presuppositionally upon *what* actually exists—men, women, and children, schools, businesses, books, buildings, governments, churches, families, and so forth. These concrete realities or identifiable entities, says Dooyeweerd, reveal themselves precisely by the fact that they actualize or function in (*concretiseren, actualiseren*) all of the modalities at once. Businesses and industries, for example, may display an "economical" leading qualification, but they concretize all modalities simultaneously.[17]

This distinction between "modality" and "concrete actuality" can, I think, provide some important and helpful insights for the historical study and contemporary development of the social sciences. It can help us in our attempt to discern the historical process of differentiation of the various special sciences as well as help us to perceive new problems in the relationships and differences between special fields. It can lead to a new, pre-theoretical (pre-scientific) carefulness in giving attention to the real persons, things, events, and institutions from which we are abstracting legal, moral, or economic principles and generalizations. In place of the scientific wars among the proponents of various "isms" (psychologism, historicism, moralism, economism, etc.) who seek to reduce concrete reality to one or another absolutized modal function, we can enter into closer cooperation out of concern for the multi-faceted analysis of this reality which is common to us not only as creatures but also as scientists. This distinction can lead to greater precision in discovering the limits of any single modal analysis—limits which arise from (1) the character of theoretical thought, from (2) the other modalities which are irreducible to one another, and from (3) the multi-faceted concreteness of reality which is not finally reducible to modal analysis at all.

Modes of Experience

With some of these interests in mind, let me attempt to develop Dooyeweerd's theory here in slightly more detail. Considering first the meaning of "modalities," Dooyeweerd describes them as "transcendental" modes of our experience. With the word transcendental he is not pointing towards a supranatural order above reality, but in the direction of an underlying "law" or circumscribing "norm" which makes experience possible.[18] The law or norm of any modality never exists apart from the real subjects and objects for which it holds and vice versa. They are integral components of one another and together constitute *modal meaning*. The scientist is always seeking to discover the exact way in which such law holds for reality. In the various natural sciences the conviction is born that these laws hold in a deterministic fashion. Even humans have no choice when it comes to "gravity." The problem in the social sciences at this point has been twofold. On the one hand, some have sought and are still seeking laws which govern human affairs after the pattern of natural, deterministic laws. On the other hand, there are those who want to insist that there is no heteronomous determination for people when it comes to uniquely human activity-- i.e., where humans are free decision-makers.

Dooyeweerd has attempted to answer this problem regarding the modes of *human* experience by showing that human freedom is always a freedom made possible by the transcendental norms which call people to action. In other words, people are not just free in a vacuum; they are free only to be human. They are free to think logically or illogically, to speak and write grammatically or ungrammatically, to pursue their businesses economically or uneconomically. In everything, however, their actions are made possible, as well as judged, by the various modal norms.[19] These are not "natural laws" which hold for reality deterministically, for one may think illogically if one so chooses. But in either case, a person cannot avoid thinking. And at the same time, one cannot choose to do something which being human does not allow; people are not free to be either Martians or angels. The transcendental norms describe and circumscribe, require and make possible human experience and action. In this sense they are heteronomous. They are not first posited by individuals and groups; they are only concretized or actualized by humans. Nor do these norms exist above the "facts" of reality in a fashion that would make possible a scientific grasp of the "social facts" apart from the "norms" which call the actual human circumstances into existence.

In connection with this transcendental, modal meaning and structure of reality Dooyeweerd did considerable work with the problem of "analogical concepts."[20] The problem here concerns the group of elementary basic-concepts which scientists use, often without giving an account of their peculiar meaning and mutual connections. For example, consider the concept of space. The physical scientist speaks of physical space, the biologist talks of life-space, the logician refers to logical extension, and the legal theorist speaks of juridical space, i.e., the domain of applicability of legal norms. Or as another example, there is economy of thought, economy of speech, legal economy, and so forth. More is involved here, according to Dooyeweerd, than merely an unfortunate use of words or

an inescapable and hopeless ambiguity. The very way in which the special scientists qualify analogical concepts by their own field of investigation reveals the interrelation of the various modalities as well as their distinct irreducibility. What we need, Dooyeweerd has suggested, is a much more careful analysis of these elementary concepts in connection with the continuing scientific effort to delimit and clarify the modalities of experience from which these analogical basic-concepts are derived.

Concrete Constituents of Reality

When we turn, in the second place, to Dooyeweerd's idea of the concrete persons, things, events, institutions, etc., which constitute reality, we find that he is concerned with that for which an adequate account cannot be given simply by modal analysis. These concrete "things," says Dooyeweerd, must be accounted for in terms of their own "individuality structure" *(individual-iteit-structuur)*. He explains this with an example in the juridical aspect.

> In the juridical aspect of reality, all phenomena are joined in a jural-functional coherence. Viewed according to the norm-side of this aspect, this means that constitutional law and civil law, internal ecclesiastical law, internal trade law, internal law of trade-unions and other organizations, international law, etc., do not function apart from each other, but are joined in a horizontal-functional coherence, a coherence guaranteed by the modal structure of the juridical aspect itself. When we view only this universal functional coherence between the various sorts of law, we abstract it from the internal structural differences which the latter [i.e., civil law, church law, trade law, etc.] display.
>
> This general functional viewpoint is highly abstract; it only teaches us to recognize the modal functions within the juridical aspect apart from the typical structures of individuality which are inherent in reality in its integral character [i.e., in state, church, trade organization, etc.]. It is absolutely impossible to approach the internal structural differences between the typical sorts of law, solely with a general juridical concept of function. Therefore, it must be clear that the general modal concept of law can never contain the typical characteristics of *state*-law.[21]

Dooyeweerd and Political Theory

I have suggested that Dooyeweerd's contribution to the study of the social sciences is twofold—both a critical method for recognizing and uncovering the basic ground motives of theoretical thought as well as a positive insight into the difference between the universal *modalities* and the concrete *individuality* structures of reality. Keeping both of these in mind, there are many questions of a social scientific character which can now be asked in a fresh and penetrating way. Let me suggest one line of questions by way of conclusion— questions which turn back on Dooyeweerd himself and which were of concern to me in a study of Dooyeweerd's own place in the development of Calvinistic political theory in the Netherlands.[22]

How has the religious basic motive of biblical Christianity influenced the development of the science of politics? What peculiar insights of a theoretical character have been contributed to political thinking from this viewpoint which could not have arisen from another perspective? Soon after the time of Calvin, Johannes Althusius made an effort to distinguish the special field

of investigation for political science.[23] In fact, Dooyeweerd sees in Althusius the first recognition of the principle of "sphere-sovereignty." But why did Calvinism lead to the peculiar line of thought developed by Althusius, Groen van Prinsterer, Abraham Kuyper, and Dooyeweerd on the Continent while it led to a somewhat different conception of politics in Scotland, England, and the United States? Was the Calvinism more influential in one place than another? And has the admittedly religious character of Dooyeweerd's presuppositions contributed to a greater objectivity in his empirical investigations, or has his Christianity only blinded him to certain "obvious realities" which others have seen?

With these questions it is clear that we have already transcended any special scientific or methodological viewpoint. In order to ask historical questions about political science one is driven back to some basic philosophical and pre-theoretical assumptions about the meaning of history, of government, and of human creatures which are founded in a basic religious conviction about the meaning of reality in its totality. These presuppositions, I believe, must be admitted and developed even while one attempts a more and more critical analysis of political (or any other) science and its historical development in relation to other social sciences. Dooyeweerd's work in precisely this regard is of significant importance. We can be thankful that his labor bore so much fruit during his lifetime and that we have the continuing opportunity to put it to the test ourselves in our various scientific disciplines.

FOOTNOTES

[1] Translated by David H. Freeman, H. de Jongste, and William S. Young, 4 vols. (Philadelphia and Amsterdam, 1953-58).

[2] (Chicago: University of Chicago Press, 1962).

[3] In addition to the systematic presentation of his philosophy in *A New Critique of Theoretical Thought*, shorter introductory expositions are presented in *In the Twilight of Western Thought* (Philadelphia, 1960), pp. 1-61; and *Transcendental Problems of Philosophic Thought* (Grand Rapids, 1948). For an extensive bibliography of Dooyeweerd's works and of numerous secondary sources see L. Kalsbeek, *Contours of a Christian Philosophy*, edited by Bernard and Josine Zylstra (Toronto: Wedge Publishing Foundation, 1975).

[4] *A New Critique of Theoretical Thought*, vol. I, p. 548.

[5] Thomas Kuhn, *The Structure of Scientific Revolutions*, pp. 4-5.

[6] Dooyeweerd, *A New Critique*, vol. I, p. 35.

[7] *Ibid.*, p. 37.

[8] Kuhn, *op. cit.*, p. 94.

[9] *Ibid.*, pp. 108-9, 149, 150.

[10] Dooyeweerd, *A New Critique*, vol. I, pp. 52-93. His use of "religious motive" as distinguished from, and even prior to, "theology" is clarified in his discussion of "Philosophy and Theology," in *In the Twilight of Western Thought*, pp. 113-172.

[11] "La Sécularisation de la Science," *La Revue Réformée*, V, p. 149 (1954).

[12] *A New Critique*, vol. I, p. 62.

[13] *Ibid.*, pp. 65-6.

[14] *Ibid.*, pp. 501-506. One could compare Dooyeweerd's work at this point with that of E. A. Burtt, *The Metaphysical Foundations of Modern Science* (New York: Humanities Press, 1952), or Ernst Cassirer, *Das Erkenntniss-problem in der Philosophie und Wissenschaft der neueren Zeit*, 3 vols. (Berlin, 1906-20), or R. Hooykaas, *Religion and the Rise of Modern Science* (Grand Rapids: Eerdmans Publishing Co., 1972).

[15] Dooyeweerd confesses a Reformation Christian world and life view as the basis of his theoretical thought. It is helpful to note his comparison of this religious basic-motive with that of modern humanism: *A New Critique*, vol. I, pp. 501-508. Cf. also the chapter "What is Man?" in *In the Twilight of Western Thought*, pp. 173-195.

[16] *A New Critique*, vol. I, p. 3. Dooyeweerd's modal theory is elaborated in vol. II of this work.

[17] Dooyeweerd elaborates this conception of concrete realities and their structure in vol. III of *A New Critique*.

[18] *A New Critique*, vol. II, pp. 3 ff., and 414 ff.

[19] *Ibid.*, pp. 237 ff.

[20] *Ibid.*, pp. 55 ff. See also "De Analogische Grondbegrippen der Vakwetenschappen en hun Betrekking tot de Structuur van den Menselijken Ervaringshorizon," *Mededelingen der Koninklijke Nederlandse Akademie van Wetenschappen*, afd. LetterKunde, New Series, vol. 17, no. 6, 1954.

[21] *A New Critique*, vol. I, p. 553.

[22] J. W. Skillen, "The Development of Calvinistic Political Theory in the Netherlands, with special reference to the thought of Herman Dooyeweerd" (Ph.D. Dissertation, Duke University, 1974).

[23] See Frederick S. Carney, Translator, *The Politics of Johannes Althusius* (Boston: Beacon Press, 1964).

A Social Psychological Analysis
of Mass Evangelism

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Mass evangelism is examined in the light of social psychological research on mass communication, attitudes and attitude change. Four principles of mass communication, with respect to its effectiveness in changing attitudes, are explored. Implications for mass evangelism strategy are discussed.

Mass evangelism is a widely discussed subject among contemporary evangelicals. Church leaders vary greatly in their feelings toward it. A British bishop has asserted, "Mass evangelism has been permitted by the Devil to keep the Church from practicing the biblical ideal of community evangelism."[1] This extreme view is balanced on the other hand by those who eagerly embrace any method that will increase audience size, motivated by the naive assumption that a large audience *guarantees* a large response.

It is undeniable that modern technological advances have opened up numerous new and exciting methods for fulfilling the Great Commission not available to previous generations. Television, radio, tape-cassettes and other means have been used in an attempt to reach greater numbers of the unsaved with the Gospel. Although we have seen some positive results through utilization of a mass communication approach, the church is far from fully realizing the potential power of its new tools. This is due largely to a failure to understand the strengths and weaknesses of mass communication which leads in many cases to a haphazard evangelism strategy. Careful study of existing mass communications research needs to be explicitly coupled with research which specifically investigates mass evangelism.

The purpose of this paper is to examine mass evangelism in light of contemporary social psychological research. By examining literature on mass communica-tion, attitudes, and attitude change we are better able to understand mass evangelism and its proper applica-tion. Studies of attitudes are particularly relevant to mass evangelism because faith, which may be consid-ered the end goal of Christian evangelism, meshes well with the contemporary understanding of attitudes. At-titudes are conceptualized with three components: (1) cognitive (or beliefs), (2) emotional (or feelings), (3) behavioral (or action). These three components are all a part of Christian faith.[2]

Components of Christian Faith

First, there is a cognitive element in Christian faith. The early kerygma of the Christian church, as sum-marized by Professor C. H. Dodd,[3] contained statements which were essentially factual. "The faith, in the sense of the message which the apostles and evangelists pro-claimed, was an affirmation of what God had done in Christ."[4] Orthodox theologians have always understood faith as being rational, or based on belief in objective, historical events.

Christian faith is also emotional. This is to say that a Christian strongly identifies with his faith and has

strong feelings toward it. Faith in Christ can never simply be intellectual understanding devoid of feelings. It must always consist of the "yes of the whole personality to the facts of Christ."[5]

There is also an action component in the Christian faith. "Faith . . . involves personal decision, trust, commitment and obedience; it is a wholehearted acceptance of the claim of God upon a man, in the situation in which he exists, with the appropriate response in life and action."[6] True Christian faith must involve not only understanding, but also commitment and obedience. This point is made clear by James when he says, "You believe that God is one. You do well; the demons also believe, and shudder." (James 2:19) The mere cognitive acceptance of a sound creed is not enough. It is necessary for a person to commit himself actively to what he is intellectually and emotionally convinced of.

Inasmuch as faith consists of the same three elements that constitute attitudes, it can be examined in the light of research dealing with attitudes and attitude change. We will now examine some of the characteristics of mass communication with respect to its efficacy in changing attitudes. This will aid us in evaluating mass evangelism.

Mass Communication Research

Joseph T. Klapper reviewed some twenty-odd years of mass communication research and reports the following four basic principles as clearly emerging.

1. *Mass communication rarely serves as an agent of attitude conversion.*

2. *Mass communication ordinarily serves as an agent of reinforcement for such attitudes, opinions, and behavioral tendencies as the individual audience members already possess.*

3. *Mass communication often modifies existing attitudes of the audience . . . but to a degree short of nullifying the attitude or of effecting conversion.*

4. *Mass communication has been found extremely effective in creating attitudes or opinions in regard to topics on which the audience member had no previous opinion at all.*[7]

The remainder of this paper is organized around these four findings. Each is examined with respect to its causes and implications for the Church's evangelism strategy. We do believe that the Holy Spirit can and does at times work contrary to these social psychological principles in His ministry of personal conviction. This, however, does not excuse us from planning and researching evangelism, relying simultaneously upon the leading of the Spirit and the fruits of our academic inquiry. To ignore either reflects poor stewardship.

1. Mass communication rarely serves as an agent of attitude conversion.

In order to appreciate this finding more fully it is important for us to understand some of the characteristiss of the audience. Early psychological research in the area of attitude change relied heavily on what has become known as the "hypodermic model."[8] This model was based on the assumption that the communication was a pure stimulus which, when presented to the audience, would either produce the desired response or would fail to do so. The audience was regarded as primarily passive and the majority of research was directed toward the nature of the message or the characteristics of the communicator.

In many ways the church still seems to be operating under the assumptions of the hypodermic model. Primary, and often exclusive, emphasis is placed on the message in evangelism. This leads to what Engel and Norton call "one-way communication—the message is *sent* from the pulpit, over the air, in print, or in person; the response on the other end is only a secondary consideration."[9] Message purity *is* important but must not be stressed to the point of ignoring message relevancy.

Present research devotes much more attention to what have become known as "mediating factors."[10] These mediating factors concern the response of the individual audience members to the message. Message recipients are no longer regarded as passive receivers, but rather as active processors of the information which is presented to them.

A person will usually ignore, distort or forget any message which threatens a centrally important belief.

One reason for the difficulty in changing attitudes through mass evangelism is that religious beliefs are likely to be central in the individual's inter-related system of attitudes. According to Rokeach, "the more a belief is functionally connected or in communication with other beliefs, the more implications and consequences it has for other beliefs, and, therefore, the more central the belief."[11] Changing a central belief involves repercussions in many other areas of that person's belief system. These repercussions can often be seen in the dramatic change in the lives of new believers. Because of their importance in maintaining attitudinal consistency within the individual, attitudes of this type are extremely resistant to externally based arguments. A person will usually ignore, distort or forget any message that threatens a centrally important belief.

One way of avoiding such threatening communication is through "selective exposure". People are more likely to expose themselves to information with which they agree. A person is not likely to subject himself to media which will challenge attitudes important to his maintaining a sense of attitudinal balance. This is a major shortcoming of mass evangelism. It has very little effect in reaching those who are strongly opposed to the message of the Gospel for the simple reason that these people do not usually expose themselves to "Christian" media.

It must be understood that attitudes serve many, varying needs within the individual. Katz has proposed four functions which attitudes perform. They are (1) instrumental, adjustive, or utilitarian, (2) ego-defensive, (3) value-expressive, and (4) knowledge.[12] According to his "functional approach" to attitude change, it is first necessary to determine the function which a particular attitude serves for an individual before a

prediction can be made regarding how and when that attitude will be changed.

This theory accounts for much of the failure of mass communication in producing attitude conversion. It is particularly relevant in evangelism, for "the typical religious message which is directed toward attitude change is constructed with but one or two aspects of attitudinal function in mind."[13] In most cases the knowledge function alone is addressed to the exclusion of the others.

A major reason for the difficulty in addressing the other attitudinal functions is the lack of information available to the originator of the evangelistic communication. He almost invariably has no data regarding the nature of his audience's attitudes. Thus, he is unable to structure his message to meet their particular attitudinal needs.

According to Katz, the knowledge function of attitudes is most susceptible to the mass communication approach. This type of attitude will be changed upon presentation of new information which creates uncertainty in the mind of the recipient. If the facts are presented in such a way that they create sufficient dissonance within the individual audience member, it is predicted that he will change his attitude.

Changing the other three types of attitudes via mass communication is somewhat less successful, especially in the case of ego-defensive attitudes. "The usual ways of changing attitudes have little effect on . . . (them), (i.e. increasing the flow of information, promising and bestowing rewards, and invoking penalties). In fact, these procedures usually have a boomerang effect."[14] Thus, a person with this type of attitude may, through exposure to a communicator who is unaware of his particular attitudinal characteristics, become unreceptive to any further presentation of the Gospel.

This principle must be seriously reckoned with by every Christian communicator in order to avoid placing stumbling blocks in the future spiritual development of his audience. The type of audience most susceptible to this boomerang effect are those who have not chosen to expose themselves to a particular message but have had it "forced" upon them. An example would be a spot ad on secular radio. Such an evangelistic technique has little chance of effecting a major attitudinal change unless it has been specifically designed to meet the need of the individual audience member. If it is not so designed, it can cause more harm than good.

It is poor strategy to spend much money and time beaming evangelistic messages to an audience that consists almost exclusively of Christians.

It would be extremely valuable if evangelists engaged in research prior to any major presentation of the Gospel. They should try to discern as accurately as possible the feelings of their audience toward Christianity. If at all possible, messages should be directed toward relatively homogeneous populations. This procedure would greatly increase the effectiveness of any evan-

gelistic attempt while decreasing its potential for harm.

2. Mass communication ordinarily serves as an agent of reinforcement for such attitudes, opinions, and behavioral tendencies as the individual audience members already possess.

According to Klapper, this finding is probably the most basic and widely confirmed principle in the entire field of mass communication. Two intrapsychic mechanisms, selective retention and selective perception, are largely responsible for the reinforcement tendency of mass communication.

Selective retention refers to the tendency of the individual to recall material with which he is sympathetic far better than material with which he disagrees. Not only is sympathetic material recalled better in tests of short term memory, but this difference in recall rapidly intensifies over time: unsympathetic material is forgotten more rapidly than sympathetic material. This fact has been borne out by much research and is another reason for the ineffectiveness of mass communication in attitude conversion. When the individual is presented with material with which he does not agree, he is more likely to forget it, thus reducing the dissonance which he may have momentarily experienced.

Selective perception suggests that people tend to misperceive and misinterpret unsympathetic information in such a way that for them it becomes information which supports their own view. A person who receives threatening information may simply distort the message and view it as lending credence to what he already believes. This response has also been widely validated by much research.

These selective processes point out the importance of feedback in communication. Without adequate feedback, a communicator is unable to determine how his audience is treating his message. Mass evangelism does not lend itself to feedback of this type. The evangelist is therefore not in a position to counter the attempts of his audience as they mentally struggle to escape the force of his presentation. Thus, in some instances, audience members will actually use the message of the evangelist to further strengthen their attitudinal opposition to the Gospel. Evangelistic communicators must be careful to avoid this possibility.

The role of mass communication in reinforcing attitudes, opinions, and behavioral tendencies which are already held has tremendous implications for building up the body of Christ. Christian radio stations, television, and literature, as well as the usual Sunday morning sermon, have all proven effective in strengthening the faith of individual believers. This ministry to Christians should be the main goal of "Christian" mass media. Such media have little chance of reaching the unsaved due to selective exposure—unbelievers will usually change the station. It is poor strategy to spend much money and time beaming evangelistic messages to an audience that consists almost exclusively of Christians.

3. Mass communication often modifies existing attitudes of the audience . . . but to a degree short of nullifying the attitude or effecting conversion.

This finding is extremely important in helping to

outline our evangelism strategy. It seems reasonable, in light of the fact that mass communication rarely produces major attitude conversion, that we should take a closer look at our concept of mass evangelism. Must "conversion" always be the immediate goal of every evangelistic effort or would it perhaps be better to set a goal of attitude modification when using a mass communication approach? Research suggests that the latter would prove far more fruitful.

Rokeach has defined an attitude as a "relatively enduring organization of beliefs about an object or situation predisposing one to respond in some preferential manner."[15] The "central objects" of Christian faith are Christ: his life, death and resurrection. This belief is organizationally related to many other beliefs (i.e. beliefs dealing with the nature of man, the church, the purpose of life, etc.). Since mass communication is relatively unsuccessful in effecting a major change in the unsaved persons attitudinal *core*, it would be far better to direct the bulk of our mass communication efforts to changing more peripheral beliefs and aiming toward modification of existing attitudes rather than conversion. This modification would "soften" a person's attitude and pave the way for a future conversion.

James Engel has devised a model of what he calls the "Spiritual Decision Process"[16] (see Figure 1). This model, along with well-planned pre-evangelism research aimed at determining the nature of a particular audience's attitudes is a helpful tool in planning evangelism strategy. Engel illustrates how people vary in their attitude toward, and their understanding of, the Gospel. According to Engel, people range in their attitude toward the Gospel all the way from -8 (awareness of a supreme being—nothing more) to -1 (at which point a person makes a commitment to Christ).
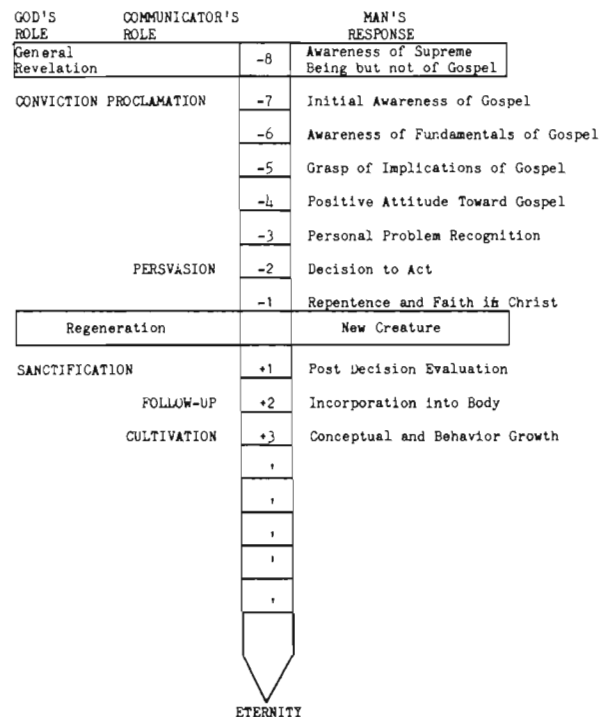
The point which seems most relevant to this study is -4 (positive attitude toward the Gospel). It is this point which seems to set the limit for those who could be converted by mass evangelism. Conversion for those between -4 and -1 would not require a major attitude change, as those people are not strongly opposed to Christianity. Thus, it is only necessary to clarify and modify those attitudes which the individuals already possess. Research suggests that mass evangelism would be very successful in modifying and clarifying the attitudes of persons with these basically positive attitudes. This type of person is often found at large scale evangelistic crusades due to the weeding out process of selective exposure. This, along with the working of the Holy Spirit, most likely accounts for a great deal of the success of men such as Billy Graham.

We should avoid trying to "convert" those in the -5 through -8 stages via mass evangelism. Not only will our successes with these individuals be extremely sparse, but we might even inadvertently strengthen a person's opposition to the Gospel. With an audience of this type it is more important to concentrate on proclamation, rather than persuasion. Attitude modification should be the goal—not conversion.

4. *Mass communication has been found extremely effective in creating attitudes or opinions in regard to topics on which the audience member had no previous opinion at all.*

When no previous opinions are held the importance

FIGURE 1

ENGEL SPIRITUAL DECISION

PROCESS MODEL

GOD'S ROLE	COMMUNICATOR'S ROLE		MAN'S RESPONSE
General Revelation		-8	Awareness of Supreme Being but not of Gospel
CONVICTION	PROCLAMATION	-7	Initial Awareness of Gospel
		-6	Awareness of Fundamentals of Gospel
		-5	Grasp of Implications of Gospel
		-4	Positive Attitude Toward Gospel
		-3	Personal Problem Recognition
	PERSUASION	-2	Decision to Act
		-1	Repentence and Faith in Christ
Regeneration			New Creature
SANCTIFICATION		+1	Post Decision Evaluation
	FOLLOW-UP	+2	Incorporation into Body
	CULTIVATION	+3	Conceptual and Behavior Growth
		'	
		'	
		'	
		'	
		'	

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of mediating factors is greatly reduced. In these cases the "hypodermic model" mentioned previously is helpful. The intrapsychic dynamics of the audience become less important because the individual's attitudinal balance is not being threatened. With audiences of this type, message and source factors often are sufficient to "produce" successful attitude formation.

Unfortunately, there are few people, at least in America, who do not have rather centralized religious attitudes. It is rare to find an individual lacking beliefs regarding Christianity. For this reason, the principle of attitude creation has little relevance for mass evangelism in America.

The implications for foreign missions, however, are great. This finding suggests that mass communication could be used very successfully in effecting conversion in those who are relatively unaware of the basics of Christianity. Although the potential for foreign missions is great, the temptation to assume that mass communication will always work when a person is unfamiliar with Christianity must be avoided for the following reasons. Due to the nature of Christian faith, belief in Christ must be integrated with a great many other beliefs in a person's interrelated belief structure. Thus, a presentation of the Gospel is potentially threatening to an individual's attitudinal balance even though the beliefs which have been challenged do not specific-

ally relate to Christianity. Examples of such beliefs are those dealing with moral behavior, societal structure, cultural norms etc.

For this reason, Christian communicators must be extremely cautious to strip the Gospel of its American, middle class clothing when presenting it to foreign cultures. This will reduce the chance of a person rejecting the message of Christ because he perceives it as threatening a previously held belief, which in reality might have nothing to do with Christianity. While making certain that biblical principles are not compromised, missionaries should make every effort to adapt the message of Christ to those beliefs which members of a particular culture already hold. This will reduce greatly the role of mediating factors and increase the effectiveness of the communication.

Conclusions

Four principles of mass communication have been examined and each has been shown to have relevance for mass evangelism strategy. In most cases the term "mass evangelism" has been used in its most general sense. Specific forms of mass evangelism (i.e. mass rallies, television, radio, literature, mailings etc.) each have their own particular characteristics and for that reason it is necessary for the Christian communicator to examine his own media with respect to the four principles described. In that way a specific program of evangelism can be mapped out taking into account the nature of the audience's attitude structure, the degree of immediate attitude change desired and the type of media to be used. Hopefully this sort of evangelism strategy will be used by the Holy Spirit to bring many to an attitude of saving faith in Jesus Christ.

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Truth : Mathematical and Biblical

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Is the statement, "You can't prove that God exists" true or false? Of course, the meaning of the words is of crucial importance in attempting to answer that question. In particular, there are two eligible, and quite different, meanings for the word "prove." One definition for the word "prove" would be the usual definition that mathematicians use. A second would be a logical argument which would convince every sane person. As we shall see, these two definitions are not the same at all.

Basic Assumptions

In every mathematical system certain statements are

assumed to be true. These assumptions are called axioms or postulates. To see why it is necessary to have assumptions, (i.e., why it is impossible to prove every statement) consider the following. To prove that statement, S1, is true we must give a statement, S2, as a reason. Then to prove that S2 is true we must give another reason S3. This process must either continue indefinitely, be circular, or at some point come to a statement which we say is one of our basic assumptions. So in mathematics we prove statements (called theorems) by starting with axioms and using logic or deductive reasoning. We are then certain that our theorems are true *if our assumptions are true.* But if our assumptions are in doubt, then we cannot be certain about our conclusions. We cannot use deductive reasoning to prove that our axioms are true, because as we have seen, every mathematical system must start with some assumptions. Therefore, in mathematics we can never arrive at certainty. In fact, it's even worse: mathematicians are not even interested in whether or not a set of axioms is true. They would be happy if they could just show that they are consistent. Even here they have trouble.

Kurt Gödel, a mathematical logician, demonstrated in 1931 that if you have a set of axioms that's complete enough to give such a simple thing as the real number system, then it cannot be proved to be consistent. Notice that he did a very interesting thing. Only mathematicians do these kinds of things. He proved that it is impossible to prove that a set of axioms is consistent.

Now, of course, we believe that they are consistent, but that is exactly the point I'm trying to make. We are reduced to the place where we must have faith. We cannot prove it. In fact, we even prove that we can't prove it.

> Suppose we loosely define a religion as any discipline whose foundations rest on an element of faith . . . there may or may not be reason present, but at least there has to be some element of faith. Quantum mechanics, for example, would be a religion under this definition. But mathematics would hold the unique position of being the only branch of theology possessing a rigorous demonstration of the fact that it should be so classified.[1]

So, in the first sense of the word "prove," we can prove that God exists. We just have to start with the right assumptions. But these assumptions may be in doubt, in which case the "proof" doesn't mean anything. In the second sense of the word we cannot prove that God exists, but we cannot prove (in this second sense of the word) that God doesn't exist either.

Mathematical proof, then, consists of going from axioms to theorems by way of deductive reasoning. Axioms are sometimes called postulates or assumptions, and when this method is used in science they may be called hypotheses, presuppositions, and sometimes even laws. Today a set of assumptions used in science is often called a model. It is important to note that deductive reasoning *cannot* lead us to these axioms. Then what good is deductive reasoning? I believe there are at least two very important things that reason does for us.

I. *If through observation, experience, revelation, or any other method we come to believe something, then reason can be used to deduce other things (let's call them conclusions). That is, if our hypothesis is true,*

then our conclusions are true also and we have become aware of new truths or at least truth in a new and perhaps more useful form.

II. *The conclusions can be used to test the original hypothesis. If the conclusions agree with our experience, we have even more faith in our hypothesis. But, if the conclusions do not agree with our experience, our faith in the hypothesis may be weakened or even destroyed.*

Mathematical Method and Divine Revelation

Now, let us consider how the mathematical method (i.e., deductive reasoning), the scientific method, and faith in divine revelation are related. As first it would seem that revelation and the scientific method have nothing in common. However, when we consider the question, "Is a particular proposition or set of propositions a divine revelation?" it sounds a lot like the question, "Is a particular proposition or set of propositions a good scientific model or theory?" Perhaps there is some similarity in the way we might answer these questions. Before attempting an answer let us consider the scientific method.

There may not even be such a thing as *the* scientific method. There are certainly different methods or procedures in different sciences. For example, in some parts of astronomy, geology, and biology the important method of repeated experiments is not possible. Even so, I believe (note that at least an element of faith is now a part of this paper even if evidence of learning never appears) there are some things common to all scientific investigation. From my background in mathematics, I feel free to *define* the scientific method to be some of these common elements.

In order to find these common elements, we start by looking at a popular, and over-simplified, description of the scientific method. A scientist gathers and organizes data. He then uses inductive reasoning to make generalizations. Since I am a mathematician, I will call these generalizations *postulates.* These postulates are checked against all the data possessed by the scientist and new experiments may be designed to test the generalizations further. These postulates may be used as premises and by means of deductive reasoning further generalizations (or theories) can be derived. These, of course, can be tested in the same way as postulates. At each testing new data are obtained and the cycle of steps repeated. It is the scientist's belief that, in the long run, this procedure gives closer and closer approximations to the truth about reality. Figure 1 illustrates this procedure.
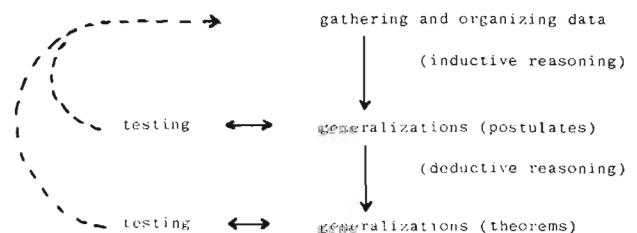

Figure 1

As an example of this, Isaac Newton observed various falling bodies (including apples and the moon). From these data he hypothesized that there is a force of attraction between every two objects which is directly proportional to the product of their masses and inversely porportional to the square of the distance between them. From this he could deduce Kepler's Law's of planetary motion and many other relations. Newton himself believed that this was the way the scientific method operated. In spite of Newton's belief, there seems to me to be one serious flaw in the whole scheme and that is the step where he went from the data to the formula by induction alone. It is certainly clear that Newton did go from the data to the formula, but I think that there must be more involved than inductive reasoning. Figure 2 is a modification of Figure 1 which shows some of these extra things. Please notice particularly the last of the added elements.
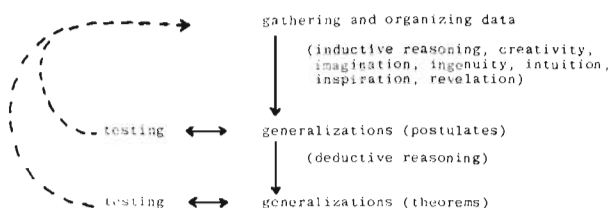

Figure 2

Before commenting further on these additions to the scientific method, it should be pointed out that the scientist does not begin at the top of these diagrams with a completely open or unbiased mind. He has various presuppositions, attitudes, and inclinations determined by his culture, psychological make-up, and overall vision of the world. It is also possible, and even probable, that his participation in the scientific endeavor will modify these.

Physicist Werner Heisenberg said, "In fact, imagination plays a decisive role in natural science. For even though we can hope to get at the facts only after many sober and careful experiments, we can fit the facts themselves together only if we can *feel* rather than think our way into the phenomena."[2] Einstein would even say that Figure 2 is not just a modification of Figure 1 but a totally different process. In his view,

> the best path to be followed might not be that of observation followed by induction of general laws, but the totally different process of postulating a theory and then discovering whether or not the facts fitted it. Thus a theory should start with more scientific and philosophical assumptions than the facts alone warranted.[3]

One of these assumptions was his belief in the harmony of the universe.

Therefore, perhaps a better way of looking at the scientific method would be to call the set of postulates a theory or model. This model is obtained in some way from data by means of induction, imagination, inspiration, etc. It seems to me not unlikely that at times

Revelation is a gift to us from God, but our evaluation of it and acceptance of it may be a result of a reasoning process very much like the scientific method.

God gives some revelation of a scientific nature to a scientist, whether the scientist is a Christian or not. He works in mysterious ways his wonders to perform. In whatever way this model is obtained it is essential that reason be used to determine whether or not it is acceptable. It must be checked against all kinds of evidence. It will probably seem to be in conflict with some of the evidence. This usually is a surprise to most non-scientists. The scientist does not discard a model just because it contains some paradoxes. He compares it with other models. None will be able to explain everything. All will probably involve paradoxes. None can be proved by a single line of reasoning, so cumulative evidence is important in determining in which of the various models the scientist places his faith. From this time on, the behavior of the scientist will depend, at least in part, on which model he believes in and the degree of that belief.

How then does this relate to divine revelation? Suppose you receive what you think is a divine revelation. How do you know, in fact, that it is a revelation and not just the result of an idea planted in your subconscious mind from the combination of a television show you saw last week and a dream you had last night, perhaps aided by a touch of indigestion or the sight of a beautiful sunset? I think we would have to use the same kind of testing we use for a scientific theory. John Locke put it this way,

> Whatever God hath revealed is certainly true: no doubt can be made of it. This is the proper object of faith: but whether it be a divine revelation or not, reason must judge . . . God when He makes the prophet does not unmake the man . . . I do not mean that we must consult reason and examine whether a proposition revealed from God can be made out by natural principles and if it cannot then we may reject it: but consult it we must.[4]

Even Jeremiah was not always sure when he had received a revelation until he checked it against the evidence. Jeremiah 32:6 and 7 says, "and Jeremiah said, The word of the Lord came unto me, saying, Behold, Hanameel the Son of Shallum thine uncle shall come unto thee, saying, Buy thee my field that is in Anathoth: for the right of redemption is thine to buy it." Verse 8 tells how his uncle came with the offer to buy the field and Jeremiah says, "*Then* I knew that this was the word of the Lord."

In Matthew 11 we have another example of this type of testing of faith. Keep in mind that the incidents reported in this chapter occurred after John the Baptist's declaration to the crowd on the occasion of the baptism of Jesus, "Behold the Lamb of God, which taketh away the sin of the world." Now John sends his disciples to inquire of Jesus, "Art thou he that should come or do we look for another." Jesus does not condemn John for his lack of faith, in fact, he praises him as a prophet saying, "Among them that are born of women there hath not risen a greater than John the

Baptist." The answer Jesus gives is that they should look at the evidence. "The blind receive their sight, and the lame walk, the lepers are cleansed, and the deaf hear, the dead are raised up, and the poor have the gospel preached to them."

The Greatest Model

Now let us consider the greatest revelation of all and the greatest model of reality, namely the biblical or Christian view of reality. We may not be able to use reason to arrive at this biblical view of reality, but we can use reason to check it. Note also that we can say the very same thing about Einstein's Theory of Relativity; we may not be able to use reason to arrive at it but it can be checked by the use of reason. Following is a list, although certainly not a complete list, of some of the types of evidence for the biblical or Christian view of reality.

1. *The existence of moral law.*
2. *The truth of the biblical statements that can be verified.*
3. *Historical evidence of biblical events.*
4. *Personal experience and the personal experience of other Christians.*
5. *Scientific evidence.*
6. *The weaknes of alternative (i.e., non-Christian) models.*

C. S. Lewis' book, *Mere Christianity*, discusses the existence of moral law as evidence. There are many biblical statements that can be checked by our experience or the results of natural or social science. *None of These Diseases* by Dr. S. I. McMillan looks at many of God's commands to the Israelites in the light of modern medical knowledge. *History and Christianity* by John W. Montgomery is a good book on historical evidence. The fourth point in the list may not sound like part of the scientific method, but Heisenberg said, "science, too, is based on personal experience, or on the experience of others reliably reported."[5] One example of scientific evidence is William Pollard's thesis, elaborated in Chapter 4 of *Physicist and Christian* that every path of investigation of nature leads to supernature. Many of C. S. Lewis' books (e.g., *Miracles and The Abolition of Man*) discuss various types of evidence. Perhaps none of these paths alone is convincing to a given individual, but remember that the same thing was true in the scientific method. The power of cumulative evidence is the really important point here.

There are paradoxes in this model; for example, man's free will and God's sovereignty, God's justice and mercy, and human suffering and God's love. We can't overlook these problems, but paradoxes do not necessarily overthrow the model.[6] There are extremely difficult paradoxes in the mathematical system of real numbers, but all the mathematicians I know have a great deal of faith in it. Physicists cannot reconcile the wave and particle nature of light, but they believe in both. Whether the paradoxes in the biblical theory of reality are enough to overthrow a person's faith depend upon the strength of the cumulative evidence and the weakness of the alternative models. Atheism, for example, has the problem of trying to answer the questions of how personality can be produced by an impersonal universe or how love and care can come from an unloving and uncaring universe. As Elton Trueblood has said,

"A believer believes in God partly because he is unable to make a leap of faith as great as the atheist is forced to make."[7]

My conclusion is that the process of understanding and coming to have faith in divine revelation is very much similar to the process of understanding and coming to have faith in a scientific model. I realize that revelation is a gift to us from God, but our evaluation of it and acceptance of it may be a result of a reasoning process very much like the scientific method. We should remember that scientific models are obtained in various ways, perhaps even sometimes by revelation, but, in any case, must be checked by the procedures in the scientific method. In my opinion, we tend to overestimate the role of reason in science and underestimate the role of reason in religion. Bertrand Russell, one of the greatest mathematical logicians said,

> there is an element of truth to be learned from the mystical way of thinking (revelation, insight, intuition) which does not seem to be obtained by any other manner . . . What I do wish to maintain—and it is here that the scientific method is imperative—is that insight, untested and unsupported is an insufficient guarantee of truth, in spite of the fact that much of the most important truth is first suggested by its means.[8]

This relationship is stated by the theologian, J. Edward Dicks, in this way,

> reason can become effecive only when it is supplied material that is given it by faith. The relation is one of reciprocity. Reason contributes as it makes a critical analysis of faith, tests its premises, interrogates its criteria, and holds in check its tendency to resort to authority.[9]

Perhaps, you are not conscious of this sort of process in your own experience. It is my belief that consciously or unconsciously you use reason in some of the ways I have described. If not, as Pascal has said,

> Therefore, those to whom God has imparted religion by intuition are very fortunate and justly convinced. But to those who do not have it, we can give it only by reasoning, waiting for God to give spiritual insight, without which faith is only human and useless for salvation.[10]

I believe that for some people, at least, reason plays an important role in coming to faith. Reason cannot lead a man to God, but it can lead him to a position where God is able to reveal himself to man. Therefore, for many reasons, I agree with J. Edward Dicks' statement that "a faith accepted by critical analysis by reason is better than a faith coddled to avoid contact with reason."[11] Also, I agree with the biochemist, Denis Alexander, that "The revelation of God in Christ is accepted because as a general model of explanation it 'fits the facts' about the human condition in a way that no other model does."[12]

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Christian Faith and Higher Education

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De-vangelization

While many of us talk about evangelizing the world, the process of de-vangelization is often more evident, especially in the universities. The point scarcely needs laboring, for the instances are too numerous and too painful. Not a few who come to the campus as Christians leave with their faith blunted if not replaced by atheism or agnosticism. Why?

Much of this de-vangelization process, of course, has little to do with the university. In or out of college, young people have a habit of growing up, and as they move beyond adolescence they are bound to experience a whole range of stresses that challenge their previously-accepted beliefs. But the natural strains of this inevitable drive towards maturity and independence are intensified by university experience, particularly at the intellectual level. During early home-life the lines of influence may well have converged to favor faith, but there is no such focus, even ideally, within the secular university. The ideas and influences that pour in come in parallel rather than converging lines. Whatever may or may not be the beliefs of individual professors, there can be no weighting in favor of Judaism or Christianity, Islam or Zen Buddhism, agnosticism or atheism—for that is simply not the job of a secular university. Almost of necessity an attitude of clinical objectivity rather than of commitment is favored, the shrewd scepticism of science is contraposed to faith, and if the pros and cons of different viewpoints are spelled out they are stated (ideally) by a neutral. The results may not be intended, but all too often the exclusion of spiritual levels of interpretation seems to indicate their elimination or insignificance, and quite apart from this some confusion and unsettlement is bound to follow.

Something of this may be all to the good—after all, a major function of a true education is to open up the mind and disclose alternatives—and not all portions of the university are equally involved. There is no single process that applies to the engineering and the history student, to the biologist, geographer, psychologist and school-teacher. And there are professors *and* professors. Not a few have been drawn from ethnic or religious groups which feel little sympathy for Christian faith, others have renounced (not without bitterness) the "fundamentalism" that they deemed obstructive to personal or scientific growth, and some have retained or gained Christian faith. But almost certainly the Christian professor will have thought his way through to a somewhat different interpretation of the issues of faith and science than those that may prevail in both the pew and campus-Christian groups, and even a careful lecturer may inadvertently strengthen negative attitudes among his students.

As Malcolm Jeeves remarks in his *Psychology and Christianity*, in the typically-crowded schedule of the course "there is not enough time to qualify every statement and discuss all the evidence. . . . A student may understandably misinterpret some (to the lecturer)

innocent statement and see it conflicting with what he
believes as a Christian." (p. 7). And even if the lec-
turer does become aware of some miscomprehension
he will rarely have classroom time to tease out implica-
tions that are peripheral to the course, modify the tone
of a critical textbook, or point out different levels of
interpretation. This lecturer, for instance, after teach-
ing a firmly-geographical course on the "Historical
Geography of the Holy Land" to a very mixed audience,
received an appreciative letter to the effect that "I know
a lot of people, including myself, came into this class
with the expectation . . . that the class would [offer]
proof of Old Testament writings . . . not realizing that
when speaking of the historical geography of other
regions no religious implications enter our minds."
Hopefully the informational rather than apologetic na-
ture of the course (which did touch on some sticky
questions) as well as the necessary limitations of its
framework were generally appreciated. But how often
(for instance) are such issues as "the four corners of
the earth" and "Bible teachings on earth-sun relation-
ships"—let alone Darwinism!—touched on with damag-
ing effect in courses that sweep across the surface of the
centuries? And how often have young Christians re-
coiled as they read, for the first time, of the grim his-
tory of religious conflicts and the intolerance that has
so often been the accompaniment of strong conviction?

Furthermore, even a Christian student tends to
breathe in a "worldview" from his educational atmos-
phere, a setting which, even when claiming neutrality,
is frequently far from neutral to Christian faith. That
worldview tends to be secular and scientific (if not
scientistic), naturalistic and humanistic, neutral and
relativistic. Of course, all those terms need to be put
into "quotes" and qualified, but the point that we must
stress is that in very considerable measure these not only
cut across the grain of Christian conviction on campus
but diffuse outwards and downwards into the broader
community.

Mission to the Educated

Do Christians in general realize the strategic signifi-
cance of that fact? Perhaps the rhetoric of democracy
and equality blurs the importance of the fact that there
are culture-creators and culture-recipients in any socie-
ty, that there are people who write books with potent
ideas and people who read books and absorb ideas, and
that concepts formulated at the culture-makers' level
ultimately seep—often in distorted form—to all but the
most resistant areas of society. And while the church
has often felt at ease in a "downward" mission relation-
ship with the "underprivileged" of its own or other
societies, it has seldom felt at ease in an "upward" re-
lationship with the more sophisticated levels of the
educated. Today, as J. Nederhood has pointed out in
1960 in *The Church's Mission to the Educated Amer-
ican,* there is a thickening layer of society with strong
educational conditioning, and "if the Church fails to
enter into a mission relationship with the educated it
will actually fail to touch the nerve of American life"
(p. 27). With local variations of time and place, this is
indeed true throughout Western Civilization at least.
And Nederhood is also basically right when he affirms
that the educated must be challenged by a Church

which is aware of and sensitive to the points of contact
and planes of division.

> The Church will only be able to enter into a decisive
> mission relationship with the educated if it is continually
> conscious of educated individuals' wonder at the [im-
> personal] magnitude of the universe; their general ac-
> ceptance of evolution; their consciousness of psycholog-
> ical phenomena; their uncritical, indiscriminate reading
> of popularized, scientific studies of religious data. . . .
> Each of these elements significantly qualifies the relation
> of the educated to the Christian message (p. 94).

Perhaps each of these elements calls for at least brief
comment, for they impinge separately as well as togeth-
er on the attitudes of quite a few. The tendency is to
view whatever god may be as a "God of the galaxies"
who is somehow much too big to be a "personal" God,
who is somehow incompatible with a Man who died on
a cross at a remote place nearly 2000 years ago. In
fact, a subtle undercurrent of intellectual snobbery
enters in, and blends with social and political view-
points that are prone to appeal to campus communities.
The prevailing attitude, wisely or otherwisely, tends
to be liberal and sometimes leftist, Marxist thought is
likely to be credited with more intellectual respectabil-
ity than Christianity (especially conservative Chris-
tianity), and there is a good deal of well articulated
feeling that Church members are liable to be "just plain
folks" who inherit a residual rural tradition, whose
views are archaic and irrelevant if not downright racist
and obscurantist. Christians, in short, are likely to be
viewed as anti-intellectual and anti-scientific.

This attitude is sharpened by the quite widespread
acceptance of Evolution (with a capital E) as the ulti-
mate explanation of the universe. A scientist may be
aware that as G. K. Chesterton put it, "nobody has ever
seen it happen," and of course many a scientist who is
a Christian insists that the concepts of creation and
evolution, properly understood, neither clash or cancel
each other out. There is no intention here to debate that
issue. But it is necessary to affirm that that is not how
it seems to be coming through. In practice, creation
and evolution often appear as mutually exclusive, bib-
lical Christianity appears as the villain of the piece in
obscurantist conflict with triumphant Darwinism, and
Evolution is expanded into an all-encompassing world-
view which somehow explains the whole cosmos with-
out residue or complementary levels of explanation. All
that exists is engendered by and encompassed within
Nature, and Darwin is assumed to have put the Bible
out of business. Furthermore, throughout all this—and
especially from Galileo to Darwin—Christianity and its
dogmas may well be presented as the obstacle to under-
standing. Add to this the recent charge that the Judaeo-
Christian ethic and the command to multiply and fill
the earth lies at the root of the ecological crisis, and
our students have a problem.

Side by side with this is a complex of ideas pur-
portedly derived from such social sciences as psychol-
ogy and sociology. These interpretations may not so
much challenge Christian beliefs as simply appear to
"explain" them—and even explain them away. For they
provide data which may be viewed "objectively" at
the psychological or societal levels, and that is pre-

cisely where many seem disposed to place all religions. So viewed, the crucial issues of truth of content, revelation and the validity of the New Testament documents (for instance) are simply passed over, and the student may be left with the impression that Christianity is simply a social or psychological phenomenon, that that is all there is to the story, and that any religion is as good (or as bad) as any other. In addition, it may well be at least implied that such beliefs lie at the root of many a psychological problem, and that they characteristically impede the social and political progress so strongly espoused in the tradition of secular humanism.

And even if there is an increasing awareness of the value of "values" and even if courses in Comparative Religion are taken, there may still remain a complex of scientific or humanistic assumptions. So far as courses in Religious Studies are concerned, a neutral, non-proselytizing approach is a necessary pre-condition of acceptance on a secular campus, but the issues may go deeper than that. If the levelling process of relativism is carried far enough, the concept of a proselytizing missionary faith that is to "go into all the world and . . . make disciples of all nations" will appear positively repugnant, an arrogant assumption by one group (usually Western) that it can impose its values upon others, cut the tap-roots of indigenous cultures, and manifest a religious exclusivism which is the opposite of the cosmopolitan "tolerance" which is so cherished in many educational circles. Exposed to these concepts, students are bound to feel tensions, for Christianity affirms without equivocation that the Old Covenant law came by revelation to one chosen people and flowed outwards—not without particularities of time and place —to other peoples in accordance with the will of a Sovereign God. This carries with it the consciousness that not all religions, not all values, not all culture-complexes, not all lifestyles, can be deemed as equally legitimate options. Thus popular campus views about cultural and religious "pluralism," "equality" and "democracy" come to be contraposed to the particularity which is inherent in Christianity.

Other tensions arise from the ongoing reassessment of past events which is so characteristic of historical studies. Not unnaturally, many a young person has grown up with a somewhat simplistic view of national and religious history, a view which seldom coincides with the views of balanced scholarship, let alone the touch of contempt that may be injected by the "debunker." It is a disquieting experience to be forced into realization of the multi-sidedness of many an issue, and it is a rare student who does not become painfully (or gleefully) aware of the seamy side of even Christian history, of bitter persecutions and wars waged by more sides than one, of stubborn opposition to initially unpalatable scientific discoveries.

Add to this the fact that so many of the educated are really uneducated when it comes to a real understanding of Christianity. In part, this reflects their sheer busy-ness—for the professor who takes his research and writing seriously is apt to be immersed in a very demanding task—but part of it derives from the ideas about the nature of religion that they have themselves absorbed. Virtually all are conscious of the well-advertised conflict of science and religion, many view reli-

"The Church will be able to enter into a decisive mission relationship with the educated only if it is conscious of their wonder at the impersonal magnitude of the universe, their acceptance of evolution, their consciousness of psychological phenomena, and their uncritical, indiscriminate reading of popularized, scientific studies of religious data."

gious doctrine as simply psychological escapism at best and an obstacle to progress at worst, and if a tolerant open-mindedness is the essential virtue, "dogma" is bound to appear as the villain of the piece. "Any stigma" of course, "will do to beat a dogma," and carefully formulated Christian doctrine, hammered out in response to historical challenge and miscomprehension, is all too apt to be confused with pigheaded personal opinion. Furthermore, many fail to check their sources: it is not uncommon to hear the assertion that Genesis affirms creation in 4004 B.C. And, as Nederhood points out, a good deal of miscomprehension is reinforced by the reading-patterns of the educated, the tendency to rely on the type of articles that find their way into print in semi-popular journals rather than less popular but penetrating analyses that might provoke second thoughts. But how many of us find time for that, anyway? And do some popular Christian viewpoints that verge perilously close to pseudo-science and pseudo-eschatology really help? Darwin, Freud and leftish economic theory are more likely to carry weight.

The Church and Social Action

In particular, they may be deemed more relevant to the "over-riding issues of the day," issues on which many on the campuses, rightly or wrongly, find the churches to be wanting. The natural tendency of youth to espouse liberal causes is oft-times accentuated by university life, and churches (along with many another institution) are liable to be judged accordingly. There is a good deal of genuine feeling that "the Church," if indeed it has any human usefulness let alone divine mandate, should be taking the lead in protest against racial and social inequality and discrimination, segregation, injustice and war. Efforts to point up the past role of Christians in such matters as the fight against slavery tend to provoke the retort "then why aren't you doing more now?"

It may well be (as this writer would maintain), that idealism divorced from a sobering sense of the engrained sinfulness of man can be dangerously simplistic, and that there are serious and legitimate doubts as to the extent to which churches as churches should be drawn into the socio-political maelstrom.

It may well be, as Vigeveno remarks in *The Listener* (p. 29) that "the main business of the church is, after all, life and death, God and man, time and eternity"— not "this game of activism" which has not only been played by others "far longer than the Christians" but which threatens to drain the churches of their spiritual

vitality and distinctiveness.

It may well be, as the testimonies of C. E. M. Joad and Malcolm Muggeridge suggest, that the fading of earthly expectations is an almost necessary prelude to the gaining of spiritual depth. And certain it is that there is a strong conservative strain in the affirmation that we hold a faith which was "once delivered to the saints" and are sustained by absolute truths and standards that are rooted in the nature of God rather than the changing standards of society. But it is only just to point out that these are difficult thoughts for ardent activists who compare the seemingly-sluggish churches with the activism allegedly so typical of the secular humanist, and that not a few have been jarred loose from faith by the presumption that the churches should be more than competing.

How Are We to Respond?

And how are we to counter all this? I wish I knew. All too often the bright young student struggling with difficult issues seems unable to find a helpful peer-group in church or on campus. All too often the supposed threat of scientific findings and hypotheses seems to be countered by a pseudo-science which is propounded with the best of intentions and the worst of results. All too often the church pastor or even campus minister seems to be faced with a painful dilemma. address the concerned and thoughtful few and risk the loss of the faithful (and giving) many, or satisfy the average layman and leave the studious and scientifically-minded dissatisfied.

The dilemma, of course, is not quite fairly stated, but it has its point. Some suggestions can be made. Firstly, the Bible is a unifying force, and a deepening awareness of the Person it presents is doubly unifying. All levels of understanding, all interest-groups within a church, can draw together with the common purpose of understanding and applying the message of the Scriptures.

Secondly, an apologetic dimension can—indeed must —be incorporated in a total Christian approach. And please remember that apologetics is not essentially negative and defensive. Bernard Ramm, (*The God Who Makes a Difference*, pp. 62-63), directing his attention to the churches' heavy loss of maturing youth, rightly points out that this is not caused so much by the sceptical views presented by some particular professor or textbook or even "the general anti-Christian and antireligious mood that pervades both the business and the academic world" so much as the fact that the student "received in church only bits of Christianity here and there . . . His faith resembles a patchwork quilt." But this cannot compete with the "synoptic vision" which he now formulates: he "has not so much lost his faith as he has found a new functional, operational sensible synoptic vision which he did not forge while in church. . . . The importance of synoptic vision is then of immense pastoral concern as well as apologetic concern." Of course this is not the business of one man alone. The apologetic dimension can be introduced and deepened by a wide range of incisive and thoughtful Christian literature.

Nor is the thought-world of the sceptical necessarily cohesive or invulnerable. As often as not it involves an uneasy alliance of scientism and humanism. On the one hand there is the assumption that everything is an accidental by-product of impersonal nature, that all is explicable by "science," and that all may well perish as the sun grows cold. And on the other hand there is the humanist groping for values that science alone can never yield, a faith in the validity of human reason, the thought that individuals and people somehow have rights, the affirmation that at least humanist causes "ought" to be supported. . . . Small wonder that the confident rationalistic scientism of former times is now paralleled by an irrationalistic counter-current. And it is up to us to challenge this complex of unbelief with a consistent Christian faith.

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The Significance of Being Human

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Nowhere is the issue of integration between science and Christian faith more critical than in those areas where scientific knowledge affects and influences human values. In subsequent installments we shall be considering many such areas, in each case trying to emphasize the inputs from science and the inputs from biblical theology, with the effort to arrive at an integration that is faithful to both disciplines. Such areas include discussions of human sexuality, crime and punishment, contraception, abortion, euthanasia, new beginnings of life, genetic engineering, and energy and the environment. The identity of man will come increasingly under challenge as scientific advances show more and more ways in which the attributes and personality of human beings can be influenced by chemical, psychological and sociological influences. The push to deliver man from the effects of sin without recognition of the full relational dimensions of the reality of sin threatens to be successful, but only at the expense of the ultimate dehumanization of man.

One of the difficulties in even speaking about such issues is the common lack of an in-depth understanding of what it means to be "human." We frequently take this understanding for granted, but such an attitude is quickly shown to be superficial, and the gaining of this understanding represents a basic problem in the integration of Christian thought into the real world.

The question of what it means to be "human" is usually coupled with the actual meaning of describing human beings in terms of "body," "soul," and "spirit." What do these terms really mean, not just in an abstract philosophical or theological sense, and not even in the operational sense in which they play their accustomed roles in Christian language, but also in a pragmatic and existential sense? And how do they relate to each other? Can these terms be defined with sufficient clarity and precision, taking into account the full gamut of scientific and theological insights, to be useful in guiding considerations of human value?

It is the purpose of this installment to address itself directly to this fundamental question. The answers we give will determine to a surprisingly wide extent our attitude toward the many issues enumerated above.

How We Are Put Together

In Chapter 7 of *The Human Quest*[1] I have considered at some length what kind of perspective we derive by taking a look at the scientific description of the structure of the world. A brief review of this discussion is essential for our concerns in the present installment. Because of limitations of space, however, I will not attempt to be exhaustive, but will simply try to summarize some of the principal conclusions derived from such a consideration of the structure of the world.

There is a scientifically describable structure to the world, as this structure extends from the pimary source of energy to human society. This structure takes the form of a hierarchy of parts and wholes, of sub-systems and systems. There are three main qualitative breakthroughs in this hierarchy: they occur at (a) the transition from non-matter to matter, (b) the transition from non-living to living, and (c) the transition from non-human to human. To view the activity of God as primarily related to these three breakthroughs rather than as essential and functional for the entire structure is to opt for a God-of-the-Gaps.

In general the whole is more than the sum of its parts. The whole has properties which are not exhibited by the parts. These properties are not *added to* the parts, but arise from the specific patterned interaction in which the parts are dynamically arranged. In some cases this patterned interaction is unique (e.g., there is only one possible geometry for the stable water molecule), but in others the specific patterned interaction essential for the existence of the new property of the whole is not unique but is for any particular individual case scientifically describable only as the consequence of a random (chance) distribution (e.g., the specific arrangement in DNA). It should be noted that any conveyance of *information* (as, for example, in DNA) *must* be the consequence of a random distribution of parts rather than of one specific determined distribution.

There appears to be no *a priori* reason to argue, as is often done, that qualitative changes cannot be the consequence of continuous quantitative changes. The argument ignores the hierarchical structure of the world and the possibility for new properties to be the consequence of a new degree of hierarchical complexity. As the qualitative transformation of liquid water into gaseous steam occurs at 100° C upon continuous addition of heat to a container of water, and as the enzymatic properties of proteins are a consequence of spatial conformations of linear chains of amino acids continuously arrived at,[2] so

> Hierarchical organization in biological systems thus is characterized by an exquisite array of delicately and intricately interlocked order, steadily increasing in level and complexity and thereby giving rise neogenetically to emergent properties.[2]

Qualitatively unique properties can be considered to be emergent whenever the specific patterned interaction in the hierarchical structure is appropriate.

There is no such thing as "life;" there are only *living* creatures. To "be alive" is not to *have* life." "Being alive" is a *property* of a living creature. While not the property of many of the actual parts making up the whole (the atoms and molecules), "being alive" is a property of the whole when these parts interact in the appropriate dynamic pattern. Something does not become alive, therefore, by having life added to the non-living thing. Something becomes alive when its parts are ordered in the appropriate dynamic interaction to exhibit being alive as one of its properties. If the question is asked, therefore, "What must be added to non-living matter in order to make it living matter?" the answer is not that some essence of life must be added, but that the non-living matter must be brought into that dynamic patterned interaction appropriate for being alive. There appears then to be no *a priori* reason why scientists cannot make living matter from non-living matter in the laboratory. Their success or failure has no necessary theological significance. In no case will they truly "create" life, for they (living creatures) are needed to bring another living creature into being. Whether or not it is possible for scientists to make living matter out of non-living matter because of the difficulties involved, or whether or not living matter could have arisen from a set of possibly unlikely natural processes from non-living matter in the past are quite different questions, which cannot be answered without more information.

The question arises, therefore, whether it is at least not *possible* to conceive of "being human" as a property of the total human being, just as "being alive" is a property of the total living creature. In such a case, to be human seems to mean to have the proper structure of dynamic patterned interactions to manifest the property of "being human," not to possess some extraneous substance called "humanness" (or soul or spirit). It is the purpose of this installment to argue that it is this view of "being human" and of "body, soul and spirit" that is consistent both with scientific understanding and with the biblical revelation concerning these questions. It therefore follows that, at least in principle, if a scientist were to assemble non-living matter in *exactly* the same way that it is assembled in a living human being, he would then have produced a genuine living human being, a person for whom Christ died.

There is no such thing as "life"; there are only living creatures. To be alive is not to "have life." "Being alive" is a property of a living creature.

Being Human

If the question, "What do you mean by human?" is asked on the spur of the moment to a variety of people, the answer generally offered implies that to be human means to exhibit those attributes which we commonly associate uniquely with *Homo sapiens*, as well as those attributes characteristic also of the other animals. To be human means most obviously then to "look human" and to be capable of self-consciousness, making responsible abstract choices, verbalization, desire and quest for knowledge, God-consciousness, etc. This most commonly encountered definition of "human" deals, therefore, with what might be called the *social* dimension of humanity: a creature is judged to "be human" if it looks and acts like others previously judged to "be human." If this were the only definition of "human," however, we would have to conclude that a creature not demonstrably exhibiting these characteristics must be judged to be non-human. Is a newborn baby human? Not by this definition alone. A fetus before birth? One in an irreversible coma? The severely senile? One afflicted with severe brain damage? By this definition, all of these would have to be classified as non-human. Such a judgment does not do justice to our deeper instincts for the meaning of "human."

What is the essential characteristic that any creature must have in order to be called "human"? A minimum definition involves only a biological criterion for humanness: a human being is one with a DNA code characteristic of *Homo sapiens*. If any creature has such a genetic structure, then it must be judged to be at least biologically human. No matter how human-appearing any other creature might appear to be, without this genetic structure, it must be judged non-human.

Finally we must consider biblical criteria of what it means to "be human." A human being is one who is made in the image of God, capable of fellowship and personal relationship to God. While we must not overlook this criterion because of its profound inputs into the nature of humanity, we must also recognize that it does not provide us with direct tangible guides to deciding whether or not a particular "unknown" creature should be judged "human" in the sense of being able to claim all the rights and prerogatives that go with that title.

Other criteria that might be invoked to judge whether or not a creature is human should also be considered. Is it necessary to be born of a woman to be judged human? Is it necessary to have fetal development in the uterus of a woman to be judged human? Is it necessary to have come into being as the result of the union of a sperm with an ovum to be judged human? The answer to all such criteria must be no. Although they may describe the normal or expected way in which human beings come into existence according to our previous experience, they do not provide the same kind of basic criteria as those discussed above.

We see, then, that there are three criteria for assigning the designation "human": (1) a minimum criterion, a biological criterion, presence of "human" DNA; (2) an ordinary criterion, a social criterion, appearance and action like other "humans"; (3) a transcendent criterion, a spiritual criterion, made in the image of God and capable of fellowship and personal relationship with Him. In the normal course of development, an individual is *biologically human* before he is *socially human*, and *socially human* before he is *spiritually human*. The distinction human/not-human occurs only at the biological level. Otherwise distinctions are only between exhibiting some of the characteristics of "humanness" and exhibiting more or less of these traits.

If a scientist were to assemble non-living matter in exactly the same way that it is assembled in a living human being, he would then have produced a genuine living human being, a person for whom Christ died.

To be human is a process of becoming. To be fully and completely human can be said to be true of only one person in the history of the world—of Jesus Christ Himself. All other men and women have fallen short of this complete humanity, although they have exhibited in some degrees aspects of this humanity, and depending on their own relationship with God have come into greater or less conformity with true humanity. The process of development from biological, to social, to spiritual to full humanity is God's purpose for His children. We can say, therefore, that we are all *wholly* human (i.e., biologically we all share the same minimum criterion), and also that we are never *fully* human in this life (i.e., reach the full expression of spiritual humanity). In every such sentence, it is essential to understand in detail the way in which the word

"human" is being used.

To speak in this way of a person being biologically, socially and spiritually human should not be used to trichotomize the person into three separate identities. These are functional terms to be used in describing aspects of the one total person, who is biologically, socially and spiritually human. A person cannot be spiritually human without being biologically human, but being biologically human does not demand that he demonstrate spiritually human characteristics.

Human Value

At every stage along the way the human being is valuable. His value does not derive from his utilitarian role in society, but is intrinsic. Man is not valuable because other men give him that value; if that were true they could also take that value away. He is not valuable because he is the current end-product of biological and cultural evolution—he is valuable because God gives him that value. His life is something unique. Even when his human characteristics are purely chemical and biological, he has the potentiality for the psychological, social and theological human attributes. Even when these attributes are only psychological and social, he has the potentiality of receiving the grace of God and being completed as a fully human being. Therefore, although there is no point at which we can say, "This is human and protected, and this is non-human and unprotected," there is also no point at which we can say, "This has intrinsic value, and this has none." What we are confronted with is a continuous progress of life, all valuable, unique and to be honored.

Body, Soul and Spirit

Much of the above discussion of the meaning of "human" could be repeated from a different perspective involving the concepts of "body, soul, and spirit." Because these terms are so heavily invested with theological meaning, it is essential that we consider their relevance as criteria of humanness. Many of our problems with issues of human values might be made easier if we could consider a creature as being human in a psychological and social sense when it possesses a soul, and not human when it doesn't possess a soul (or spirit—general agreement on the significance and relationship of these two terms does not exist among Christians). Then we might be in a situation where we could more easily make such judgments as yes/no, right/wrong, and then/not now.

The problem, however, is not different from the problem of defining what it means to "be human." As the term "human" can be fully expounded only by realizing inputs of content from several different levels, so the terms, "body, soul and spirit" can be seen to be level-oriented words. When we speak about the human person, the terms, "body, soul and spirit" are tied together with the unity of the person in such a way that they do not discontinuously come into being with the passage of time as a living creature develops. Rather they are all aspects of the whole living person, aspects which develop together and manifest themselves in ever more mature and complete ways as God brings that living creature to physical, psychological and theological maturity.

Part of our difficulty here as evangelical and or-

thodox Christians is that the framework of the theology that we have been exposed to has to a considerable extent taken a quite different point of view. And this is certainly true not only of Protestants, but of our Roman Catholic brethren even more. A particularly strong statement characterizes this tradition in the words of Stanley Jaki,

> I also have to tell you that few things can shock me more than when I am told by fellow Roman Catholic theologians, mostly younger ones, that we should not be concerned with the defense of dualism. It is outmoded, they say, and we can very well do without it. Well, I asked one of these whether he would still exist after his body had been duly cremated and his ashes scattered into the nearby river? Then and only then did he realize the obvious, namely that Christian existence is inconceivable without the acceptance of dualism.[3]

Jaki in the Roman Catholic tradition defends dualism, the distinct existence of body and soul (in this tradition, distinctions between soul and spirit are not drawn in the same way.) Many evangelical Protestants have defended the biblical basis for a three-fold view of man, basing their case on

> May the God of peace himself sanctify you wholly; and may your spirit and soul and body be kept sound and blameless at the coming of our Lord Jesus Christ. (I Thess. 5:23)

> For the word of God is living and active, sharper than any two-edged sword, piercing to the division of soul and spirit, of joints and marrow, and discerning the thoughts and intentions of the heart. (Hebrews 4:12)

The distinguished Christian pastor and teacher Donald Grey Barnhouse wrote in *Teaching the Word of Truth,*

> There are three parts of man, called body, soul and spirit. The body is the only part you can see. It is the part that has the five senses, sight, hearing, smell, taste and touch. . . . Animals have bodies as we do, with all these five senses. We also have a soul—the part of us that feels, loves and hates. Animals have this too. . . . But man also has a spirit—the part of him that knows about God. Animals do not have a spirit—they do not know about God.[4]

I think that the meaning of what Barnhouse is here trying to convey in very simple language is not so far from our own argument; he does, however, leave the way open to confusion by speaking about bodies, souls and spirits as *parts* that human beings *have.* He is perceptive, however, in recognizing that what the Bible speaks about as "soul" is also applicable to animals as well as human beings.

It has been frequently assumed by many that when the Bible speaks about body, soul and spirit, it is making reference to three different entities, if not substances, whose existence can be independent of one another. This assumption, and popular tradition based on it, lead to the semantic expressions: "I *have* a body. I *have* a soul. I *have* a spirit." This simple use of language provides a fundamental basis for misunderstanding. For if *I* have a body, a soul and a spirit, who am *I*? The paradigm for resolving this difficulty has already been set by our previous discussion of "life" vs "being alive." There we saw the basic conceptual error in saying, "I *have* life." Life is not something a person *has;* alive is something a living person *is.* Similarly, "body, soul and spirit" are not things that persons *have;* they

are what persons *are.* I *am* a body-soul-spirit. We must hyphenate and combine these three words since they describe differentiable aspects of a single whole human being, not different substances, things or parts that such a human being possesses. To speak of a body, soul or spirit must not be done in such a way as to trichotomize a person into three separate entities. The person *is* the "I" and the "I" *is* a body-soul-spirit, i.e., a whole living functioning human being.

The terms, "body, soul and spirit" refer in a direct way to the three criteria for humanity discussed in the previous section. The biological criterion for humanity relates to the concept of "body." The psychological and social criterion for humanity relates to the concept of "soul." The spiritual criterion for humanity relates to the concept of "spirit."

If I have a body, a soul and a spirit, who am I? Body, soul and spirit are not things that persons have; they are what persons are.

"Soul" and "Spirit" in the Bible

Strong's Concordance to the King James Version indicates that the word "soul" or "souls" appears 58 times in the New Testament, in every case as the translation of the Greek word *psuche.* The word "spirit" or "spirits" appears at least 285 times in the New Testament, in every case as the translation of *pneuma,* except for the two cases in KJV (Matt. 14:26 and Mark 6:49) where it is the translation of *phantasma,* which subsequent translations have more properly rendered "ghost" in English. For a feeling for the total depth of significance and meaning associated with *psuche* and *pneuma* in the Greek, particularly as these terms are used in the New Testament revelation, we refer to Alexander Souter's *Lexicon to the Greek New Testament.*[5]

Souter gives three basic definitions for *psuche:* (1) *Life,* without any psychological content. (2) *An individual,* or as a strong personal pronoun. (3) *Desire.* In comments, Souter points out that "*psuche* generally refers to appetite and desire: it is as a rule a translation of the Hebrew *nephesh,* one of the words for the 'breath-soul,' the personal soul." Finally Souter comments, "The general use of the word in the Bible is in the sense of whatever is felt to belong most essentially to man's life, when his bodily life has come to be regarded as a secondary thing. It comes near the modern conception of *self.*" Thus it appears appropriate in view of the biblical usage to treat the concept of "soul" as a functional one, describing particular attributes of the human being, rather than as a substantive one, describing some substance to be distinguished from the body, as in "I have a body and a soul."

Souter provides an extensive discussion of the word *pneuma,* with the following basic definitions: (1) *Wind.* (2) *Breath,* what distinguishes a living from a dead body, the life principle. (3) "The breath was often in early times identified with the life or soul itself. Hebrew employed three words for the breath-soul, *nephesh, ruach, neshāmāh,* of which the first and second

are the most important, indicating respectively the personal soul and the invading spirit." The Hebrew *ruach*, for which the Greek Old Testament uses *pneuma*, indicates "supernatural influences acting on man from without; the normal breath-soul . . . directly derived from the wind at the bidding of God; the resultant psychical life. . . . Normal human nature was regarded as animated by the same divine *ruach* to which its highest inspiration is due." It is evident that a sharp distinction is not always drawn between *psuche* and *pneuma*; in fact Souter remarks, "In Paul, *psuche* and *pneuma* are hardly to be distinguished." In his overall evaluation of the significance of *pneuma*, Souter says, "In the New Testament *pneuma* refers nearly always to supernatural influences. Sometimes it is employed of the higher nature in man, and is hardly to be distinguished from the result of the influence of the divine *pneuma*. Sometimes it denotes a normal element in human nature. But the Christian is essentially the product of the divine *pneuma*, which is mediated to us by the Messiah." The analysis once again supports a functional interpretation of the term "spirit," describing particular attributes of the human being in relation to God, rather than a substantive one, describing some substance to be distinguished from body and soul, as in "I have a body, a soul and a spirit."

This excursion into biblical exegesis may be summarized as follows in the context of our present discussion. We need to make a distinction between the ontological use of these words and their functional use, i.e., between the use of the words "body, soul and spirit" as descriptive of actual self-existing entities, and the use of these words to describe attributes and properties of a whole living human being. A consideration of biblical usage indicates that a functional use of these terms fulfills the purpose of that revelation in a fairly complete and responsible way. By the "body," the Bible speaks about the physical, chemical and biological aspects of the human being. By the "soul," the Bible speaks about the life, the emotional, mental aspects of man, which we might call his psychological and social aspects. By the "spirit," the Bible speaks about the ability of the human being made in the image of God to be in relationship with God, to be responsible before Him, to be guilty of sin, and to be in need of a Savior.

The biblical terms of body, soul and spirit do not indicate qualities that come into being full-grown at various specific times, but rather qualities which develop and progress to maturity as the human being grows under the hand of God.

The most primitive stage, as well as normally the first chronological state, of humanness is the physical, chemical or biological: the body. The next stage is the psychological and social aspects of humanness: the soul. The completely human being is one who is at one with God in Christ Jesus and is being made like Him:

the spiritual aspects of man are involved.

Just as the definitions of "human" had no sharp discontinuities but rather exhibited a progression from one aspect to the next with increasing physical, psychological and spiritual maturity, so also the biblical terms of body, soul and spirit do not indicate qualities that come into being full-grown at various specific times, but rather qualities which develop and progress to maturity as the human being grows under the hand of God.

There appears to be a growing awareness of this perspective among Christians today, particularly those with a broad view informed by inputs from many different sources, including both science and theology. Professor Sir Norman Anderson, the author of such a wide variety of Christian books as *Morality, Law and Grace*,[6] *Christianity and Comparative Religion*,[7] and *Christianity: the Witness of History*,[8] has recently come to grips with these issues in *Issues of Life and Death*.[9] He writes,

> But it seems to me that a very strong case can be made for insisting that man is, in fact, a psychosomatic *unity*, in which the physical and non-physical are complementary aspects rather than separable elements or parts. This is why the day of resurrection is viewed in terms of the dead being raised to life not as disembodied spirits but in what St. Paul terms "spiritual bodies."

Dr. James Keir Howard, Principal Medical Officer in the Health Department of the City of Liverpool, with graduate degrees in both medicine and theology, has considered in some length the appropriate way in which the soul should be interpreted to maintain scientific and biblical integrity. He concludes,

> If our argument thus far has carried any weight it will be apparent that the concept of "soul" as some immaterial and immortal part of man should be abandoned. The data provided by psychology on the one hand and religion on the other, although approaching the problem from widely differing standpoints, both point to the inescapable conclusion that man is an indivisible entity.[10]

Dr. R. F. R. Gardner, Consultant Obstetrician and Gynecologist in Durham and a minister in the United Free Church of Scotland, writes,

> I find it impossible to believe that the soul is present in the early embryo—that is if "soul" is to have any real content. Perhaps we have been on the wrong track. Do we *have* a soul? James Barr notes: "The soul is not an entity with a separate nature from the flesh and possessing or capable of a life on its own. Rather it is the life animating the flesh. Soul and flesh do not therefore go separate ways, but the flesh expresses outwardly the life or soul. . . . Man does not have a soul, he is a soul.[11]

Correlation with Resurrection

Clearly the biblical view of man as body-soul-spirit is intimately related to the biblical teaching of the resurrection. Christians look forward to the promise of a new body-soul-spirit that will be raised up with a continuity with the earthly body-soul-spirit—a continuity resting upon the complete dependence of a person's identity on God, and yet with major qualitative differences. Sometimes in popular speech the words "soul" or "spirit" are used to indicate the "identity" of an individual which is maintained in continuity from the

Immortality is not some intrinsic property of human "soul" or "spirit," but is instead a future acquisition of Christians by the grace of God.

mortal body, soul and spirit of this life to the immortal body, soul, and spirit of the next. When treated as *functional descriptives*, then "soul" and "spirit" are attributes of the whole human being; when that whole human being dies, therefore, these attributes of "soul" and "spirit" cease to exist in time. In the resurrection God raises up new "bodies, souls and spirits" according to I Corinthians 15. But when treated as *synonymous with individual identity*, the terms "soul" and "spirit" serve a quite different purpose. When "soul" or "spirit" is taken to mean individual "identity," there is meaning in speaking of an "immortal soul," for this "identity," resting wholly on God, is by its very nature "immortal," i.e., dependent only on God and not on man. Confusion is rampant, however, if the words "soul" or "spirit" are used interchangeably and without reference to mean both the attributes of a living human being and the individual identity of that human being. Attributes are changing continuously throughout life from conception to resurrection; identity is constant in the mind of God.

Dr. Murray Harris, Professor of New Testament at Trinity Evangelical Divinity School, has carried out a careful study of the relationship between resurrection and immortality.[12] He emphasizes the New Testament view of immortality as participation in the eternal life of God, and of resurrection as the transformation of whole persons—not the reanimation of corpses—in spite of death. Immortality is not some intrinsic property of human "soul" or "spirit" but is instead a future acquisition of Christians by the grace of God.

> In much popular western thought, the soul is simply one part of man, distinguishable from his body not only in thought but also in reality. As a result, "the immortality of the soul" implies nothing more than the persistence beyond death of that aspect of man which may be called the soul. The New Testament, however, with its basically monistic anthropology, promises the transformation of the whole person, not the survival of a disembodied *ego*. Immortality is not assignable to only a part of man.

Harris has provided a valuable summary of four major ways in which the biblical teaching on immortality differs from the Platonic:

1. It is the whole person who gains immortality, not the soul or spirit that inherently possesses immortality.
2. Immortality is gained by the resurrection transformation, not by birth, and therefore is a future gift of God, not a present inalienable characteristic of human nature.
3. The destiny of the Christian is somatic immortality, not disembodied or purely spiritual immortality.
4. Possession of immortality is dependent on relationship to the Second Adam, not the first Adam, It results from union with Christ, not from being a mortal.

The Problems of the Interim Period

Even if all of the preceding discussion has been favorably accepted, one problem still inevitably re-

mains. What shall we say about the interim period between death and the resurrection? If we accept the fact that man as a body-soul-spirit dies, and that his identity is preserved by the God who made and knows him, to be restored in the transformation of the resurrection into a spiritual body-soul-spirit, still we are confronted with the unanswered question of *how* and *in what form* that identity is preserved until being re-embodied at the resurrection.

Sir Norman Anderson gathers together four common responses to this question.[9] The first is that the disembodied spirits of the deceased are alive, conscious and with Christ if the human being were a Christian; Anderson is unhappy with this commonly held view and questions whether the commonly advanced biblical data to support it are conclusive. A second view is that believers who have died are alive but are asleep in Christ, and will not experience *conscious* life until the resurrection. The third response he finds suggested by C. S. Lewis,

> A composer conceives a concerto with fully orchestral score, but initially commits it to paper only in terms of a piece of piano music. This is played and becomes well known, but the paper on which he wrote it is not duplicated and is eventually destroyed. Then, after an interval, the composer writes out the full score which he always had in mind. This is far more wonderful than the original, but unmistakably the same piece. What, then, could be said about the concerto in the interval between the notation for the piano and its transcription in the full orchestral score—except that it was certainly "alive," but not embodied.[13]

Finally, Anderson advances a fourth view which he himself favors, namely that death brings us out of space-time into eternity, so that "those who die in Christ are immediately with him, in their resurrection bodies, at the Advent—which, while still future to those of us who still live in time, is to them already a present reality." Perhaps all but the first of these represent acceptable attempts to make a bridge between what is known and what cannot be known, although the third and fourth have the strongest appeal to me.

Summary

A human being is a *pneumopsychosomatic unity*. Inputs from both scientific and biblical sources support this view. A human being is bodily, soulful and spiritual in terms of the potentiality for the expression of these attributes. These words express respectively the normal criteria for humanity: the biological criterion of genotype, the social criterion of behavior, and the spiritual criterion of relationship with God.

To be human is a process. The possession of a human genotype assures that an individual will be wholly human; to become fully human requires the process of bodily development, social maturation, and divine sanctification. All life involving the human genotype is human life. Value decisions are called for when one form of human life comes into conflict with another form of human life. Some of these conflicts will be the basis for discussions in future installments.

The human being does not *have* life; the living human being *is* alive. The human being does not *have* a body, a soul, and a spirit; the human being *is* a body-soul-spirit, that unique living creature made in the image of God, redeemed by the blood of Christ, and

destined in Christ (for as many as receive him in faith) to be raised again to living experience as a whole person.

Immortality as an intrinsic property of humanity is a heritage from Greek Platonism; in biblical context immortality is a future gift of God to be bestowed upon those whom he will raise in Christ at the resurrection.

The human being is a pneumopsychosomatic unity. To be human is a process.

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The Student's Corner . . .

RESPONSIBILITY AND RETRIBUTION:

A Narnian Dialogue

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I

Wan and weary, Peter stood with sword in hand surveying the battlefield. He had hoped, as did most of his subjects, that complete peace would reign after Aslan's victory. And, indeed, Narnia experienced a veritable renaissance of peace and happiness for what seemed like years. And then it happened. At first there were only rumours of dark goings on near the borders of the kingdom, then isolated raids into the countryside, and finally a direct attack on Narnian settlements by remnants of the Witch's army. In fact, it was not unlikely that she was behind it all. Peter had underestimated the strength and numbers of those rebellious Fauns, Giants, and talking animals, and had gone out to meet them with inadequate forces. But Lucy had

the foresight to bring along her horn and, when the tide of battle seemed to be turning against them, summoned Aslan himself. Of course, once Aslan had arrived the battle was decided. The enemy lost all courage at his sight and roar, and those that didn't flee pell-mell into the forest quickly surrendered. Peter ordered Edmund and Susan to gather together the prisoners and, while they were doing so, approached the great Lion.

II

"May I speak with you Aslan?", he said bowing before his golden mane.

"Certainly Son of Adam," replied Aslan in his deep

sonorous voice. "What perplexes you?"

Peter was at once sad and happy—happy to experience again the warmth and joy of Aslan's presence, yet sad at having failed in judgment, and so in his duties as High King of Narnia. "I am sorry you had to be summoned, but I'm certainly glad that you are here now. Without your help I'm afraid to think what might have happened. But I must ask your further help in determining what ought to be done with these rebels. On the one hand, they have clearly transgressed the law, and yet I wonder how responsible they are for their actions. They have known only eternal winter under the White Witch. How can I justly punish such pitiful creatures? If, indeed, their choice has been determined by their environment, and their actions are inevitable, what form of punishment is most just?"

Aslan released a deep sigh. "Very well Peter. Summon your brother and sisters. We shall discuss this problem on the return to Cair Paravel." When they were all together, prisoners in front, Peter gave the command and all marched toward the castle.

III

"Of course," said Aslan, "before I can answer your question, we must consider a number of subsidiary issues. Insofar as we are determining the proper mode of punishment, and only indirectly touch upon the nature of justice, we cannot here discuss such questions as whether or not there is a private sphere of morality subject to criminal law. The real issue, however, is whether or not these transgressors have freedom of choice, and if so, responsibility for their actions. For this bears directly upon the kind of punishment you must assign."

"But Aslan these are creatures, not humans . . ." protested Peter.

"Son of Adam these are more than creatures," growled the Lion. "These are your subjects, and for our purposes we shall speak of them and treat them as humans."

"Very well," said Peter, "oughtn't we then to define human nature—that is, oughtn't we to define those characteristics which make a creature human or human-like?"

"As you wish," replied Aslan, "but conduct your argument in a fashion befitting a High King of Narnia. How then do you define human nature?"

"Well . . .," said Peter, "in the interests of brutal honesty I feel constrained to define human nature strictly in terms of what is observable—that is, in terms of the physiological. I suppose I would define human nature as the peculiar interaction of inorganic matter that becomes humanly organic life. . . ."

"And it seems to me," replied Aslan, "that such definition will not aid you in determining the degree of culpability one must assign these rebels, nor the appropriate punishment, regardless of its validity. Your empirical definition may be valid, but is it exhaustive? I think not. Human life is a mystery insofar as the whole of it is not simply the sum of all the physiological parts. Is love, for example, reducible to biochemical reactions? The mystery lies in the fact that the whole is a kind of production from the interaction of all the parts. In any case, reality—whether we are speaking of human nature

or history—requires different levels of description to capture its complexity. 'In the interests of brutal honesty' you have given me a scientific or empirical description of the physiological constitution of human life. But this level of description is inadequate because it provides only empirical data, and no data carry with them their own interpretation—which interpretation is necessary if we are to capture the complexity of human nature. Moreover, science can tell us only what is and not what ought to be—that is, science as methodology is not helpful in the realm of ethics, where we must decide what is right and wrong, and what human conduct merits punishment. In fact, what makes one human is the fact that one is a responsible being,[1] and this requires a level of description beyond the scientific or empirical."

IV

The children were all ears. Snowflakes drifted about them and muffled their footsteps, creating an eerie silence that accentuated the force of Aslan's words. Yet Peter was troubled. "If that is so," he inquired, "then what is 'free will'? Is it something we can observe physiologically, or does it defy description? Moreover, even if we speak of the will or mind of man as largely controlling his behavior, mightn't we conclude that the actual cells of his brain, in a material sense, and the mechanics of the way in which they operate and respond to stimuli, provide the all-sufficient explanation of how his mind works, of how he chooses, and how his personality develops?[2] In this way he would have no free will *per se* but would be mechanistically determined by his brain."

At this point Edmund, Susan, and Lucy could no longer restrain themselves. "And what about psychological determinism from our genes or from our environment?" asked Edmund.

"Or philosophical determinism," said Susan.

"Or divine providence," said Lucy.

"One at a time, please," said Aslan. "Your point is well taken, Peter, but I can turn the tables on you and argue with as much force that it is the decisions that a man makes and the things he believes which produce continual changes in the chemical composition of his brain cells.[3] One need only regard the feats of ascetics, or the successful treatment of psychosomatic illness with placebos, for proof of this. The only way to resolve the polarization between mind and body determinism is to posit the existence of a dialectical relationship between mind and body. In this sense, the individual choices cannot be explained on exclusively physical or exclusively mental, psychological, or spiritual bases. And, in fact, this is in accord with the unity and complexity of the human being as physical and other-than-physical, as I have already noted.[4] From a more theoretical standpoint we can argue against the whole notion of causality, and so determinism. For even if we should be able to read every detail of the cellular activity of a man's brain at a time when he was still in the process of making a decision, and to confidently predict what decision that man would make, our prediction would have no validity for the man unless he accepted it—at which point his cognitive processes would affect vital changes in his brain cells anyway![5] Until he ac-

cepted the prediction, he would have considered the decision indeterminate, and for him it would have been. But causality does not really apply here because decision and cellular activity coincide—they do not cause each other—and so reflect the essential unity and complexity of physical and other-than-physical. Finally, if thought is wholly determined by the random motions of atoms in the brain, we have no reason to suppose our beliefs to be true, or that the notion of mechanistic determinism of mind by the brain itself is valid!"[6]

"But even if man is not physiologically determined in his choice by cellular activity in the brain," replied Edmund, "how do you answer the assertion that man's every action is so governed by the genes he has inherited, and by those traits of character and conscious or sub-conscious motivation inbred in him by the experiences of infancy and early childhood, as well as by the peculiar social, economic or political relations he finds forced upon him by society, that he cannot in any real sense be held to be a morally responsible agent?[7] It seems to me this assertion bears directly upon our situation, insofar as these rebels have lived all their lives under the White Witch and in eternal winter. How can we legitimately hold them responsible for their actions when they are not responsible for the environment that has shaped them?"

"Have you forgotten so soon that the spell has been broken, my son?" replied Aslan. "You especially ought to know that."

V

Edmund blushed while Aslan continued. "Only the most extreme determinist would maintain that man has no control whatsoever over his actions, and that his choices are inevitable and unavoidable due to inbred tendencies and the effects of his environment upon him. There is a great difference between strict determinism and influence, between inevitability and causal determination.[8] The fact that we often consciously struggle against those strong inbred tendencies in ourselves witnesses to the great faith commitment a strict determinist must have. We are subject to many influences, within and without, which suggest but do not constrain. Granted, inbred tendencies, childhood experiences, and present environment all limit the number of alternatives which one may choose, but within those limits there is control over choice—there is freedom of choice. Indeed, we all feel such freedom in our daily lives. And because I have broken the spell of the White Witch, regardless of whether or not each person has a conscience upon which the law is written, these rebels had as one alternative obedience to me and my father. Moreover, in spite of their strong inbred tendencies, they had access to resources beyond themselves whereby they might have reformed their character had they so desired. But they did not."

"But Aslan," interrupted Susan, "it still seems to me that there is a philosophical problem here for, if, as you admit, events are in the slightest degree causally determined, why can't someone yet maintain that everything happens through immutable laws, and that there is a vast complex of interrelated causal chains behind each event?"[9]

"Again," said Aslan, "it takes an enormous faith

The children were all ears. Snowflakes drifted about them and muffled their footsteps, creating an eerie silence that accentuated the force of Aslan's words. Yet Peter was troubled. "If that is so," he inquired, "then what is 'free will'?"

commitment to believe in an absolutely closed universe and to really accept the idea that any sequence of events is wholly foreordained—and that is the position one must take as a philosophical determinist, for it would be absurd to propose that one part of the world were arranged while another was not.[10] Moreover, such philosophical determinism has difficulty locating the ultimate cause behind the panoply of causation. Many such hard determinists throw up their hands in surrender to pure chance.[11] Of course, this renders the universe utterly inscrutable and meaningless—a worldview which some embrace but which I believe goes against your experience. Of course, this raises again the problem of how valid our thoughts can be if our brain is but matter thrown up randomly. And if the ultimate cause can be said to direct or order subsequent causes, is it else but God disguised?"

Lucy had been disturbed by the conversation thus far, but couldn't quite put her finger on the problem. Suddenly, it dawned upon her what was so bothersome. "Aslan," she mused, "If god is so omniscient and sovereign, how can man have a free will and be held responsible for his actions? Don't the notions of predestination and free will contradict each other?"

"Daughter of Eve," smiled Aslan, "that is a very difficult question, but I think I might help you begin to understand. In the first place, God's omniscience is not determinative because it does not directly inform man's actions. Yet we are left with the problem of reconciling God's sovereignty with man's responsibility. You must accept the fact that God's sovereignty and man's responsibility coexist. Indeed, if you look at your holy book, the Bible, you will find this principle demonstrated throughout (Acts 2:23; Gen. 45:5)."

"But Aslan isn't that a *contradiction* in terms?" said Peter.

"No, Son of Adam. It is a *paradox*, because coexistence of the sovereignty of God and the moral responsibility of man does not equal the coexistence of no responsibility and responsibility. Again, you must realize that reality is so complex and beyond your potential for understanding that you must necessarily resort to different levels of description which may appear contradictory, in order to capture such complexity. An example of this necessity drawn from your world of science is the Complementarity Principle formulated by Niels Bohr and applied to the description of light as both particles and waves.[12] Because no one has yet succeeded in inventing a comprehensive philosophy at once credible and self-consistent,[13] and because your thought is by nature limited, the acceptance of such paradoxes is not cowardly nor lazy but necessary. And you will find them throughout your Bible. But in the unflinching pursuit of God's sovereignty and man's responsibility you will find the razor edge of your belief."[14]

"And yet it seems to me," said Peter, "that unless there is a flaw in your reasoning (which would be impossible), I must conclude that, from the start, God's sovereignty does not equal man-without-responsibility if we are to avoid logical contradiction and invalidation. But isn't that a problem of circular reasoning—that is, assuming what we are trying to prove? The only solution would seem to lie in the assertion that that is what the Bible presents and so it must be accepted on faith.'

"If it is the faith commitment that bothers you my son," said the great Lion, "you will feel quite uncomfortable wherever you turn in all honesty. For every philosophy demands some degree of faith commitment, and even the scientific-empirical methodology of investigation requires a faith commitment to rational and predictable order in the universe. But enough of this. Given our discussion so far, that just as the sovereignty of God and the moral responsibility of man coexist, so too does the soft determinism we have described and genuine-though-circumscribed free will and moral responsibility; we must conclude that, regardless of cause, man is responsible for his behavior. Now we must decide what mode of punishment is appropriate for these rebels."

VI

"How about deterrence?" asnswered Edmund.

"Or rehabilitation . . ." said Susan.

"Or retribution . . ." added Lucy.

"And just what do you mean by deterrence," Edmund?" asked Aslan.

"I mean," said Edmund, "the inhibiting effect that punishment, either actual—as in this case—or threatened will have on the actions of those who are otherwise disposed to commit crimes. Deterrence, in turn, has two aspects: after the fact inhibition of the person being punished or special deterrence; and inhibition in advance by threat and example or general deterrence.[15] Although we might not reform these rebels by punishing them after the fact, as the high rate of recidivism seems to indicate, we shall at the very least discourage further rebellion and save Narnia from further grief by making a show and example of them."

"And where is justice in all this?" asked Aslan.

"What do you mean. . . ."

"You see, Edmund," smiled Aslan, "general deterrence makes an example of offenders—that is, it makes persons means to a larger end such as the preservation of peace and order in Narnia. But that alone is not justice. Any punishment which does not treat persons as ends in themselves by punishing them according to the principle of desert is a perversion of justice, for it tramples upon the dignity of human life.[16] The heartlessness and injustice of such deterrence was well expressed by one of its most vocal advocates—Oliver Wendell Holmes—who once wrote to a friend

if I were having a philosophical talk with a man I was going to have hanged (or electrocuted) I should say, "I don't doubt that your act was inevitable for you, but to make it more avoidable by others we propose to sacrifice you to the common good. You may regard yourself as a soldier dying for your country if you like. But the law must keep its promises." I fear that the touch of sentiment that I notice in your writing will be revolted at this, but personally I feel neither doubt nor scruple . . .[17]

If in the process of punishing a person according to what he or she *deserves,* that person is made an example or means to the end of general deterrence, fine. But treating the person as an end by determining what punishment they *deserve* must come first. Without desert, the morality of punishment disappears. Moreover, if the primary aim is deterrence, it no longer matters who is punished so long as the public think that the accused is guilty."[18]

"But Aslan isn't that a contradiction in terms?" said Peter. "No, Son of Adam. It is a paradox."

VII

"What about rehabilitation then?" asked Susan. "After all, punishment may be used to prevent crime by so changing the personality of the offender that he will conform to the dictates of law—in a word by refoming him. Admittedly, such reform is by compulsion and primarily for our sakes. But it seems to me both humane and effective."

"However," said Aslan, "that presupposes the definition of crime as a disease and not as a transgression. Again, there is no justice in this because there is no principle of desert, and so no morality of punishment. The responsibility for determining what punishment is deserved is taken out of the hands of jurists, who deal with categories of rights and justice, and placed in the hands of technicians—such as penologists and psychiatrists—who are concerned only with finding an effective cure for the disease.[19] And this does not even take into account the failure of these technicians to locate an effective cure. If crime is regarded as a disease only, there is also the danger that those in administrative positions in government will abuse their powers by defining anything they dislike—including dissent—as disease and therefore subject to criminal punishment.[20] Witness Soviet Russia and its psychological 'asylums' today. Yet another consideration is that mercy has no place in rehabilitation, for mercy is expressed in pardon and one cannot pardon a disease![21] But perhaps the greatest injustice of all lies in the element of compulsion involved in rehabilitation. To be cured against the will implies a view of man as less than reasonable and responsible, weak, and determined by his environment.[22] Rehabilitation thus effects substantially the same reduction of human dignity as deterrence."

VIII

"It would seem then that retribution is the only viable form of punishment," said Lucy, "for if it is right for the wicked to be punished because they have broken the law, then the dignity of human life is maintained inasmuch as man is held responsible for his actions and receives his just deserts.[23] And because retribution operates off of the idea of desert—that is, that past conduct has merited a deprivation of freedom—such

deprivations are turned into punishments, and justice is supplied to punishment."[24]

"And yet," said Peter, "retribution seems to me at best vengeance disguised, rendered obsolete by its subjectivity and emotionalism in the face of personal experience with the causes of crime in particular cases, and an obstruction to the evolution of techniques for social control utilizing what we now know about the forces that control—or influence—human behavior."[25]

"Indeed," replied Aslan, "There is the temptation for men to engage in base vengeance, but that cannot deter us from implementing the idea of desert. Such temptations to engage in subjectivity and emotionalism must be resisted, and retribution administered with both compassion for the offender and regard for the law, above the interests of society. Man must do the best he can with the limited knowledge that he has. Mistakes are inevitable. But he cannot omit punishment on the grounds of fallibility.[26] Of course we feel especially reluctant to punish those who feel humble and repentant, but the maintenance of order in society demands that we must, for such order is in accord with the will of God.[27] As for your assertion that knowledge of the causes 'determining' crime inhibits our implementation or retribution, or that it stands in the way of our discovering techniques for social control, may I remind you that regardless of the causes of crime, man is responsible for his behavior. You must overcome your sentimentalism and accept the paradox of the coexistence of soft determinism and moral responsibility. Beyond this, there are some positive aspects of retribution. Retribution contains and reinforces both deterrence and rehabilitation: deterrence insofar as a belief in retribution is the deepest and most effective form of deterrent, and rehabilitation insofar as the first decisive step towards genuine reformation comes when a man acknowledges that his punishment is deserved.[28] And above all, retribution witnesses to the righteousness of God, to a character of unyielding justice and incomparable love, which demands that transgressors receive their just deserts."[29]

IX

"Well then," said Peter to the others, "it seems as if the question is settled. Retribution shall be the mode of punishment for these rebels." They all nodded solemnly in agreement, and for a moment their statures reflected a nobility and grace befitting the domain entrusted them. "We must now choose among a number of alternatives—fines, imprisonment, corporal or capital

Retribution contains and reinforces both deterrence and rehabilitation: deterrence insofar as a belief in retribution is the deepest and most effective form of deterrent, and rehabilitation insofar as the first decisive step towards genuine reformation comes when a person acknowledges that his punishment is deserved.

punishment—the appropriate punishment," said Peter. "Aslan, what do you think. . . ."

But turning around they saw only a curtain of black and swirling white, and four huge pawprints silently filling.

FOOTNOTES

[1]Wenham, John *The Goodness Of God*, (London: Inter-Varsity Press, 1974), p. 66.
[2]Anderson, J. N. D. *Morality, Law And Grace*, (Downers Grove: Inter-Varsity Press, 1972), p. 14.
[3]*Ibid.*, p. 15.
[4]*Ibid.*
[5]*Ibid.*, p. 17.
[6]*Ibid.*, p. 20.
[7]*Ibid.*, p. 21.
[8]*Ibid.*, p. 23.
[9]*Ibid.*, p. 28.
[10]*Ibid.*, p. 29.
[11]*Ibid.*, p. 31.
[12]Bube, Richard H. *The Human Quest*, (Waco: Word, 1971), pp. 168, 176.
[13]Wenham, p. 185.
[14]*Ibid.*
[15]Kaplan, John *Criminal Justice*, (Mineola: Foundation Press, 1973), p. 16.
[16]Lewis, C. S. "The Humanitarian Theory Of Punishment" in *God In The Dock*, (Grand Rapids: Eerdmans, 1970), p. 291.
[17]Kaplan, p. 16.
[18]Lewis, p. 291.
[19]*Ibid.*, p. 289.
[20]*Ibid.*, p. 293.
[21]*Ibid.*, p. 294.
[22]*Ibid.*, p. 292.
[23]Kaplan, p. 9.
[24]Wenham, p. 59.
[25]Kaplan, p. 11.
[26]Wenham, p. 67.
[27]*Ibid.*
[28]*Ibid.*, pp. 64, 65.
[29]*Ibid.*, p. 66.

Christian Answers on Homosexuality

Three distinguished Christian leaders agreed to respond to written questions concerning issues involved in homosexuality. Here we are pleased to share their responses with our readers. The participants, in alphabetical order, are Paul E. Larsen, S.T.D., Pastor of Peninsula Covenant Church, Redwood City, California; E. Mansell Pattison, M.D., Professor of Psychiatry and Human Behavior, Social Science and Social Ecology, and Acting Chairman of the Department of Psychiatry and Human Behavior of the University of California, Irvine; and John White, M.B., Ch.B., F.R.C.P.(C), Professor of Psychiatry and the University of Manitoba Faculty of Medicine, Winnipeg, Manitoba, Canada.

1. We see a large increase in our awareness of how many homosexuals there are. Has there been an actual increase in the fraction of the population that are homosexual (what is this fraction?) or what other factors have caused this change?

Larsen: Homosexuality appears more prominently in the public consciousness today than previously. Part of this is due to its popularity as a theme in science, medicine, psychology, and literature. The liberation of oppressed classes inevitably turns to the question of freedom for what has been previously called deviant behavior. The medical and behavioral sciences have recently tended to view homosexuality as an alternate lifestyle, rather than a deviancy. Certain homosexual behavior is sociopathic, that is, it derives from social acceptance and even advocacy within the culture. Herbert Marcuse has advocated it as a part of "polymorphic sexuality." It is seen as a revolt against the sociopolitical oppressions of our time. Certain extreme elements in existentialism and feminism have practiced it as a symbol of revolt against oppression. To this extent, homosexuality is more acceptable in contemporary society and more widely practiced than previously.

Pattison: Probably not. There are no good historical statistics, so we can only make educated inferences. It is reasonable to conclude that the incidence of homosexual character development may vary over time and place with different social child-rearing patterns, which may give rise to differences in incidence. But, this is only conjecture. The historical evidence is more available to suggest that the *practice* of homosexuality varies widely with social sanctions.

At the present time, in western society, there is increased social tolerance for public homosexual behav-

iors. Therefore, we are more aware of the presence of persons of homosexual orientation in our society.

White: Confusion may arise from lack of precise definition of the terms "homosexuality" and "homosexual". A *homosexual* is a person who has either adopted a homosexual lifestyle or who engages in homosexual avtivity from time to time. A *homosexual lifestyle* is one in which the sex object is of the same sex, and is chosen either for erotic purposes only or else for both companionship and erotic purposes. *Homosexual activity* is any activity engaged in for purposes of erotic arousal with a partner of the same sex for a sex-object.

I believe the data are insufficient to tell us conclusively whether the increase in homosexuality is real or apparent, though there can be no question that homosexuals are "coming out of the closet". Epidemiological surveys represent either biased samples (e.g. volunters such as in Kinsey and subsequent sex behaviour surveys) or are subject to unknown errors from faulty self-reporting.

2. Is it valid to distinguish between homosexuality as a "condition" as opposed to a "conduct"?

Larsen: The distinction is important and useful. It follows the traditional theological distinction between sin and original sin. The latter reflects the corruption of the biosocial heredity of man over which he or she has no responsible control. The former concerns actual conduct over which the individual has a measure of responsibility and control. An individual may have a predisposition to homosexuality. This is the fruit of original sin in

which the culpability is quite different from that of overt homosexual seduction.

Pattison: I find it both appropriate and necessary to distinguish between homosexuality as a "condition" and as a "conduct". There are numerous people who have a homosexual disposition who never engage in any type of homosexual behavior or conduct.

White: I would prefer to view homosexuality as a form of behaviour. It is true that there are conditions which may or may not be associated with it. Many people experience some degree of arousal with homosexual stimuli. The degree of such arousal can be measured objectively (e.g. by measuring small changes in penile volume in the male). However the capacity for homosexual arousal should not, in my view be called homosexuality since it may or may not be associated with homosexual practices and is frequently compatible with heterosexual adjustment. On the other hand, because of the associated "condition" (arousability) and because of reinforcement, homosexual behaviour tends to be self-perpetuating.

3. Is it meaningful to speak of an individual choosing either to become or not to become homosexual? If the answer is yes, what do we do with many cases where the individual testifies he/she became aware of their homosexual tendencies long before any awareness of choice was present?

Larsen: Overt and practicing homosexuality is the product of both voluntary and involuntary forces. Early predispositions to homosexuality tend to be involuntary. But there are certain critical moments of choice, acceptance, and acquiesence which involve true freedom. Eventually, however, this freedom is lost in the vice of habit.

Pattison: Yes and no. Like a great many of our human behaviors, homosexuality as a predisposition develops out of our earliest childhood interactions and socialization experiences. Thus, one does not "choose" to adopt a homosexual predisposition.

However, there is great plasticity in our capacity to change behaviors and dispositions which we have acquired in our childhood socialization. Even so with "choosing" whether to practice homosexuality or not to practice such.

Further, there is a current mythology, popular even in scientific circles, that one cannot deliberately change one's sexual orientation. My careful review of the experimental and observational literature reveals some curious lack of attention to available data. In his original study of male homosexuality back in 1947, Alfred Kinsey pointedly observed that there was *great plasticity* and a large degree of change in sexual orientation that naturally occurred in his population samples. Sex researchers are just now beginning to again acknowledge a significant capacity for change in sexual orientation.

It must also be noted that there are *degrees* of homosexual proclivity. Among persons with mild to moderate degrees of homosexual inclination, the capacity to change sexual orientation is high. For those persons with very intense and long fixed homosexual orientation, the probability for change is low.

Therefore, our answer is a qualified and relative one. Many more persons can significantly change their sexual orientation than has been commonly acknowledged. Yet, not all persons have the same capacity or potential for change.

White: Homosexuals do not always mean the same thing when they speak of deciding to become homosexual. Semantic confusion again raises its head. If one thinks of homosexuality exclusively as a *condition,* then decision is irrelevant. One cannot "decide" to become what he already is, any more than one can decide to have cancer. One can, however, choose a lifestyle on the basis of one's sexual feelings.

4. What is the best current understanding of the cause of homosexuality? Have genetic bases been definitely ruled out/in?

Larsen: It appears that homosexuality has a multiple etiology, that is, it may arise from a number of causes and even be a symptom of quite different problems. Some forms may have a genetic origin; some male homosexuality may result from an overly dominant mother or an overly punitive father. It can result from early homosexual seduction. It can be a part of the existential revolt against all prescribed and predetermined roles. At root it becomes the most obvious symbol of man's rejection of God's will, as Paul clearly state in Romans 1.

Pattison: As I read the evidence, I find it unequivocal, that homosexual orientation arises primarily from early socialization experiences. This may be reinforced or abated by later peer social experience. This is not to say that some genetic influence may not be delineated. But genetic factors *alone* do not determine sexual object preference. And it is quite fallacious to assume that genetics determine *behaviors,* because there is no evidence that any genetic factor alone determines any *human* behaviors. (In contrast, in animals, genetics may indeed determine specific behaviors.)

White: I know of no satisfactory etiological theory. Genetic factors have to my knowledge neither been ruled out nor established. Unusual methodological problems arise for epidemiological surveys (e.g. homosexual parents of homosexual offspring are unlikely to acknowledge their own problem). Environmental factors seem often to play a part but their precise nature and role are disputed.

5. Is there a "natural" sexual state for the human being, or are sexual preferences formed by experience in all cases?

Larsen: There is a "natural" state of sexuality for humans if by "natural" one means "in accord with God's intention". This "natural" state is heterosexual inclination, although in the New Testament celibacy seems to be a special calling evidenced by either diminished sexual inclination or successful sublimation.

Pattison: Implicit in this question is the concept of "bisexuality". The original formulation of bisexuality in early psychoanalytic theory has been discredited. A more adequate conception of sexuality must take into account eight variables.

First is a genetic sexual identiy. This is the male XY or female XX sex chromosome pattern. There are aberrant sexual chromosomal patterns such as the XXY and XXX patterns and even occasional XYY and XXXYY patterns. Despite much research, there is no clear correlation between sex chromatin patterns and adult sexual behavior.

Second is the primary gonadal sex, i.e. presence of either testes or ovaries. The degree of development of the gonads may be influenced by the sex chromatin pattern. The gonads, in turn, are a source of differing hormones.

Third is the hormonal sexual pattern. Usually, this is determined by a combination of pituitary and gonadal hormonal output. Thus, there is typically a male hormonal pattern and a femal hormonal pattern. But in cases of dysfunction of either pituitary or gonadal excretion, there may be aberrant hormonal sexual patterns at variance with the genetic and gonadal sexual identity.

Fourth are the secondary vestigial sexual organs. In embryonic development, the vestigial uterine apparatus remains as apparently useless bits of tissue in the male; while vestigial testicular structure remains in the female. Thus, in early embryonic development there is bisexual anatomic structure which is decisively resolved in embryo by the influence of genetic and hormonal factors.

Fifth is the external sex organs. Their development occurs in embryonic growth, and is primarily determined by hormonal patterns. Thus, when there is hormonal imbalance or aberration, there may be an apparent (although not real) difference between the appearance of the external genitalia and the genetic and hormonal sexual identity.

Sixth is the sex of assignment. That is, the named gender of male or female. This source of gender identity is critical to self identification and is relatively fixed in the second to third year. It is virtually impossible to change the sex of assignment after the fourth year.

Seventh is core gender identity. This is the internalized sense of sexual identity as male or female. It is acquired in the fourth to seventh years of life. This period is critical in the development of *Trans-sexuality,* that is, the person who has an acknowledged body identity of one sex, but a psychological identity as the opposite sex. This is not to be confused with homosexuality, which is an erotic attraction to the same sex.

Eighth is gender role behavior. That is, identification with the cultural norms of expected behavior of a male or female. There is great variation here. One may appropriately identify with behaviors of the opposite sex without any homosexual component, i.e. erotic attraction. On the other hand, some homosexual persons are attracted to role behavior of the opposite sex without sexual attraction—the transvestite.

In sum, the concept of sexual identity is complex. There are a series of interrelated sequences of biological, psychological, and social sequences that eventuate in a sexual identity. Sexual attraction is a *consequence* of the development of sexual identity. In turn, homosexuality is a reflection of a disturbance in the developmental sequence of sexual identity development.

White: The question of whether a "natural" sexual orientation exists is surely philosophical rather than scientific. The functional relationship between male and female sexual apparatus would suggest a "natural" orientation, provided one views survival teleologically. I would prefer to urge that at this point Christians accept a revealed purpose for sex and acknowledge science's limitations.

6. In what sense should homosexuality be regarded as (1) a condition of an individual like his height or eye color, (2) a malfunction of an individual like physical or mental disease, (3) a spiritual rebellion indicating sinful perspectives?

Larsen: The Christian perspective does not permit homosexuality to be viewed as a simple, amoral genetic variant. It is a moral, social, and often psychological malfunction with some analogy to a physical disease. The moral and spiritual wrongdoing is more obvious in homosexuality than in an inflamed appendix. But physical disorders are themselves ultimately linked to the sin of man which has led to genetic weakening, and the loss of resistance to disease.

Pattison: The condition of homosexuality is a developmental aberration in my view. However, it is not necessarily a static and irreversible aberration. In a large number of persons, I believe that homosexuality is reversible.

In contrast, the practice of homosexuality must be assessed as any other behavior in moral terms. As a Christian, I believe that the practice of homosexuality, under any condition, is sinful behavior.

White: Once again everything depends on a definition of homosexuality.

Homosexual *behaviour* is sinful behaviour.

Homosexual *feelings* represent psychosomatic malfunction in some degree.

7. Should one expect the consequence of Christian conversion on the homosexual to be transformation into a heterosexual?

Larsen: Conversion does not necessarily mean the loss of homosexual inclinations. Conversion does not necessarily mean the regeneration of lost arms and legs, the end of ill temper, heterosexual lust, or laziness. It is accompanied by the "sealing of the Spirit" which evidences a noticeable moral and spiritual change. This is but an indication of the ultimate perfection of the Christian. There may be a miraculous deliverance. Sometimes, however, homosexuality may be conquered over a longer period. At other times it remains like Jacob's limp. It is no longer practiced, but has been transcended and sublimated in Christian sainthood.

Pattison: Not necessarily. I have seen no instances where Christian conversion has somehow automatically changed sexual orientation. Quite the reverse. In my recent study of Christian ex-gays, we found that change in sexual orientation came gradually as these Christians developed a Christian way of life and developed Christian maturity.

White: Conversions I have observed have never changed homosexual orientation or feeling, though they have at times been associated with changed patterns of sexual behaviour.

8. Is there some intrinsic reason why a lifelong commitment of love between two homosexuals is impossible? If it were found to exist, should it be broken up on Christian grounds as sinful?

Larsen: The Covenantal understanding of human relationships which underlies all that the Scripture teaches makes a lifelong homosexual commitment an act of continued disobedience to God. Such a relationship is obviously preferable to homosexual promiscuity. But grand theft is preferable to armed robbery, and that does not make it an acceptable moral option. Even from a psychological perspective the rejection of one's own sexual form represents a blocking of an area of reality that can never be construed as healthy or normal.

Pattison: This question revolves around the concept of love. Love should not be confused with eroticism and lust. All of us love people without eroticism or lust— our parents, our relatives, our children, our close friends. There is no reason why "love" should not exist between persons of the same sex.

On the other hand, a life-long love commitment involves other variables. I can think of many examples of life-long love commitment which is immoral or destructive. For example, a sado-masochistic marriage may endure for many years in which the loving wife is regularly beaten by her loving husband. In parent-child incest there is long-standing intense love relationship between the partners. In these instances, the presence of mutual love does not justify the nature of the relationship.

Therefore, I find no necessary justification of an erotic relationship between homosexual partners based on the ephemeral appeal to "love". Further, I personally do not accept the concept of a Christian homosexual marriage. On moral grounds, I find this a contradiction to the normative biblical view of marriage as between man and woman.

White: I know of no intrinsic reason preventing a life-long commitment of love between two persons of the same sex. However, while both love and commitment would mitigate its sinfulness, the relationship would still be wrong.

9. Within the framework of evolution, homosexuality appears to be an aberration. Is this a valid perspective?

Larsen: Unless one is attempting to derive ethical norms from evolutionary theory, the idea has little more than *a fortiori* value. The attempt to wed evolutionary naturalism to a natural law ethic is, in my opinion, a futile exercise.

Pattison: I do not find this proposition intellectually appealing. Why appeal to evolution? It seems an unnecessary speculation beyond verification on scientific grounds. From a sociological point of view, however, I would propose that homosexuality is a social aberration that is ultimately dysfunctional to the perpetuation and maintenance of a viable society.

White: (See 6 above). There are those who would suggest that homosexuality is an evolutionary norm protecting the race from the dangers of overpopulation. As you can see, one can argue whichever way one wishes with an evolutionary model.

10. Is homosexuality something like alcoholism, i.e., a condition and a practice originally chosen, then proceeding to the situation where the original choice is lost, finally leading to a "cure" that requires total abstinence?

Larsen: The analogy is inexact. Homosexual inclination may not be originally chosen. There are inevitable critical moments of free choice as in alcoholism. Freedom is lost through reinforced habit-formation. Unlike alcoholism, total abstinence from homosexual acts is practiced not simply to avoid new habituation, but because chastity is always a Christian imperative.

Pattison: No. Quite the reverse. As one develops psychosocially, a person acquires *more* capacity to alter one's sexual object choice and is less constrained by

early socialization. Further, a cure does not involve abstinence from sexuality, but rather the capacity to respond appropriately to a heterosexual object.

However, promiscuous heterosexuality is no more morally or psychologically desirable than promiscuous homosexuality. Many homosexual persons attempt to prove they are heterosexual by engaging in heterosexual sex behavior. This is a superficial and fleeting maneuver doomed to failure. Mature heterosexuality involves the capacity to sustain a committed love relationship with one partner.

White: I believe that alcoholism and homosexuality have some common behavioural features and that probably total abstinence is the only solution for many (if not most) homosexuals. There are, however, exceptions.

11. How much relative effort should be spent by a Christian in getting a homosexual to cease homosexual practices, as compared to helping him/her develop a lifelong homosexual love relationship (if such is possible—see 8 above)?

Larsen: There is no limit to the earnest effort to be expended to the ceasing of homosexual practices. If therapy helps the client to see the importance of lifelong covenants as the only truly satisfying relationship, it may be of interim value. But to encourage a lifelong homosexual commitment would be to deny the person the chance of real healing in the biblical sense.

Pattison: This question touches on a major issue of Christian social concern at present. Because homosexuals have been ostracized and discriminated against, they experience low self-esteem. Thus, one attempt to gain self-esteem is to replace Gay is Bad, with Gay is Good. It is tempting to support this effort at self-esteem.

But, I believe this effort is misguided, for it reinforces a homosexual life style that is only half-redemptive. I strongly urge that churches actively support Christian homosexuals to totally divest themselves of the homosexual life style and gay scene.

My research data on ex-gays strongly supports our view that the Gay is Good scene is a half-hearted compromise. And it fails to open the homosexual person to participation in personal non-erotic loving relationships with persons of both sexes within the Christian Community.

What we have found is that the *major* factor producing change in homosexual orientation in a sample of ex-gays, was the healthy maturing experience of loving Christian relationships with both men and women in a Christian context, where they experienced mature love without erotic expectations, requirements, or demands.

Therefore, when the Christian community supports the Gay is Good concept, we are in fact depriving our homosexual Christian colleagues of the very opportunity for growth, maturation, and change, which is possible within the Christian community.

Finally, I find no biblical justification for the support of any type of homosexual relationship.

White: I cannot accept lifelong homosexual commitment either on moral grounds or as a practical possibility. Without the buttressing of social convention it is foredoomed to failure, but should be discouraged not because it is impractical, but because it is wrong.

12. What is the prescribed course of action for a Christian homosexual who wishes not to be a homosexual?

Larsen: A Christian homosexual must profoundly reflect on the question of Jesus to the paralyzed man, "Wilt thou be made whole?" This wish to change needs to be ritualized in some formal covenant in which there is clear accountability and opportunity for renewal within the Christian community. In many instances, the knowledge of the problem should be confined to a small but healthy community of accountability. The homosexual should then seek the counsel of a qualified and effective Christian psychotherapist. If there is no Christian therapist available, then one should be sought who believes homosexuality is a curable deviation. Heterosexual marriage must never be undertaken as a therapeutic device. The development of authentic spirituality as well as a life of broad-based interests are vital to real healing.

Pattison: Based on our experience with ex-gays, the most important factor is to provide loving experiences for homosexuals within the Christian community where they can grow in Christian maturity and learn to develop themselves as mature persons.

They should be encouraged *not* to participate in homosexual lifestyles, but to engage in manifold Christian centered activities.

They should *not* be pushed to change their sexual feelings and attractions. Rather, they should be encouraged to develop non-erotic loving relationships. Where possible, I believe that whatever change in sexual orientation will occur, will come as a *consequence* of maturing wholesome personal relationships within the Christian community.

In conclusion, I should like to state that my prior pessimistic attitude toward change in homosexual orientation has been drastically changed in the past four years as a result of my personal research on change in homosexuals who have become Christian and become active participants in supportive Christian communities.

I would like to urge our churches to openly welcome our homosexual Christian colleagues into fellowship, and provide the type of nurturant discipleship which I have observed to have such profound impact.

White: A Christian homosexual wanting *not to live as* a homosexual needs

  a) The understanding and help of a Christian experienced in the temptations and social implications of his problem.
  b) Expert assessment and advice on the advisability (in the individual's case) of behavioural methods of sexual reorientation.
  c) To accept lifelong sexual abstinence if sexual re-

orientation is not possible.

d) An entre into warm and intimate Christian fellowship, ideally of a kind that accepts him/her, for what he/she is.

Such fellowship must provide on-going emotional and spiritual support and the sense that the homosexual member is a contributor to the fellowship, and not merely a lame duck.

WINTER PAST by Nancy Anne Smith, InterVarsity Press, Downers Grove, Illinois 60515. 119 pp. $2.95.

The raging debate between Christianity and psychology is brought to the forefront as *Winter Past* causes us to ask such questions as: Can a Christian experience mental illness? Is there such a thing as mental illness? Does one need a psychotherapist for emotional problems just as one needs a medical doctor for physical problems, or is the term "mental illness" merely a cop-out for the Christian? Does the use of the term "illness" imply that the individual with an emotional problem is no more to blame than a person who contacts a contagious disease is to blame for his illness? If the blame lies outside the individual then he isn't really responsible—only a victim of circumstances. Or, are emotional problems a direct result of sinful behavior, and so more correctly labeled sin problems?

Numerous books by Christian psychologists and laymen that answer these questions are available on the bookshelves today. One will tell you there is a distinction between spiritual problems and psychological problems—one requires pastoral ministration while the other requires psychotherapy. Another authority will tell you that man's problems are the result of behavioral sin rather than emotional sickness, and that confession of sin, admission of guilt, and assumption of responsibility with the help of one trained in the Scriptures, rather than one with psychological training, should minister to the Christian's problems.

With these probing questions confronting not just the would-be Christian psychologist, but the concerned Christian who must daily face people who hurt, who face barren winters in their struggle for emotional health, we come to *Winter Past*, an autobiography of a young woman who was forced to return home from a summer missionary term because of paralysis of her legs.

The doctors labeled her problem "conversion hysteria"—physical symptoms but no identifiable organic source. A childhood of cruelty and abuse had taken its toll in Nancy Smith's life. For years the ugly past had

been repressed and ignored. Faced with the dilemma of whether to continue the practice of praying and confessing and believing that all would be well in time, or seek the help of a psychotherapist, she is encouraged by a friend to seek professional help.

Winter Past is the account of the long struggle of this young woman to face her past. Her psychotherapist believes that the past must be put in order before emotional health can be achieved. Smith believes that the beginning of victory came when, after months of psychotherapy, she was able to identify the cause of the nagging depression and hurt—her mother's death sixteen years ago. The tears that had been denied for 16 years

Books Received and Available for Review

(*Please contact the Book Review Editor if you would like to review one of these books.*)

Benjamin, Barbara, *The Impossible Community*, InterVarsity, 1978.

Dengerink, *The Idea of Justice*, Wedge, 1978.

Durka and Smith, eds. *Emerging Issues in Religious Education*, Paulist, 1978.

Duska and Whelan, *Moral Development, A Guide to Piaget and Kohlberg*, Paulist, 1978.

Halbert and Halbert, *Bitter Harvest*, Eerdmans, 1978.

Haughey, ed, *The Faith that Does Justice*, Paulist, 1977.

Maatman, *The Unity in Creation*, Dordt College Press, 1978.

Mander, *Four Arguments for the Elimination of Television*, Morrow, 1978.

Meilaender, *The Taste for the Other*, Eerdmans, 1978.

Neal, *A Social-Theology of Letting Go*, Paulist, 1978. (The Role of the First World Church Facing Third World People)

Nelson, *Don't Let Your Conscience Be Your Guide*, Paulist, 1978.

Stevens, *Making Moral Decisions*, Paulist, 1969.

Varga, *On Being Human: Principles of Ethics*, Paulist, 1978.

Yanovsky, *Medicine, Science and Life*, Paulist, 1978.

were, in the process of psychotherapy, released.

While the greater part of the book deals with the weekly sessions wih her psychotherapist, Smith also shares her struggles with other Christians. There were those who told her that her problems were sin-based, that II Timothy 1:7 attests to this—"For God hath not given us a spirit of fear, but of power and of love, and of a sound mind." The author admits that many of the Christians she knew acted like all turmoil had vanished from their lives, and that this facade began to subconsciously make her feel like God was withholding something from her. "Satan's ironic working shrouded God's love and turned church and Christians into his tools to pull me deeper into depression".

Nancy Smith freely admits that all problems are a result of the fall of man. She does feel that a distinction must be made between the guilt (which is real, and not just a feeling) from sins we commit, and the sins of others which victimize us. In her case, the latter included childhood abuse, death of both parents, beatings, and rape.

Her stand that all emotional problems not organically based are not directly related to sin sets her apart from some of the prominent Christian psychologists, such as Jay Adams. Her thinking is in line with others, such as Narramore, Lawrence Crabb, and Mildred Sall.

Criticism of the type of psychotherapy described might be that undue time was spent delving into past experiences. The author indicates that she was involved in therapy sessions for a number of years. Is the attempt to dredge up the past anti-Christian and Freudian? Philippians 3:13 says "This one thing 1 do, forgetting those things that are behind and reaching forth unto those things which are before. . . ." Is it possible that an extended period of time reliving the past was necessary before Nancy Smith could come face to face with the fact that she was angry with the Almighty Creator of heaven and earth, and that only as she recognized that this anger was blocking the flow of love between God and her was she able to experience God's limitless love? The instrument used to accomplish this was not a miraculous healing, a magic wand, but a skilled, surrendered Christian psychologist.

Whether you agree, agree in part, or totally disagree with the process whereby Nancy Smith was able to move from winter to spring, the book is both interesting and provocative, and will most likely help to move you one step ahead on the long road towards a crystallized view of the relationship between Christianity and psychotherapy.

Reviewed by Thomas L. Compton, LeTourneau College, Longview, Texas 75602.

TOWARD A HEALTHY MARRIAGE, by Bernard Harnik, Word Books, Waco, Texas, 1976, 155 pp. + Appendix, $6.95.

This book's title may be somewhat misleading in that the author dwells on marriage illnesses. It's title could have been something like, "Avoid A Sick Marriage." This book is really about what a healthy marriage is *not*. The author writes for more than 85% of the book describing emotionally disturbed spouses, sick marriages, their symptoms and diagnoses, using an anecdotal style with his case histories of his own patients. Harnik's

definition of a healthy marriage appears woefully weak: the couple's awareness that they have a good marriage.

There were very few key ideas espoused by Harnik in his anecdotes. Among them were: (1) Dialogue helps relieve tensions in a marriage of strong contrasts; but it doesn't help overcome the danger of boredom in a compatible marriage of spouses with similar interests. (Harnik doesn't back up his claims, and this reviewer would seriously question the latter one. He also makes considerable reference to his previous book, assuming the reader is familiar with it.) (2) A degree of tension is needed for maturation in a marriage. (3) Serving, instead of ruling, is the optimal style of conduct in a spouse. (This may be the principal contribution of the book and one of the few that are developed to any extent.) He presents Jesus Christ as the example of servant and quotes a few Bible passages dealing with conduct in marriage.

In general, the book is superficial and boring, although a specialist in marriage counselling or psychology may find some value in it.

Reviewed by Jerry D. Albert, Mercy Hospital Medical Research Facility, San Diego, California 92103.

A CHRISTIAN DECLARATION OF HUMAN RIGHTS edited by Allen O. Miller, William B. Eerdmans, Publishing Company, Grand Rapids, Michigan, 1977, 190 pp., paperback, $4.95.

Many Christians are uncomfortable with the concept of human rights because it is historically grounded in liberal humanism. Yet to work for human rights, as these are outlined, for example, in the 1948 United Nations International Bill of Human Rights, also seems to be a continuation of the ministry of liberation Jesus announced (Luke 4:18). The Reformed theologians whose papers are collected in this volume call for Christians to work toward the establishment of human rights, believing that human rights are derived from God's rights, from His claim on human beings.

This collection of papers grows out of the studies of the department of theology of the World Alliance of Reformed Churches, which culminated in a 1976 Conference in London. The central papers in the collection are Jürgen Moltmann's 1971 position paper, which started off the discussion, and his 1976 summary paper. Other European, Canadian, and American theologians are also represented. Third-world theologians participated in the Consultation, but the failure to include papers by non-Western Christians weakens the volume. The appendices are useful, bringing together the 1948 U.N. Declaration, the 1966 Covenants on Economic, Social and Cultural Rights and on Civil and Political Rights, and other documents.

The topic is a crucial and timely one; this book is, unfortunately, not a particularly good starting point for Christians to begin their study. The book is not a readable, systematic presentation of the issues. Nor is it a lively jumpingoff point for classroom or living-room discussions. Better for that purpose are the book of Amos, most issues of *Sojourners* mazagine, or the *Citizen's Action Guide to Human Rights,* published by the Coalition for a New Foreign and Military Policy.

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Responses to "A Call to Faithfulness"

In Journal ASA, September 1978, we reprinted on pp. 100 and 101, "A Call to Faithfulness," which argued that "Our primary allegiance to Jesus Christ and his kingdom commits us to the total abolition of nuclear weapons." The following are the total number of responses received to this publication by the stipulated deadline of November 15, 1978.

Thank you for printing "A Call to Faithfulness" in the September issue of the *Journal ASA*. It sharply states the danger of the unbelievable destructive power of the nuclear arsenals of the United States and the Soviet Union. It is a heartfelt and sincere appeal for exercise of Christian responsibility, and beginning with prayer. I have been personally moved by it.

But . . .! This morning as I had read the article, I also heard on CBS that contributions to political campaigns in our country from "single issue" groups exceed by several times contributions to build up political parties. The "Call to Faithfulness" comes more in the mode of "single issue" concern than in the context of political responsibility. It does not bother to articulate what consequences are likely and acceptable in the whole fabric of social institutions if their "single issue" of nuclear disarmament, especially in a unilateral form, were to be achieved.

My great disappointment with opposition to the American involvement in the war in Viet Nam was that reasoning of a genuine political nature so easily was overwhelmed by a spirit of single issue romanticism. Things really could be better in Southeast Asia; we really did give up one legitimate political concern for another.

All of us have something of the romantic inside of us. Romanticism has a real face in our culture (beginning with Jean Jacques Rousseau). It thinks that getting rid of burdensome institutional responsibility will release the "happy native." My prayers are with the "Call." But they are also that all of us may see the difference between prophecy and romanticism.

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The Nuclear Declaration apparently advocates unilateral disarmament by the U.S.A. which would do just the opposite to promoting universal justice and peace. It would either greatly aggravate the risk of nuclear war or, more likely, because of the spiritual and moral declension of our country, lead to progressive surrender and the ultimate establishment of a socialist one world government complete with secret police, barbarous prisons and concentration camps, torture and brainwashing, the liquidation of millions of innocent individuals, and the other terrors of Communist peace.

Freedom of religion would be abolished and the plight of the poor would be worse as universal poverty would be the lot of everybody except the commisars controlling the New World Order.

In view of the continued spread of Communism we must strengthen our defenses in order to regain military superiority. But to survive as a nation we must do much more; there must be national repentance beginning with those of us who are followers of the Lord Jesus Christ. We must repent of our selfishness, materialism, and indifference; then filled with the Holy Spirit and motivated by Christ's love, we must witness to the lost.

Compassionately we must help the poor, not relying on massive and inefficient government programs administered by faceless bureaucrats, but by sacrificial individual effort.

Our best hope of weakening the fabric of Communism and decelerating the arms race is to assist the Underground Church in Marxist lands to win souls.

The Nuclear Declaration is Fabian Socialism thinly disguised by a religious veneer.

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This brief letter is in response to the selective righteousness exhibited in "A Call To Faithfulness," a declaration of Christians who are committed to the total abolition of nuclear weapons. I am always amazed when otherwise intelligent people so selectively focus their vision that their resulting declaration becomes farcical. Such was the case in "A Call To Faithfulness."

It appears the authors have failed to realize that nuclear weapons are merely extensions of other military hardware. Christians have tended to support the killing of others by using non-nuclear weapons; why should Christians selectively protest against killing people by using nuclear weapons?

The authors state that "(nuclear) weapons are for winning, for maintaining superiority, for keeping control . . ." Don't we use non-nuclear weapons for these purposes? Haven't we always?

They call upon the church to respond "to the nuclear arms race," to "make it clear that to turn to Christ is to turn from acceptance of nuclear weapons," "to set forth to the United States government its responsibility to take . . . initiatives toward the goal of complete nuclear disarmament." Christians are admonished to resist "the nuclear arms race" and the signers of the declaration commit themselves "to non-cooperation with our country's preparations for nuclear war."

Does not this entire declaration beg the question as to the Christian responsibility toward war and killing in general? How can the authors imply that non-nuclear wars and killing are activities not worthy of Christian protest but nuclear wars and nuclear killing are?

It seems to me the biblical references they use to support their selective righteous indignation would more accurately be used to support a general righteous indignation toward all nationalistic wars and killing. After all, it doesn't seem quite consistent to interpret "Love your enemies" as meaning "You may shoot your enemies with a bow and arrow or a bazooka but you may not nuke 'em.''

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1. Between the World Wars, the Western democracies clung to the concept that disarmament in itself would bring peace. Great bodies of well-meaning people firmly believed that no arms meant no violence. So the Axis powers felt there was neither will nor capacity to enforce the peace.[1] Therefore, Japan, Italy and Germany undertook wars of aggression even though each had signed the 1929 Kellogg-Briand pact which renounced war as an instrument of national policy.[2,3]

2. In 1946, the United States' representative to the United Nations, Bernard Baruch, presented a plan to the U.N. placing atomic energy under international control. The Soviet representative, Andrei Gromyko, denounced this unilateral proposal.[4]

3. As far as the arms race is concerned, Russia tested the first thermonuclear device (1951) and the first deliverable hydrogen bomb (1953).[5]

4. Combining conversion to Christianity and a given position on nuclear arms creates a false issue. The real issue for any human, anytime, any place, is Jesus Christ, Lord and Savior.

5. We live in a fallen world; let's not kid ourselves that no arms means no violence. Look at Cambodia today. Who would wish that kind of "peace" on his worst enemy?[6]

6. Until Christ comes, there will be wars and rumors of wars, nation will rise against nation and kingdom against kingdom.[7] True peace will come only when He returns. Then men will hammer their swords into plowshares and their spears into pruning hooks.[8]

[1]Section under "World War II - The Origins," *Encyclopedia Britannica,* Encyclopedia Britannica Inc., Chicago, 1966, Vol. 23, p. 791A.

[2]*Ibid.,* Vol. 13, p. 273.

[3]Henry Fairlie, "An Idea Whose Time is Never," *The New Republic,* January 14, 1978, pp. 12-13.

[4]Lansing Lamont, *Day of Trinity,* Atheneum, N.Y., 1965, pp. 279, 280, 292. Also, in the 1950's, the U.S.S.R. blocked every multilateral attempt to control nuclear arms - usually over the inspection terms.

[5]Stanley A. Blumberg and Gwinn Owens, *Energy and Conflict, The Life and Times of Edward Teller,* G.P. Putnam's Sons, N.Y., 1976, p. 268.

[6]George McGovern has called for an international military force to invade Cambodia. "What's News - World Wide," *The Wall Street Journal,* Aug. 22, 1978, p. 1.

[7]Matthew 24:6a, 7a.

[8]Isaiah 2.

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The "Declaration" states, "Our primary allegiance to Jesus Christ and his kingdom commits us to the total abolition of nuclear weapons. There can be no qualifying or conditioning word."

"Nuclear" is a qualifying, conditioning word. Why persist in excusing the genocidal tyrants in Cambodia, parts of Africa, etc.?

Nuclear war certainly threatens us, but would Jesus be silent about Soviet tanks or "psychiatric" torture just because they aren't hurting *us?* Would germ warfare be merciful?

How nationalistic it is to limit our criticism to our nation and its allies! (The usual answer, effectiveness, is a cop-out and a misrepresentation.) Our call should indeed be to faithfulness.

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Has the nuclear nightmare robbed us of our senses? Is it to gruesome insanity or to moral evil that we should react? Nuclear stockpiles are but an insane means to a wicked end: the pursuit of power. Are we to forget the end in our obsession with the latest means?

Can nuclear arms be *morally* worse than bows and arrows? Or Nazi concentration camps? May Christians be divided about war in general but united about nuclear war? Or do we panic because humanity has run its course? If war in defense of the West is evil, it is reprehensible whether nuclear weapons are used or not. Mass murder may be *uglier* than discrete murder, but is no more detestable.

And let us be practical. If we Christians by reason of our "allegiance to Jesus Christ and his Kingdom" are committed "to the total abolition of nuclear weapons" we are committed to no small task, but one demanding exclusive attention. It is one thing vehemently to protest nuclear weapons. It is quite another to dedicate ourselves to their "total abolition."

As a Christian outside the U.S.A. I sympathize with the deep concern the Declaration expresses. I share a sense of responsibility. We cannot conceive the horror that threatens to engulf us. The question then becomes: How best shall we expend our lives in the shadow of the mushroom? Our efforts might postpone judgment but will not avert it. The damage is done now.

Let us protest ills that surround us and do what good we may. But let our main task to be call men to repentance from the power lusts that have brought our destruction about.

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Nuclear War and the Christian

On August 6, 1945, Robert Julius Oppenheimer strode down the aisle of the Los Alamos auditorium to deliver an announcement to his colleagues. As he mounted the podium, he clasped his hands above his head like a prizefighter who has won the match. Then he told them an atomic bomb had been dropped on Hiroshima that morning. Edward Teller remembers walking by a colleague who shouted to him exuberantly, "One down!"[1] On August 9th, a second bomb fell on Nagasaki, and on the 14th, the war was over. It might be interesting to know what reasons these scientists might give to justify their part in developing an atomic bomb. Was it right to develop an awesome new weapon? Oppenheimer said, "A scientist cannot hold back progress because of fears of what the world will do with his discoveries."[2] Was it right to wipe out entire cities? Hamburg had been firebombed in July and August of 1943 with results more devastating than Nagasaki.[3] Was the United States right in being at war in the first place? The Kellogg-Briand Pact, formally proclaimed on July 24, 1929, was an agreement by which every nation of the world renounced war as an instrument of national policy.[4,5] What was the right thing for Christians to do when Japan broke this international treaty and went to war with China in 1931? When Italy invaded Ethiopia in 1935? When Germany threatened war with Czechoslovakia in 1938?

Obviously the leaders of the United States thought the country was right in going to war and morally justified in developing the atomic bomb. Even Einstein, an avowed pacifist at the time, wrote the letter to Roosevelt that got the Manhattan project going.[6] But there was debate on how the bomb should be used. A group of prominent scientists headed by Dr. James Franck proposed a demonstration of the newly developed bomb on a barren island before representatives of the United Nations.[7] General George Marshall was against a surprise atomic attack on Japan and General Dwight Eisenhower abhorred the thought of the United States being the first nation to use such a weapon, especially against a nation that seemed ready to surrender.[8] After the bomb had been dropped, these voices were joined by those who had not been privy to the decision-making process. Many of the scientists, including Oppenheimer, began to have moral doubts about their actions. For some, these doubts transformed into action as they lobbied politicians for international control of the atomic bomb. This resulted in a special advisory board which gave birth to the Acheson-Lilienthal Report, a plan for placing atomic energy under international control. President Truman approved the report. Bernard Baruch presented it to the United Nations Atomic Energy Commission in the summer of 1946. According to this plan, the United Nations Atomic Development Authority would control the world's supplies of raw materials and all nuclear reactors and separation plants. Further manufacture of atomic bombs would halt and existing stockpiles would be dismantled. Thus the United States, the nation which had developed and used the atomic bomb, the sole possessor of the most powerful weapon on earth, was now proposing to give up that superiority. One month later the Soviet U.N. representative, Andrei Gromyko, unexpectedly denounced the U.S. proposal. The plan was killed, eliminated by a war-time ally. The reasoning behind Russia's veto became more apparent when a B-29 detected the fallout of a Russian atomic test in August, 1949. After a month of debating the wisdom of withholding this news from the American public, Truman announced the event. In 1950, Americans learned how the Soviets had been able to build an atomic bomb so quickly. Klaus Fuchs, a British liason

scientist, had supplied Russia all the high-level scientific data concerning the bomb, while a machinist, David Greenglass, had provided meticulous sketches of the bomb's innermost working parts.[9] The Soviets were thereby saved a time-consuming and expensive effort to determine the best way to build a bomb. Thus was a magnificent and magnaminous unilateral U.S. proposal to control nuclear weapons crushed. Has the attitude of the leadership of the Soviet Union changed since? Having vetoed control of nuclear energy when they had only potential bombs, why would they agree now that they actually have them? In Paris in 1975, former Black Panther and now Christian, Eldrige Cleaver, said: "The Russians would really prefer that the U.S. cease to exist. I came to the conclusion that they were capable of launching a surprise attack."[10] If this is true, what is the Christian response?

One of the last pieces of information Klaus Fuchs turned over to the Soviets was Edward Teller's idea for a hydrogen bomb. Things had slowed down at Los Alamos, but with the belated realization of Russian intentions, all that changed. A new arms race began with the hydrogen bomb. The conventional wisdom is that America won that race, but the actual fact, only recently declassified, is that Russia was the winner. The Soviet Union exploded the first thermonuclear device (1951) and the first deliverable hydrogen bomb (1953).[11] It was the United States which was behind and who played catch-up to Russia. After this, America did surpass the Soviets in strategic forces, but mostly because it found it could not economically match the Soviet conventional force build up in Europe. President Eisenhower chose the cheaper strategy of relying solely on nuclear weapons to defend the free world.[12] Today, with some modifications which may lower the risk of nuclear war, we have the same policy concerning Europe and the North Atlantic Treaty Organization (NATO). The Warsaw Pact forces have overwhelming conventional force superiority and so NATO may have to use tactical nuclear weapons if it expects to defeat any massed attack at this time. Thus, a policy of no first use of tactical nuclear weapons can be interpreted as offering Western Europe up for Communist take-over. Concerning strategic forces however, the U.S. has always adopted a deterrence policy which states the U.S. will not be the first to use nuclear weapons. This massive retaliation policy was effective during the era when the U.S. had overwhelming strategic superiority.

How well will the United States' nuclear weapons deter when the Soviets have strategic superiority? Will the USSR use strategic superiority to back the U.S. out of Berlin just as President Kennedy used it to back Russian missiles out of Cuba? Where is the Christian position in all this? Should Christians call for honoring all international treaty commitments, even the bad ones? Joshua made a bad treaty with the Gibeonites, but still honored it and marched all night to save them from the Amorites.[13] What should Christians do when the sentry blows the trumpet, warning that the enemy is coming? What should we do in the face of aggression?

Christians have failed in America by not providing moral leadership and teaching concerning a modern doctrine of Just War and Just Conduct. Because the Church was not providing our society with biblical guidelines on Just War, we went through national confusion during the Vietnam Conflict. First we were "right" at the start of the war, then we were "wrong" toward the end of it. Today, we find Senator George McGovern calling for an international military force to invade Cambodia.[14] It seems that the Communist leadership there has systematically murdered 2 to 3 million of the 7 million inhabitants. Was the United States "right," after all, in resisting Communist aggression in Southeast Asia? And what is the Christian's position on aggresion? What would the good Samaritan have done if he came upon the robbers on the road to Jericho in the act of beating their victim to death? I think he would have risked his life to save his neighbor, just as Abraham did in waging war to rescue Lot from the four kings. We are to resist evil. Have 20th century Christians lost their ability to discern between good and evil?

Just as we had confusion when the Church did not provide a modern doctrine of Just War, so we also find confusion concerning Just Conduct in a Just War. Christian groups have taken stands on the B-1, on nuclear weapons, and on similar issues. One of the reasons why some of the rhetoric in these stands is emotion-laden, unbiblical, and half-true is that they reflect no overall framework of Just Conduct. There has been no thought-out, comprehensive biblical position for Just Conduct of War. Until this is done, to take a stand on any position within the framework of Just Conduct is on one hand, intellectually dishonest, and on the other hand, failing to be a prophetic witness to the world. Jesus said that there will be war and rumors of war until He returns

again.[15] Given then, that there will be war, that nation will rise up against nation, what does the Christian do about it? Given that men will be killing one another in these wars, does it matter how they go about it? Until Christ returns, is "peace" just an interim period between active hostilities during which rearming occurs and there are only rumors of war? If so, who are the "peacemakers?"

Jesus said His peace was not as the world gives.[16] And is not the real enmity of this world the revolt of responsible creatures against their Creator? The sign of peace is the dove with the olive branch, but this is in the context of the flood, where a Righteous God destroyed sinful man. Therefore, true peace is right standing with God. This is obtained through accepting Jesus Christ. True peace-makers are those who help bring about this right standing with God. As far as world peace is concerned, the Bible indicates that this will occur when Jesus comes again and only then will men beat their swords into plowshares, their spears into pruning hooks, and cease to learn the art of war.[17]

Just War and Just Conduct for this century should be carefully hammered out by biblical theologians. Until such doctrines appear, I propose the following as a starting point for discussion: (1) Just War is based on just cause. Just cause involves a declaration of the wrong. The wrong can be as clear cut as a treaty violation or the more difficult to identify "international evil" (a war against a Hitler-type). The national decision-making authority must decide whether to go to war. But war must be as a last resort (only after negotiations, etc., have failed). (2) Just Conduct for the individual combatant means that he must have neither an attitude of hate toward the enemy nor one of vengeance. For the decision-making authority, only military targets should be targeted. But what is a "military target?" This is the crucial question; what constitutes a military target determines to a great extent the applicability of the "area weapons," be they biological, chemical or nuclear. World War I actually began with the old 18th century outlook, where professional armies fought it out while the mass of people watched from the sidelines. But WWI ended with the "Nation at War" outlook where the nation not only enlisted the abilities of the professional soldier, but the research of the scientist, the inventive powers and technical skill of the engineer, the manual labor of industry and the pen of the propagandist.[18] This "Nation at War" outlook has dominated man's war-thinking since WWI. In the broadest sense then, the entire nation could be considered a military target and thus chemical, thermonuclear, and some biological weapons would be justifiable. Thus, America's policy of massive nuclear retaliation appears to be based on the "Nation at War" concept. In the narrowest sense, military forces and their immediate logistics systems would be just military targets. This framework would still allow limited use of tactical chemical and nuclear weapons. So, even in the narrowest sense, tactical nuclear weapons (such as the neutron bomb)[19] could be considered legitimate, as well as all defensive weapons (including the Anti-Ballistic Missile).[20]

The above analysis and its implications may be unsettling to some and unacceptable to others, but the ultimate solution to man's killing and murdering is not by taking away guns or nuclear bombs. These solutions are based on the assumption that man's problems can be cured by controlling his environment. These treat effects, not causes. The Christian solution is not to control the external, but to change the internal. Certainly Christians should work to help people and alleviate suffering where possible. But Christianity's primary thrust in eliminating evil in the world is to eliminate it in the heart of man. Christians work toward this end by proclaiming the Good News of Jesus Christ and His redemptive work on the cross and by discipling the nations concerning the Word of God.

[1]Lansing Lamont, *Day of Trinity,* Atheneum, N.Y., 1965, p. 265.

[2]*Ibid,* p. 267.

[3]"Hamburg" and "Nagasaki," *Encylopedia Britannica,* Enclopedia Britannica Inc., Chicago, 1966, Vol. 11, p. 26 and Vol. 15, p. 1148.

[4]*Ibid,* Vol. 13, p. 273.

[5]Henry Fairlie, "An Idea Whose Time is Never," *The New Republic,* Jan. 14, 1978, pp. 12-13.

[6]Carl Sagan, "The Other World that Beckons," *The New Republic,* Sept. 16, 1978, p. 14.

[7]Lamont, *op. cit.,* p. 120.

[8]*Ibid,* p. 264.

[9]*Ibid,* pp. 279-284.

[10]K. Willenson and J. Friedman, "Old Panther With a New Purr," *Newsweek,* March 17, 1975, p. 40.

[11]Stanley A. Blumberg and Gwinn Owens, *Energy and Conflict, The Life and Times of Edward Teller,* G.P. Putnam's Sons, New York, 1976, p. 268.

[12]Bernard Brodie, *War and Politics,* The Macmillan Company, New York, 1973, p. 412.

[13]The Book of Joshua, Chapters 9 and 10.

[14]"What's News Worldwide," *The Wall Street Journal,* Aug. 22, 1978, p. 1.

[15]The Gospel of Matthew, Chapter 24.

[16]The Gospel of John, Chapter 14.

[17]The Book of Isaiah, Chapter 2.

[18]"World War I," *Encyclopedia Britannica,* Vol. 23, p. 748B.

[19]There are some who would advocate use of the neutron bomb for other than tactical use. See "A Christian Weapon?" by A. Dahlberg, a letter published in *Military Review,* October, 1978, p. 81.

[20]The Book of Deuteronomy, Chapter 20, provides some insight for biblical guidelines for just conduct.

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Deception and the Christian Psychologist

Some people say that scientists who are Christians use the same methods as secular scientists but interpret the results differently. Although this is true in many instances, it is not always the case. For instance, the use of deception in psychological research and testing, a widely accepted practice, raises both methodological and ethical problems. Christians must decide whether or not they can use deception and, if not, what alternatives are available.

McGuire (1969) pointed out that psychologists have taken for granted that the subject should be kept unaware of the purpose of the research. This ignorance is achieved by not telling the subjects about the nature of the research or by misinforming them. This is sometimes done even for such prosaic topics as psychophysics or verbal learning. Seeman (1969) found that more than 10% of the studies in general experimental psychology used deception while nearly 40% of those in personality and social psychology did so. Stricker (1967) noted that some areas of research employ deception routinely. For example, he reported that 72% of the studies in balance theory and 81% of those in conformity used deception. Some authors even discuss ways of improving deception in experimentation. As Stricker (1967) put it, "deception, *per se,* has become a prestigious methological device."

Psychologists argue that such deception is necessary in some types of research and that nothing is wrong with it as long as the subjects are dehoaxed (told the truth) before they leave the experiment. However, such deception has created a whole new set of methodological problems. Subjects do not come to an experiment completely blank, without expectations as to what is expected of them. Kelman (1967) notes that many subjects now approach the experiment with suspicion and try to figure out what the experiment is "really about"—even when they are not being deceived. As one subject put it, "Psychologists always lie!" Of course, he was exaggerating since the evidence shows they lie only from 10% to 80% of the time. Although the evidence is conflicting, some studies show that suspicious subjects behave differently than unsuspicious ones. Stricker, Messick, and Jackson (1967) found this to be true in their experiments, where about 50% of their subjects were suspicious as to the purpose of the experiment—and their subjects were high school students, not college sophomores who know even more about the ways of psychologists. As Seeman (1969) put it, "we may soon be reaching a point where we no longer have naive subjects, but only naive experimenters" (p. 1026). Although most "counts" of the frequency of deception were made in the late 1960's, Stang (1976) believes that suspicion is becoming more widespread, and he again found less conformity by suspicious subjects.

A similar situation is found in psychological testing. People taking projective tests do not know what they are revealing about

themselves by their answers. Although there is a great deal of controversy over the reliability and validity of such tests, the personality profiles arrived at by these tests can profoundly influence the direction of a person's life. They can be part of a battery of tests to have him committed to psychiatric care or to a program of special education. Persons taking personality inventories, such as the Minnesota Multiphasic Personality Inventory, do not know whether their answers will count toward the depression scale, the schizophrenic scale, the paranoia scale, and so forth.

Psychologists again argue that ignorance of the purpose of the test is necessary. If the person knew what he was revealing about himself, he would change his answers to present a more favorable picture of himself. As a result, individuals taking these tests try to guess what each answer might "really mean." They naturally believe that they are being tricked because they do not know what they are revealing about themselves. They know only that the psychologist is searching for hidden symbols and deep meanings. The psychologists are on guard because they know that the patients are on guard. Testing, like experimenting, becomes a game of which can outwit the other.

Although such methodological problems are serious, the related ethical problems are even more serious to us as Christians. Is lying a legitimate means to the end of truth? Seeman (1969) maintains that the end of any process is inexorably embedded in the means used to reach it, so that a process which uses deceptive means cannot lead to truth. Thus deception is not only not a legitimate means to truth, but not a means to truth at all. It is difficult to conceive how psychologists devoted to the search for truth can maintain that it is necessary to tell lies in that search. How can they condone deception when the discovery of truth is the basic moral imperative which is the core of their vocation?

McGuire (1969) points out that most psychologists feel some moral revulsion and embarrassment when deceiving a subject, even if they believe that the deception is in the interest of discovery of a higher truth. The widespread use of the post-experimental dehoaxings is impressive evidence of the felt ethical concern. Most psychologists maintain that such deception is permissible as long as it can be removed. After reviewing the available literature on dehoaxing, Holmes (1976) concludes that in most cases dehoaxing is an effective technique for eliminating misinformation learned by the subjects as a result of being deceived in an experiment. Although this meets the standards set in the *Ethical Principles in the Conduct of Research with Human Participants* adopted by the American Psychological Association, I do not believe it is a high enough standard for us as Christians. Since it is unethical to lie in everyday life, it should also be considered unethical to lie in an experiment. Lying is still a violation of the dignity and respect with which a person, created in the image of God, should be treated, even if that person is involved in an experiment.

The 1953 American Psychological Assocation *Code of Ethics* stated that psychologists should refuse to support unwarranted assumptions, invalid application or unjustified conclusions in using psychological tests. It also declared unethical any procedure likely to deceive a client. Stagner (1974) noted that if the code were strictly enforced, many personality measures might be outlawed completely. In recent years psychologists have questioned their measures and the answers have placed psychologists in an ethical conflict. However, rather than resolving the conflict by abandoning tests which do not meet the ethical standards, they have changed the standards. Psychologists now are not to use techniques which "fail to meet professional standards" established in particular fields. Again, I believe that, as Christians, we should abandon particular tests rather than abandoning our standards.

When searching the literature for research on deception, I found no related or synonomous terms which were consistent with a Christian worldview. *Psychological Abstracts* said, "See also cheating, malingering, faking, pathological lying." The American Psychological Association *Thesaurus of Psychological Index Terms* listed "lying, behavior disorders, cheating, confabulation, faking, malingering, and dishonesty," under "deception." I

propose that, as Christians, we do not condone the use of deception, in research or testing. When students write research proposals including deception, we should not approve them. Journals taking a Christian perspective should not publish research using deception. We should not teach testing methods based on deception.

Rather than spending our time rationalizing the use of deception and creating more elaborate schemes of deception, we should spend it developing new methodologies and perfecting existing ones which do not use deception. Kelman (1967) suggests role playing as an alternative to deception. Eisner (1977) suggests using simulations, naturalistic observation, and unobtrusive measures. Changing methodology will change the nature of psychological research, but existing methods are already questionable with the suspiciousness on the part of our subject population. Of course, this may mean that we are unable to do research in some subject areas, such as conformity or balance theory, at least until we develop adequate procedures which do not involve deception.

We should also be open and honest in our techniques of personality assessment. Although this has been repeatedly proposed, it has never been adopted by large numbers of psychologists. Kelly (1955) proposed what has come to be called the credulous attitude. He said that if you do not know what is wrong with the person, ask him—have a straightforward talk with the person in an interview situation. Wallace (1966) proposed that instead of concealing the purpose of the test, we tell the person about it. For instance, on the Thematic Apperception test, rather than just having a person tell a story about a picture, ask him to tell the sexiest, or most aggressive, or most compassionate story he can think of. McMahan (1969) describes a personality test he published in which each item was completely transparent, so that the test takers could easily tell whether or not a given response would count "against" them. Such tests, emphasizing openness, honesty, and personal encounter, are much more in keeping with a Christian perspective than are the more popular tests today.

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A Moral Analogy to the Second Law of Thermodynamics

Morality in many ways follows the second law of thermo-dynamics. To see this we must consider: the role of the sun and its relationship to chlorophyll and the physical world, the sun — Son (God) analogy, the hierarchy or moral energy gradient of human relations, the effect of allowing human relationships to run their own course, the Body of Christ—chlorophyll analogy, and the purpose of the Body of Christ.

We find on a physical basis that the spontaneous processes that are the actual events of the real world always lead to states that are less ordered, more probable and represent less information than the states in which they began. This is one statement of the Second Law of Thermodynamics. We see that if it were not for the fact that the sun expends such tremendous amounts of energy and that the chlorophyll in green plants along with some B.G. algal "capture" this energy, life on this planet could not maintain its present complexity. This high order of organization is possible only as long as energy is provided which drives the chemical reactions up the energy gradient and against the natural tendency.

In our analogy Christ (God) is the moral equivalent to the sun. Just as the sun provides energy needed to drive reactions against the natural tendency, Christ (God) provides not only the moral energy to drive human interactions against their natural tendency, but He also provides the knowledge of what the hierarchy of human relationships is (i.e. which type of relationships require the most moral energy and which type of interactions will result from natural human tendencies left unchecked). This energy He provides is the love of Christ who first loved us and the energy gradient reference is his righteousness. What then is this moral energy gradient? At the top of the scale (high moral energy end) we see such verses as Matt. 22:36-40, Luke 6:27,28 and Phil. 2:3,4. The idea here is that we should treat our fellow man in as respect-able a way as possible, giving each other as much dignity and worth as can be afforded one who is human. In other words, uplifting that part of us which we have in common with God, our image (i.e. ability to love and have dialogue, etc.). This has the effect of bridging the separation which resulted as a consequence of the fall. Therefore with this bridge of Christ's love expressed by us we see that dialogue follows bringing a sense of meaning with it to the individuals involved.

At the bottom end of the moral energy scale we see a dehumanizing phenomenon. There is no dialogue and people are looked upon as things to be used or manipulated. There is an ego-centeredness, lust of the flesh, and a "thingizing" of people. When a society maintains this level of moral energy for long it will eventually destroy itself. On an individual level we see this as a basic mistrust of others, an insecurity about the actions of others towards oneself.

We see that the high moral end of the scale is difficult to main-tain because the natural tendency is to degrade to the bottom end. This is, or course, due to the fallenness of man. The effects of this rejection of righteousness are evident in our society today. The ego-centeredness of man has lessened human dialogue, thus widening the gap between individuals, and has increased the sense of meaningless so evident today.

How then does the role of the Body of Christ fit into our situation? Just as the chlorophyll captures the electromagnetic radiation from the sun, the Body of Christ should capture the righteousness of God. It should have as its task the maintaining of right relationships between God and man and therefore between man and man. Just as chlorophyll is held together with bonds (and thereby maintains its effectiveness) the Body of Christ is held together by a bond. This bond is the love of Christ expressed by the members for one another. It is therefore evident that any weakening of this bond has the same effect as rejecting the righteousness of God (i.e. moral degraduation). As far as the role of chlorophyll in the physical world goes, it is evident that it is useful only to the extent that it participates at the base of the food chain in some primary producers. So it is with the Body of Christ. Its ability to provide moral energy is related to the extent to which it participates at the base level of human interactions. One unfor-tunate difference between the actions of the chlorophyll and the Body of Christ is that chlorophyll is at the ground level of all of the living physical world whereas the Body of Christ has too often been limited to only one aspect of human living, theology. In other words we need to see the righteousness and love of God at the ground level of every discipline. We also need to see more inter-

disciplinary dialogue. The center of this for the Christian is the Body of Christ whose members see the Body as the starting point for discussion.

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A Young Versus an Old Creation: A Reconciliation?

This controversy, between those who adhere to a literal six days for the Creation and those who accept the many evidences for a very long prehistory, continues to divide Christians long after the limitations of classical physics were recognized.

In Genesis 1, the prophet presented what seems to have become a paradox to modern man. He used a physical clock to gauge the duration of the creative stages, yet this clock (our sun) was not even in existence during most of those stages. In effect, the prophet's description of the time span for the Creation was one of comparing the pace of a vast array of prehistoric events with a later clock known to all mankind. That these prehistoric events transpired with extreme swiftness when compared to this clock of the historical period poses no paradox in 20th-century physics. A difference in speeds during the two eras relative to a reference position or a difference in gravitational fields gives rise to clocks which run differently in the different reference frames (the slower clocks exhibiting "time dilation").

Time to mankind is essentially the apprehension of successive events (i.e., an irreversible sequence called "time's arrow"), and we use physical clocks whose events seem the most periodic by which to gauge the pace of other events (the periods, of course, are not precisely identical because all clocks wear out). We can discern no underlying and uniform time which is independent of physical events—as Einstein and others pointed out when classical physics, embracing an absolute time, seemed to be falling apart. The Genesis account likewise does not imply an absolute time dissociated from physical events. Time in Genesis was clearly and repeatedly described as the disappearance and re-appearance of the sun. Moreover, the account does not speak of disjointed, instantaneous appearances of created things; rather, it speaks of a progression with an implied order and synchrony (e.g., "Let the earth bring forth . . ."). The Creation account reads as if the laws governing the whole of Creation until now were installed and upheld by the Word of God since the beginning.

For over fifty years there has been a succession of evidences pointing to a beginning for this universe (although the adherents of an eternal universe have not really given up). Light is now believed to have been a first event in the switching on of these beginnings. Also, our sun is now believed to have appeared during the last third or so of cosmic history (firm evidences on whether the earth preceded the sun, or vice versa, are not in hand). These findings are quite in accord with the prophet's assertions some thousands of years ago. Hence, we ought to display some confidence in the Genesis account by looking into time dilation in the light of astrophysical evidences; such dilation, as physicists understand the term, seems to be precisely what the prophet was so insistent about. We need not look far for significant clues and plausible mechanisms.

The popular interpretation of the observed red shift from radia-tions emitted in the universe during prehistory asserts that the universe has been expanding (reminiscent of Isaiah 42:5 "Thus saith God, the Lord, who created the heavens and stretched them out"). It is now widely held that we are retreating from an early stage of the developing universe at virtually the speed of light. That is, the cosmic background or black-body radiation now seen is related to that emitted long ago at the decoupling stage of matter and radiation, and in our frame of reference, we are departing from that era so fast that the wavelength of that radiation is red shifted or stretched very far as it slowly catches up to us. The universe is presumed to have been expanding before that era; thus, we could be extremely close to the limiting speed of light relative to time zero. By this picture, time (i.e., events) could be greatly dilated (slowed) in the historical period (or the beginning of it) when compared to the pace of events during prehistory. (This follows because dilation amounts to very little until the speed of light is closely approached and provided also that we assume the

expansion of matter achieved such close approach at about the dawn of man.) Even if a slowdown in the expansion has occurred, as some theories require, it may have taken place after mankind appeared. Alternatively, if we assume with Fred Hoyle that the red shift refers to an increase in mass with time (events) since the beginning when mass may have been zero, a gravitational stretching of time becomes plausible.

Any such scenario, however, is worth very little, being no less optional than are cosmological theories generally. The important point, aside from the fact that observations have been becoming more and more compatible with dilation schemes, is that the six-day time span can no longer be said to be disproved. It is highly unlikely that clear proof, one way or the other, will ever appear. Although the prophet's comparison of prehistoric clocks with the later clock would seem to be potentially testable, the increasing opaqueness of the universe with look-back time into prehistory ultimately becomes insurmountable (owing in part to the finite speed of light). Even the expansion itself is merely a useful paradigm and not at all proved. In a word, physical absolutes are unattainable to physical observers.

The time problem found with Genesis after the scientific revolution got underway need not have divided us beyond the point when Newton's assumption of an infinite speed for light was disproved almost a century ago. Indeed, the nearly concurrent discovery of radioactivity, which was used immediately to settle the great time debate of the 19th century in favor of a very old Creation, was not applied equally the other way. These same discoveries ushered in the measurements which demonstrated that time to us is not uniform under different conditions and, therefore, we ought not continue to suppose that all of prehistory remains precisely in the same frame of reference to any observer in any era. We now realize, given the prophet's clock comparison, that an observer living during prehistory would have noted no speed up of events; all things, including his own reactions, would have been proceeding normally and in synchrony just as they do today. But, if the same kind of clocks from these two eras (e.g., atomic or radioactive ones) could be compared side by side, the later ones should be running extremely slowly compared to the prehistoric ones according to Genesis 1. Thus, radioactive clocks and other kinds of evidences supporting a vast history for the universe in terms of sequential events are fully compatible with the six literal (sun-to-sun) days in Genesis for the total span of prehistory. Those arguing for a young Creation, then, need not feel threatened as evidences continue to mount which point to billions of years worth of events during prehistory (according to our slow clocks), nor need they embrace such extensions to Scripture as created oldness, instant vegetation etc. On the other side, there is no need for those eschewing the literal six days to supply various *ad hoc* explanations such as long gaps between the days, revelatory time, poetic time or equating the "days" with eons of time. These, understandably, were designed to preserve the Bible's credibility in the face of overwhelming evidences against the 6 days on the basis of Newton's uniform time postulate — a postulate which, somehow, remains a mindset to the large majority of the intellectual community, scientists included. It is really those on the outside who fan this and other controversies among us by applying the 19th-century view of absolute space, time, matter and motion.

The theologian and historian might help us to understand the purpose of including in Genesis this strange time span — a seemingly unnecessary message which has so bedeviled the contemporary community of believers. As scientists, however, we might dwell on how astonishing it is that an author several thousand years ago should have compared the pace of physical events with a clock which ran differently — a property of nature which awaited discovery until the 20th century.

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Possible Relationships Between Polanyi's Insights and Modern Findings in Psychology, Brain Research, and Theories of Science

To restate what I have argued before,[1] what Michael Polanyi has done is to show that scientific knowledge is not completely objective, free of all personal involvement; rather scientific knowledge has its tacit, personal component whose structure it shares with other human activities. All knowing, whether the subject area be science, philosophy, art, religion, or everyday experience, shares a common structure; acts of discovery are embedded in matrices of personal commitments which the person *indwells* in order to explore reality, thereby bringing about new knowledge. In *indwelling* such a matrix of commitments we are only tacitly and subsidiarily aware of the details of the matrix, for we focus on the whole perspective which provides the meaning for details. Such a structure of from subsidiary to focal awareness is represented as a discovery cycle and is common to many types of perceptive acts. In any act of knowing we rely on *subsidiary* details which point to the greater whole of the *focal* target. By utilizing a structure of tacit, subsidiary awareness we actually know far more than we can tell.

It is interesting to note the similiarity between Polanyi's description of the discovery process and the *perceptual* and *cognitive* cycles of Ulric Neisser.[2] Neisser's *cognitive cycle* postulates that a cognitive map, an anticipatory structure of information, is required to prepare the observer to accept certain kinds of information rather than others and thus control the activity of discovery. This *cognitive map directs exploration* which now *samples* that part of reality under study; what is now learned about *reality* in turn *modifies* the original *cognitive map*. Polanyi's model of discovery would partially agree with Neisser's if the explorer; its contents, matrix of presuppositions, subsidiarily guiding the explorer in his search of reality. Finally note that the 1-2-3 discovery cycle of Polanyi, like the *Directs-Samples-Modifies* cycle of Neisser, repeats itself; each time it does so new understanding of reality is hopefully gained.

Modern brain research[3] has found strong evidence to support the claim that the major and minor hemispheres of the brain play very different and complementary roles in their cognitive activities.

In most people the dominant hemisphere of the brain is the left hemisphere which controls the right side of the body. It is rightly called dominant because all higher functions of cognitive activity associated with speech and language originate there. The dominant hemisphere can be considered active, capable of initiating a response before and apart from what reality communicates to us. It is capable of acting in an analytic manner by breaking into parts, in this way abstracting, separating, distinguishing, and manipulating concepts. The dominant hemisphere is analytical and sequential; as a consequence it can add and subtract and carry out other computer-like operations. Summing up, it is through the dominant hemisphere that we communicate by language to others and it is in this hemisphere that verbal concepts are formulated, broken down, analyzed, and used.

In most people the minor hemisphere is the right hemisphere which controls the left side of the body. Its inability to initiate almost any speech has resulted in its being called the minor hemisphere. The minor hemisphere can be receptive with respect to reality; it reacts and responds to what reality presents to us. This hemisphere is responsible for recognition of faces, sensations, spatial orientation, and geometric perception. It possesses a pictorial and pattern sense, it creates images which it forms in a holistic manner. By holistic I mean that it connects, holds things together, unifies by wiping out boundaries, integrates, and finally, enhances visual concepts. Table 1 (Adapted from Eccles[4]) summarizes the main characteristics of the two sides of the brain.

Polanyi's central presupposition is that we know far more than we can tell; in gaining knowledge we work through and by means of a tacit dimension of our existence. Is it not possible that one component of this tacit dimension originates in the difference

TABLE 1

The Differing Roles of the Two Brain Hemispheres

DOMINANT HEMISPHERE	MINOR HEMISPHERE
Liaison to consciousness	No such Liaison
Linguistic description	Musical
Ideational Conceptual similarities	Pictorial and pattern sense Visual similarities
Analysis over time (Time flows irreversibly in one direction)	Synthesis is over time (Timelessness—no distinction is made between past, present and future)
Analysis of Detail	Holistic—images and patterns
Arithmetical and computer-like	Geometrical and spatial
Abstract	Concrete

between the dominant and minor hemispheres of the brain? The minor hemisphere with its capability for holistically seeing visual patterns and relationships is, as we have seen, basically speechless; it cannot "say" what it "sees." The dominant hemisphere can communicate by means of speech its analytic and abstractive analyses, but the minor hemisphere cannot communicate by speech most of its visual, holistic insights. So with respect to visual understanding Polanyi's insight is found to be correct: We always know far more than we can say. And visual concepts play a real role in most sciences; physics, for example, makes extensive use of vector polygons, graphs, drawing of apparatus, Minkowski geometries, Penrose diagrams, Kruskal-Szekeres diagrams, Hilbert N-dimentional spaces (with analogies being made to two and three dimensional real spaces), Feynman diagrams (with applications in field theory and statistical mechanics), crystal structures, and Brillouin zones, to name a few visual concepts of physics. Or to consider another area of science the neuropathologist James H. Austin states:

"I have been especially interested in the psychological findings that investigators in the biological sciences rely heavily on their visual imagery, insist on rational controls and share with artists many of the same styles of thinking. I usually think, at times exclusively, in visual terms. Sometimes the image is clear, sometimes murky; either may seem loosely attached to words as I talk, or to a tumble of vague thoughts. When the internal images—the thought visions—are especially clear, they preempt my conscious awareness of objects in the external world. External vision no longer registers, seems almost to be disconnected, and fades from my memory of the moment."[5]

It should be pointed out that Polanyi's concept of a tacit dimension to human existence is far more encompassing that just visual awareness, for Polanyi observes that the person seeking knowledge is immersed in a matrix of presuppositions of the culture (both the presuppositions of his profession and the general culture). The person is only tacitly aware of these presuppositions as he thinks and acts by means of them.

The assumption that science is dependent upon presuppositions from outside its narrow culture is upheld in a recent article by Victor F. Weisskopf. He states:

". . . that science itself has its roots and origins outside its own rational realm of thinking. In essence, there seems to exist a 'Goedel Theorem of Science,' which holds that science itself is only possible within a larger framework of nonscientific issues and concerns. The mathematician Goedel proved that a system of axioms can never be based on itself: in order to *decide* upon its validity, statements from outside the system must be used. In a similar manner, the activity of science is necessarily embedded in a much wider realm of human experience."[6]

The methodologies, tactics and presuppositions of science cannot be based entirely upon themselves: in order to decide upon their validity resources from outside science must be used. As an example, science often uses the criterion of some type of "simplicity" in evaluating theories; does not the justification come from the tacitly held belief that the universe is harmonious and beautiful, a view long held to be true by philosophers, religious prophets and artists? Other such beliefs that are tacitly accepted by the scientific community and come from society as a whole are:

1. "Truth can be obtained by free discussion and free inquiry."[7]

2. "Humans can recognize and share a rational and universal standard."[8]

3. If you seek the truth it will indeed set you free.

4. "The conviction of every scientist and of society as a whole that scientific truth is relevant and essential."[9]

[1] J. Neidhardt, "Personal Knowledge: An Epistemology of Discovery," *Journal of the American Scientific Affiliation,* Vol. 29, No. 3, September 1977, pp. 118-123.

J. Neidhardt, "Faith, the Unrecognized Partner of Science and Religion," *Journal of the American Scientific Affiliation,* Vol. 26, No. 3, 1974, pp. 89-96.

[2] Ulric Neisser, *Cognition and Reality,* W.H. Freeman and Company, San Francisco, 1976.

[3] John C. Eccles, "Evolution of the Brain in Relation to the Development of the Self-Conscious Mind," *Annals of the New York Academy of Sciences,* Vol. 299, 1977.

Robert E. Ornstein, *The Pyschology of Consciousness,* Viking, New York, 1972.

M.C. Wittrock and others; *The Human Brain;* Prentice-Hall, Inc; Englewood Cliffs; New Jersey; 1977.

[4] Eccles, *Ibid,* p. 175

[5] James H. Austin; *chase, chance and creativity;* Columbia University Press; 1978; p. 109.

[6] Victor M. Weisskopf, "The Frontiers and Limits of Science," *American Scientist,* Vol. 65, No. 4, 1977, p. 411.

W. Jim Neidhardt, "Science and the Cultural Meta System," *Journal of the American Scientific Affiliation,* Vol. 30, No. 2, June 1978, p. 94.

[7] Richard Gelwick, *The Way of Discovery,* Oxford University Press, New York, 1977, pp. 45-46.

[8] Gelwick, *Ibid,* pp. 45-46.

[9] Weisskopf, *Op. cit.,* p. 41.

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Letters

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A Superb Statement and Exciting Reading

As you know, I am not always in agreement with your position. I do feel, however, that the *Journal of The American Scientific Affiliation* has greatly improved under your editorship. From a position of throwing rocks at other Christians, the *Journal* has advanced to setting forth the implications of the Biblical faith for one area after another. The results are sometimes, it must be said, weak, at other times very good, and somethings exceptionally telling.

The September, 1978, *Journal* has one such article, perhaps the best ever to appear in the *Journal*. I refer to James F. Jekel's "The Coming Revolution in Health Care," a superb statement and exciting reading.

Such articles should be made available in reprints for wider circulation. I for one would welcome the opportunity to buy 100 copies of such an article for use in connection with our own work.

At any rate, I do appreciate the calibre of your editorship.

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Fed Up with Second Law Controversy

I am fed up to here with this Second Law of Thermodynamics controversy. After Prigogine won his Nobel Prize, the Institute for Creation Research published what seemed to be a very solid article showing how his research findings were either not applicable to this controversy or how they really supported the creationist's position by requiring the introduction of catalysts into closed systems to break free of the Law. Then in the September issue of the *Journal* (p. 145) Jerry Albert states, "only the unwary or uninformed would fall prey to the invalid argument that the Second Law of Thermodynamics contradicts biological evolution."

Is it not possible for intelligent, God-fearing Christians to publish an exchange and resolve this simple controversy once and for all? If the pages of this *Journal* are not deemed the proper format, I would be willing to collect essays, debate transcripts, papers, etc., assemble and edit them into a publication with the goal in mind of resolving this controversy.

Any takers?

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(Ed. - I wonder if perhaps reader McCabe may not be over optimistic as to just how simple this issue is. I fear that taking on the task of resolving it may be a fairly painful educational venture. All our best wishes!)

Surprised at Failure

Due to a postal strike here in Canada, this letter is somewhat late, and no doubt others have furnished you with the requested publication data for *Genesis & Early Man* by A.C. Custance *(Journal ASA* 30 (3), 1978, p. 143).

It does surprise me, though, that "numerous attempts" were unsuccessful in securing this information.

Any librarian would be able to find this for you from *Books in Print*. Since the price will not be noted here, and now "armed" with the name of the publisher, any reputable bookstore will have a catalogue giving this information.

Surely a "no-fail" attempt would have been to contact the reviewer!

With these suggestions, hopefully you will never need that excuse again.

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(Ed. - We note, however, with some disappointment that reader White did not supply us with the missing information! We thank her for the suggestion and can report that Genesis and Early Man by A.C. Custance was published by Zondervan, Grand Rapids, Michigan, in 1975 at $8.95. Unfortunately contacting the reviewer has turned out to be the most difficult step of all; four separate mailings to different potential addresses failed to reach him and were returned with address unknown marked by the postal service. Such is the fate of "no-fail" attempts!)

Omitted References

It has recently come to my attention that two references (present in my original draft) were accidentally omitted in my article, "Personal Knowledge: An Epistemology of Discovery," *Journal ASA* 29, 118, Sept. (1977). The references, of a general nature, were:

(a) Walter Thorson, a lecture given at Regent College, Vancouver, 1972.
(b) Walter Thorson, "The Concept of Truth in the Natural Sciences," *Themelios* 5, No. 2, 27 (1968).

I apologize for the oversight.

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Founded in 1941 out of a concern for the relationship between science and Christian faith, the **American Scientific Affiliation** is an association of men and women who have made a personal commitment of themselves and their lives to Jesus Christ as Lord and Savior, and who have made a personal commitment of themselves and their lives to a scientific description of the world. The purpose of the Affiliation is to explore any and every area relating Christian faith and science. The *Journal ASA* is one of the means by which the results of such exploration are made known for the benefit and criticism of the Christian community and of the scientific community.

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INDICES to back issues of the *Journal ASA* are published as follows: Vol. 1-15 (1949-1963), *Journal ASA* 15, 126-132 (1963); Vol. 16-19 (1964-1967), *Journal ASA* 19, 126-128 (1967); Vol. 20-22 (1968-1970), *Journal ASA* 22, 157-160 (1970); Vol. 23-25 (1971-1973), *Journal ASA* 25, 173-176 (1973); Vol. 26-28 (1974-1976), *Journal ASA* 28, 189-192 (1976). *The Journal ASA* is indexed in the CHRISTIAN PERIODICAL INDEX. Present and past issues of the *Journal ASA* are available in microfilm at nominal cost. For information write University Microfilms, Inc. 300 North Zeeb Road, Ann Arbor, Michigan 48106.

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VOLUME 31, NUMBER 1 | MARCH 1979