

JOURNAL OF THE AMERICAN SCIENTIFIC AFFILIATION



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"The fear of the Lord is the beginning of Wisdom."

Psalm 111:10

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THE PRESIDENT SPEAKS

Walking Worthy of Our Vocation

Among all the organizations that exist in today's institutionalized world, the ASA holds a unique position. Christian men of science have a membership in two communities. They alone belong both to the community of the faithful, who have committed themselves and their lives to Jesus Christ, the Incarnate Son of God, as Savior and Lord, and at the same time to the scientific community, who have committed themselves to the understanding, control, and utilization of the natural world through the scientific disciplines. It is the very uniqueness of this position that presents to

the ASA the greatest challenge for its future purposes and activity.

Today the ASA may be said to stand at the crossroads of destiny. We have existed long enough to have entered into the second generation of members. We have grown from a handful to over 1600. We have contributed both nationally and locally, through writings and speaking, to an understanding of the relationships of science and Christianity. All of these good things must not be left unsaid. And yet the ASA has remained a cloistered group, often separated from the real world of Christian faith and scientific achieve-

ment, and in many ways ingrown in upon itself. It is in the spirit of positive criticism that the following paper was presented at the annual convention of the ASA at Stanford University in 1967. Its negativism must not be interpreted so much as pessimism as it should be seen spoken in the hope that the ASA may grow to realize the full potentialities of service to God that its unique character makes possible.

The goals that are set forth in that paper will, I hope, be the subject of discussion and exploration by all the members of the ASA this year. I will do my best to see that opportunities for consideration and elaboration are carried out at all levels of the ASA. Growth into greater service will require the active and concerned participation of every member, every Fellow, every Council Member, every Commissioner, and every Board member. A broadening program will require speakers, writers, editorial workers, and the time and patience of many. It will require that the ASA be seen as a worthwhile channel of Christian service for those uniquely equipped. It will require that the ASA live up to such a challenge, so that in every way its members may walk worthy of their vocation.

The choice is fairly clear. Is the ASA to be restricted to the activity of a small religio-scientific sect,

forever fighting anew the battles of yesteryear, and speaking aloud to a constantly diminishing audience? Or is the ASA to be a fellowship of men dedicated to Christ and aware of the meaning of scientific investigation, who will pursue these relationships into the heart of the many problems that afflict the world today? Will the ASA break clear of the dry bones of arguments about creation, evolution, Adam, and the flood, and combine scientific insight with the Gospel of Jesus Christ to speak to the problems that concern today's world? It is my personal conviction that the fulness of service to Christ, faithfulness to His Word, and response to the responsibility He has given to us, requires such a new vision and a new dedication of purpose.

What is written in this editorial and in the following paper is a personal opinion. I hope that it is and will be shared and implemented by many others, but at the moment no one is responsible for them except myself. I invite your response and reactions, through your local sections, through the annual convention of 1968 at Calvin College, through letters to the Journal, and by all means by letters to me. I thank you for your concern and cooperation.

Richard H. Bube
President

THE RELATIONSHIP BETWEEN THE ASA AND THE SCIENTIFIC COMMUNITY

RICHARD H. BUBE*

Introduction

Perhaps the simplest observation that can be made about the relationship between the ASA and the scientific community is that it is virtually non-existent. The contents of this paper are based on the presupposition that a relationship should exist, and the attempt is made to suggest reasons for failure in the past and possibilities for the future. This may not be a unanimous view among the members of the ASA; there may be some who feel that no direct relationship is proper between the ASA and other scientific societies, efforts, and concerns which do not stem from Christian origins.

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This conviction, whether conscious or subconscious, may be the reason for the lack of relationship to date.

The statement that a relationship between the ASA and the scientific community is virtually non-existent means at least two things. (1) The scientific community is almost completely unaware of the existence, purpose, and potential contributions of the ASA. (2) The majority of Christian men of science regard the ASA as rather an outdated organ of a narrow doctrinal viewpoint, in spite of the fact that a small minority of hyperconservative Christians consider the ASA to be constantly on the verge of apostasy.

Purpose of the ASA

It is worthwhile initially to consider the general purposes of the ASA, to see whether these are consistent with providing relationship to the scientific com-

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munity, and to see if these purposes as stated are adequate for the future of the ASA. Each issue of the Journal of the ASA contains two statements of purpose which we may consider in addition to the official statement of purpose. Printed on the inside front cover of the June 1967 issue, to be specific, are the words:

The American Scientific Affiliation studies relationships between Christianity and science in the conviction that the frameworks of scientific knowledge and evangelical Christian faith are compatible.

Inside the back cover, it is stated:

The American Scientific Affiliation was organized in 1941 to investigate the philosophy of findings of science as they are related to Christianity and the Bible and to disseminate the results of such studies.

Finally, on the front cover of the Official Program for this 22nd Annual Convention, it is written:

A group of Christian scientific men, devoting themselves to the task of reviewing, preparing, and distributing information on the authenticity, historicity, and scientific aspects of the Holy Scriptures in order that the faith of many in Jesus Christ may be firmly established.

Note the differences in these three statements of purpose. The first calls for a general study of relationships between Christianity and science, and states the general presupposition underlying such a study. The second is more specific and refers to an investigation of the philosophy of science and a dissemination of the results. The third, and the most recent, says that the purpose of the ASA is to concern itself with the authenticity, historicity, and scientific aspects of the Bible. Certainly these three statements are not mutually exclusive, but they differ widely in the extent of the purposes of the ASA. They reflect uncertainties within the ASA of just what the purposes are.

As the basis for our discussion here, let me propose the following statement of purpose for the ASA:

The American Scientific Affiliation is an association of men 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 the scientific understanding of the world. The purpose of the Affiliation is to explore any and every area relating Christian faith and science. The results of such exploration are to be made known for comment and criticism by the Christian community and by the scientific community. Such results are also to be the basis for whatever activity may be deemed appropriate in view of the personal commitments of the members.

Admittedly this statement lacks the virtue of brevity found in the others, but it emphasizes three points that I consider essential: (1) the members of the ASA have a dual commitment to serve Christ and to understand the world, but are free within those commitments; (2) the results of the ASA should be available for comments, criticisms, and evaluations by members of both the Christian and the scientific community; and (3) the results are not to be considered necessarily as an end in themselves, but may often serve as a guide to activity and involvement by members of the ASA in the Christian and scientific communities. It may be objected that all of this is not the traditional historic purpose of the ASA. If this is true, I am proposing that this become the purpose of the ASA in the future.

The subsequent discussion may be carried out under four headings, which I have chosen to label (1) visibility, (2) fidelity, (3) communication, and (4) service.

Visibility

The ASA is not visible in the world today. It is almost unknown even among evangelical Christian men of science, and it is completely unknown to the non-Christian scientific community. This is in spite of 26 years of existence, and a membership which covers every state in the union. It is in spite of the high level of education and the positions of responsibility held by its members. In preparation for the Annual Convention of the ASA at Stanford University this year (only the second time in 22 annual conventions that the meeting has been held at a non-church-related institution), I had occasion to speak with the Religion Editor of the Palo Alto Times. "How is it possible," he asked, "that the ASA could have existed for 26 years? I have served on religion pages of papers all over the country, and I have never heard of it!"

An association like ASA becomes visible if it (1) has something to say, (2) says it, and (3) does something about it. I assume that all members of ASA are agreed that it has something to say. But the record shows that the ASA has been largely silent and inactive, except in very narrowly defined areas. In 26 years of existence, the Affiliation has produced 2 books— with a time interval between them of 11 years! It has now been 7 years since a single book has been published under the sponsorship of the ASA. And this in a period when books on science and religion have enjoyed a new popularity.

The ASA is in urgent need of a comprehensive and unrestricted program of encouraging the publication of helpful studies of all types by its members. Sponsorship by the ASA should insure that the author is publicly committed to Christ, actively committed to science, in accord with the basic purposes of ASA, and able to prepare a manuscript with scientific and religious integrity. But the ASA should not attempt to serve as public defender of the faith, exercising editorial censorship on publications sponsored by the ASA to make sure that they follow a prescribed doctrinal pattern. Nor should the ASA stifle creative contributions by insisting that the "equal time" principle for conflicting viewpoints be made a pre-requisite for publication. If Christianity is true, open discussion can only assure its proper understanding. A point of view that must be coddled and protected is never one likely to be regarded with respect by the scientific community.

The ASA is also in need of much more comprehensive public relations activity. Of course, such public relations are difficult to foster when the actual activity and accomplishments of the ASA are hard to pinpoint. A vital publication program producing 5 meaty books a year would do more for public relations than all the contrived attempts to produce publicity for ASA imaginable. Nevertheless, a more vital program by each of the local Sections of the ASA, a greater par-

ticipation of ASA members in areas relevant to the ASA in Christian and scientific communities, and a greater sensitivity toward legitimate channels of publicity when opportunities do arise, are all needed to make the ASA visible enough to the scientific community so that relations can begin.

Fidelity

The ASA has the responsibility of exhibiting a double fidelity: (1) to Jesus Christ, and (2) to scientific integrity. Only by being faithful in both ways can the ASA arrive at a position of mutual understanding with the scientific community.

For the ASA to be unfaithful to its commitment to scientific integrity is as disastrous with respect to relations with the scientific community, as would be its infidelity to Christ with respect to its basic purposes and goals. This means that the ASA must diligently avoid every semblance of complicity with pseudo-science. Any attempt to use shoddy science or to masquerade religious speculation as science, will immediately alienate the scientific community. On the positive side, the ASA has the opportunity of insisting that the scientific community remain faithful on its part to scientific integrity in its pronouncements in areas touching on Christian faith and its implications.

The necessity for fidelity to scientific integrity by the ASA is the reason for the phrase in my proposed statement of ASA purpose, "and who have made a personal commitment of themselves and their lives to the scientific understanding of the world." The statement of faith which all members are required to sign might well have added to it,

The scientific approach is capable of giving reliable information about the natural world.

For any meaningful relations with the scientific community, the ASA must be committed to the validity of science as a means of understanding the natural world. This means that science can never be regarded as a poor second-rank crutch to be fallen back on only in those areas where Biblical revelation is absent. Indeed, in those areas where it is appropriate, science must be accorded the role of valid aid in interpreting the Biblical revelation. Anyone who doubts the intrinsic ability of science to provide trustworthy answers in the realm of the natural world is in no position to have relations with the scientific community. Again on the positive side, the ASA has the opportunity of insisting that the scientific community keep a sharp line of distinction between the scientific findings themselves and the non-scientific interpretations and extensions of these findings.

Communication

Relationships cannot exist where there is no communication. Such communication via printed materials: books, journals, articles etc., would be a helpful beginning, but the basic need is for interpersonal discussion and discourse.

Hopefully communication on the individual to individual level is in progress between ASA members and their colleagues in the scientific community. But I would guess from personal experience that it is probably largely sporadic, diffuse, and little differentiated from the normal witnessing of any Christian.

At the group to group level, or joint conference experience, the ASA has remained almost completely aloof from the scientific community. Joint conferences of the ASA have been restricted to evangelical Christian groups such as Inter-Varsity Christian Fellowship and the Evangelical Theological Society (extremely useful meetings for relationships between the ASA and the Christian community), and it is only at the present time that association of the ASA with a national scientific group like the AAAS is about to become a reality.

If the ASA has something worthwhile to say to the scientific community, there is an urgent need for providing means for initiating discourse. This can be done partly by the wider participation of ASA members in the conferences of the scientific community in areas of mutual concern. A viable supplement is to extend invitations to members of the scientific community to participate in conferences of the ASA. Local and national conventions of the ASA could assume more the aspect of a forum for discussion on chosen topics between Christian and non-Christian members of the scientific community, not so much in the spirit of debate as in the spirit of mutual understanding and inquiry. One result might be that the image of the ASA as a group might become one of men with strong convictions and open inquiring minds, rather than one of men concerned primarily with protecting and safeguarding conclusions already ultimately defined.

Communication could also be facilitated by planning major joint conferences with appropriate societies in the general scientific community. It is true that the presuppositions of the ASA are not those of the non-Christian scientist, but if this really means that no meaningful communication can occur, then it also means that no relationships can be formed.

Service

If relationship between the ASA and the scientific community is to be improved, a broader concept of ASA service is needed. There is a need to go beyond discussion of theological abstractions of concern to only a minority of Christians, to a treatment of those vital problems of existence in the world today that must by their very universal nature be of concern to non-Christians and Christians alike, and for which treatment the Christian has a unique contribution to make. Persistent and repeated focus of attention on details of abstract doctrine can only foster the appearance of irrelevance in a world that is in urgent need of the most elementary spiritual, psychological, and sociological enlightenment. There is a need to go beyond the "talk" situation, into actual participation in relevant activities of service.

Although it is the purpose of the ASA to evangelize scientists, instruct Christians about the nature of sci-

ence, and give scientific support and guidance to methods of evangelism by the church, these are not the only purposes of the ASA. In the broadest sense, it must be the purpose of ASA to enter into every area of consideration involving a proper understanding of science and a Christian world view. Evangelism is intrinsically the task of the church; there is no need for the ASA to exist separately unless its purposes are different.

In a paper entitled, "Relating Modern Science and Technology to Humanitarian Purposes," (JASA 17, 109 (1965), R. H. Dyck appeals for increased emphasis within the ASA on a direct involvement in the needs of the people of the world. He cites such pressing problems as the population explosion in underdeveloped countries and the problem of unemployment and enforced leisure as a result of automation. He gives as an example the activities of groups like the Federation of American Scientists in the areas of disarmament, the test ban, and freedom for foreign travel among scientists. He points to the Bulletin of the Atomic Scientists as another product of moral concern by men of science. He urges, in effect, that Christian men of science realize that they have a calling to service within the domains of their own fields and competence which is an opportunity for Christian love in action. Making "ac-

tions speak louder than words" is a direct way of implementing relationships with the concerned scientific community.

Conclusions

The principal points of this paper are the following.

1. The ASA should be in relationship with the scientific community, but in fact is not.
2. The purposes of the ASA must be intentionally broadened and more clearly stated.
3. ASA needs a vital program of publication without protective censorship.
4. Opportunities for public relations should be utilized.
5. ASA must avoid all pseudo-science.
6. ASA must affirm clearly the validity of scientific endeavor in understanding the natural world.
7. ASA must cultivate associations with other Christians and non-Christian groups with related concerns.
8. ASA needs to extend itself beyond the activities of a "talk" group on theological abstractions to consider the vital problems of today.
9. ASA needs to seek ways of useful involvement in the needs of the world as a manifestation of Christian love in action.

AN ETHNOLOGICAL STUDY OF GLOSSALALIA

GEORGE J. JENNINGS*

The common Christian interpretation of glossolalia is that it is a gift to the believer accompanying the baptism of the Holy Spirit, hence it is a spiritual charisma as is prophecy and healing. Glossolalic occurrences in church history have been sporadic and relatively insignificant to major developments in Christendom and there is disagreement among scholars as to the nature and forms of the phenomenon. This study reflects psychological influence but the central effort is to apply ethnological analysis to glossolalia by reference to its occurrence among non-Christian cultures. This cross-cultural approach offers evidence that speaking in tongues is associated with varying degrees of personality inequilibrium. An

examination of ethnographic data enables the anthropologist to identify such forms of glossolalia as (1) the language of spirits, (2) sacerdotal language, (3) the language of animals, (4) phonations frustes (gibberish or nonsense syllables), (5) xenoglossia (speaking in foreign tongues), and (6) ermeneglossia (the interpretation of tongues). An opinion is expressed that the success of glossolalia in contemporary Western culture is due to the increment of anxiety syndromes characterizing Western man.

An ethnological analysis of glossolalia may provide additional insights into a phenomenon characteristic of one of the major religious movements in the present century (*Time*, July 28, 1967, p. 64). The "speaking in tongues" phenomenon is unusually significant to the student of society and culture because it provides observable behavioral reactions and adjustments in the

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structure and functioning of the subculture where the phenomenon occurs. The purpose of this paper is to describe, with some analysis, selected features of glossolalia as an integral part of the charismatic revival in order to compare these characteristics with similar ones in non-Christian cultures with the hope to increase cognizance of an emotional exhibition largely neglected in anthropological study.

Theologians, historians, linguists, behavioral scientists, and other scholars have considered glossolalia from the viewpoint characteristic of their respective disciplines with the objective to explain the cause, meaning, and significance of this phenomenon to the individual, his sodalities, his religion, and the larger cultural context. Since the ethnological approach is employed in this study, the primary task will be to apply cross-cultural data to glossolalic episodes with the awareness that we may appear to minimize insights provided by other disciplines. Ethnology is essentially an analysis of human behavior to discover the similarities and differences represented in various cultures in order to attain greater accuracy in conclusions and generalizations about man.

Perhaps it is appropriate to note at the outset that most scholars engaged in studying comparative religion pay slight attention to glossolalia. In this present study no attempt was made to survey all standard works treating the important religions of mankind, but a glance through a representative sampling of standard texts available for courses in comparative religion reveals the fact that few authors mention, much less examine, the tongues phenomenon (e.g., Archer and Purinton, 1958; Burt, 1957; Dye and Forthman, 1967; Ferm, 1958; Lessa and Vogt, 1965; Lyon, 1957; Middleton, 1967; Noss, 1963; Potter, 1954; Smith, 1958; Soper, 1951; and Wallace, 1966). The sole conclusion admissible based on this omission is that the tongues occurrence is not considered vital in religious beliefs and rituals at present nor has it been in the history of religions.

Despite this omission and conclusion, it is an assumption in this paper that glossolalia is important for investigation because it involves the emotional component in unusual overt demonstration in religious context. This first assumption is related to the basic opinion that these ecstatic states accompanied by unusual forms of vocalization are genuine and do occur as actual experiences in spiritual exaltation. This author does not overlook the fact that some cases of glossolalia undoubtedly are fraudulent arising out of the desire of some individuals to identify with groups exerting considerable pressure for conformance to a proscribed pattern of behavior. At this point the author readily admits that he is not a glossolalist and has never sought the experience. Hence as a non-participant, he cannot present glossolalia with the intense ethos of a practitioner, but conversely he maintains greater objectivity by non-involvement for he can view speaking in tongues with dispassionate interest, a position not probable for the advocate of the experience.

One other assumption may be mentioned. There is

no doubt in the author's mind that glossolalia has been, and continues to be, associated with dramatic alterations in patterns of behavior whereby the participants manifest greater conformance to the moral and ethical code outlined by religious leaders. The emphasis upon tongues in what has been called "The Charismatic Revival" (Bloesch, 1966; Gerlach, 1967) has not only produced the so-called "separated life," but has imbued a new vitality in many churches with devoted activity among clergymen and laity.

The classic examination of glossolalia in English seems to be Cutten's *Speaking With Tongues* (1927). Although written forty years ago, subsequent objective studies have followed with various modifications Cutten's basic outline and line of reasoning (e.g., Kelsey, 1964; and Gromacki, 1967). As an ethnologist, the author thinks it unfortunate that Cutten, and those under his influence, confines his attention primarily to the tongues phenomena within the Western world in general and Christianity in particular. Cutten's pattern in writing includes a consideration of the Biblical basis for the occurrence of glossolalia with some exposition of the New Testament statements from Acts (2:4-21; 10:44-46; 19:6) and First Corinthians (12:10-30; 13:1, 8; 14:1-39). There is also comment on the reference to speaking "with new tongues" in Mark 16:17 but textual critics are disagreed about the authenticity of Mark 16:9-20 so many scholars disregard the Mark reference in their Biblical expositions on tongues. Some glossolalists seek to expand scriptural support for their views by including such statements as Ephesians 5:18-19 ("And do not get drunk with wine, for that is debauchery; but be filled with the Spirit, addressing one another in psalms and hymns and spiritual songs singing and making melody to the Lord with all your hearts" RSV); Colossians 3:16 ("Let the word of Christ dwell in you richly, as you teach and admonish one another in all wisdom, and as you sing psalms and hymns and spiritual songs with thankfulness in your hearts to God" RSV); and First Thessalonians 5:19-20 ("Do not quench the Spirit, do not despise prophesying" RSV). Without an attempt in detailed and critical exegesis of these latter references, the author accepts the opinion of several commentators that these statements do not sustain glossolalic contentions.

A survey of various commentators reveals disagreement in expositions of Luke's Pentecostal description in Acts and Paul's specifications to the Corinthians. Some conclude that Luke's historical comments in Acts are to xenoglossia or the miraculous ability to speak foreign languages without learning. In contrast Paul addresses himself to vocalizations having no correspondence with any human language when he writes to the Corinthians. Other Biblical scholars reject this interpretation by insisting there are no unknown or unused languages in either Luke or Paul's discourses but all references are cases of xenoglossia. This unresolved problem represented in contrasting exegesis has diffused among glossolalists with some maintaining that their vocalizations are of some language spoken elsewhere in the world, but many others hold that their

utterances are a "spiritual" language unknown to mankind but nevertheless is susceptible to interpretation by someone with such a divine gift.

In a recent analysis Gromacki asserts that glossolalia in Acts refers to the introduction of the Holy Spirit to four different classes of people (1967:107). He contends that each of the four cases is unique and therefore cannot provide a pattern for subsequent Christian experiences because these once only events are recorded in a narrative basically transitional in character. Consistent with such reasoning, Gromacki discloses his belief that the purpose of speaking in tongues among the Corinthians was for the establishment of immature Christians, but once the church attained greater stability and the scriptural revelation was formally complete, the practice became superfluous and no longer was included in the charismata (1967:118-119). The weakness of this view is that it does not resolve the problem of sporadic occurrences of glossolalia reported in church history to say nothing of the phenomenal spread of the practice in the present century.

Kelsey with perception and sympathy follows Cutten by first scrutinizing New Testament statements and then attends the phenomenon in church history following the apostolic period (1964). In a chapter entitled "A Peculiar History," Kelsey summarizes various reported cases in Christendom during the two millennial interval. He discovers that church fathers including illustrious names like Irenaeus, Tertullian, Chrysostom, and Augustine do not elucidate with clarification in their slight attention to glossolalia, and in their rare comments on the subject they reveal uncertainty as to detail and importance. Thus Chrysostom in the fourth century expressed his puzzlement by maintaining that the Corinthian references are "exceedingly obscure and the obscurity is occasioned by our ignorance of the facts and the cessation of happenings which were common in those days but unexampled in our own" (quoted by Farrell, 1963:5). Such evidence forces Kelsey to conclude that:

From the time of Origen, the brilliant Christian philosopher who taught and wrote in Alexandria in the middle of the third century, the fathers did not seem to recognize that tongue speaking had ever been a common practice. Indeed from then on most of the references to tongues are explanations as to why the phenomena which had occurred in Biblical times were no longer occurring (1964:39).

When the church divided into eastern and western segments, the church in the West developed a practical, authoritative, extroverted form of Christianity where the charismata of the church, including tongues, were minimized and opportunity for individual enthusiasm and overt expression was suppressed. In contrast the eastern church encouraged a mystical, individualistic, otherworldly, introverted form of Christianity wherein the gifts of the Spirit flourished and tongues were not frowned upon. Despite freedom for its exercise, glossolalia never assumed the significant role that occurs among its practitioners today, nor did they suggest that tongues were vital for spiritual development among Corinthian Christians.

Following the Reformation glossolalia appeared sporadically in Europe, in some cases among persecuted groups, and eventually appeared in America especially in frontier revivals. The Quakers, Irvingites, Shakers, Mormons, and others are reported to have experienced glossolalia and favored the phenomenon in their doctrinal publications. In the total of religious characteristics, speaking in tongues remained inconsequential by confinement to minority groups and sects; it is with the present emergence of Pentecostal and Holiness churches that glossolalia has become widespread with invasion in older mainline denominations.

It seems reasonable to conclude that glossolalia has not been a predominant factor in the diffusion and maintenance of Christianity. The advocates of its practice seem to exaggerate its historical infrequencies in their effort to identify it with rejuvenation, major thrusts, and critical movements within the church. Examples of unfounded enthusiasm for the historical role of glossolalia include Carroll, in a resume of tongues from the apostolic period to the Reformation (1966:69-94, and Hargrave in his historical analysis of post-Reformation events (1966:97-139).

The explanation for glossolalic behavior varies because its cause is viewed by those representing different degrees of advocacy and scholarly competence. Those who claim the gift and participate in contemporary movements propose a theological explanation in which the phenomenon is viewed as a mysterious and "spiritual" episode accompanying the baptism or gift of the Holy Spirit. Commonly the glossolalists, including the Neo-Pentecostals, contend that the Holy Spirit's indwelling by "baptism" is an event distinctly subsequent to the individual's conversion. According to one publication: "For once we have accepted the Lord Jesus Christ, there is a further step which is necessary to receive the full promise of God, and that is the acceptance of the Gift of the Holy Spirit" (*Why Tongues?*, p. 2). The evidence of the Gift and the presence of the Holy Spirit is speaking in tongues. In the words of a convert's testimony: "The Baptism of the Holy Spirit, with speaking in tongues, is God's second great Gift, following the first Gift of salvation. The second Gift enables us to more fully appreciate the first Gift and provides a language with which to more fully express that appreciation!" (Bloesch, 1966:375).

It is explicit from these interpretations that glossolalia stems from a mystical relationship to God for it is a miraculous demonstration of the Holy Spirit's presence and influence. The ethnologist identifies this relationship as a form of possession to which attention will be directed later in this paper. It is tempting to digress by arguing against this mystical opinion and the theological interpretation upon which it rests but such digression exceeds the scope of the present study and the interpretation has already been refuted by Beare (1964), Bloesch (1966), Gromacki (1967), Hoekema (1966), and others.

In his brief article entitled "Divine or Devilish?", Edman (1964) suggests that tongues may be attributed to one of three causes: demonic possession or con-

trol of the person by the devil, a genuine gift of the Holy Spirit, or it is behavior psychologically induced. A similar categorization of possible causes had been proposed earlier by Hitt (1963:15). Hitt's similar explanations are: (1) speaking in tongues is a divine manifestation as the Pentecostals and Neo-Pentecostals contend; (2) the remarkable ecstatic vocalization "is of the Devil" (Hitt qualifies this cause with the comment that, while Satan seeks to counterfeit spiritual behavior, not all glossolalic occurrences are to be attributed to him); and (3) glossolalia is a psychological manifestation within the context of divine superintendence.

Edman and Hitt concur in their opinion that demonic influence may account for some cases but for the most part this source of inducement may be disregarded. Later in this paper references to glossolalic manifestations among non-Christians may resemble some Christian's charismatic utterances which observers attribute to demonic possession, but this writer confesses to skepticism when he rejects such interpretation in all the reported cases. Of course the fundamental question that emerges in considering causes of glossolalia is posed by advocates: Why don't you seek the gift of the Spirit and enjoy the joy of speaking in tongues to be experientially convinced that it is a "spiritual" accession in accord with New Testament precedent? While sympathetically respecting this earnest desire in recruitment, the author prefers Edman and Hitt's third option as causative. That is I assume glossolalia is and has been most commonly a psychologically induced activity not confined to a Christian or Biblical context.

Psychologists studying glossolalia are virtually unanimous in describing the phenomenon as ecstatic vocalization of sounds which do not, for the most part, constitute genuine language. The glossolalist enters a state of emotional exaltation in which, with individual variation and diverse environment, his behavior is symptomatic of somnambulism, hypnotism, catalepsy, or hysteria. Cutten (1927:3) argues that glossolalists experience an emotional state in which the conscious ceases to function and the subconscious emerges to control overt behavior. A related explanation is offered by Lapsley and Simpson (1964b) who postulate that the phenomenon is a dissociative expression of truncated personality development which enables guilt and anxiety laden individuals to transcend personality instability.

Serious investigation by competent scholars is now beginning to provide sound bases for asserting that glossolalists represent varying degrees of personality abnormality. Thus Wood (1965) employed projective techniques to supplement observation of Pentecostals in the American South. He has expressed his conclusions in a summary of fifteen hypotheses rather than factual statements because he admits the interpretation of his Rorschach protocols may be diverse. Wood's "hypotheses" include the following insights:

Pentecostal people are mobilizing their inner resources to meet the strongly felt threat of instability in their

value-attitude systems and their social relationships; they are in the process of reorganizing their basic perceptual patterns.

Pentecostal people have an uncommon degree of uncertainty concerning interpersonal relationships.

Pentecostalism attracts uncertain, threatened, inadequately organized persons with strong motivation to reach a state of satisfactory interpersonal relatedness and personal integrity.

Pentecostalism provides patterns of behavior leading to personality integration, interpersonal relatedness and certainty.

Emotionally intense religious experience is connected in an important way with the process of personality reorientation.

Religious enthusiasm is one solution to socio-cultural situations in which cases of personality disorganization are widespread (1965:93-96).

These excerpts from Wood's findings are in general agreement with other research efforts that see Pentecostal enthusiasm as a prominent characteristic of emotionally unstable people with a high susceptibility to psychologically induced ecstatic vocalization. This conclusion has been challenged by some writers who report glossolalia devoid of apparent evidence of emotionalism or aberrant mental states (Kelsey, 1964:143-148). A recent study conducted by anthropologists at the University of Minnesota among Pentecostal and Neo-Pentecostal groups who emphasize tongues led the anthropologists to conclude that many of the active participants are not psychologically disadvantaged (Gerlach, et. al., 1967). A pattern of normalcy seems evident in their sample of urban Twin Cities people with their sample representing a cross section of socioeconomic classes. To buttress their conclusion, Gerlach, the leader of the study, communicated with Stanley Plog in the Department of Psychiatry at the University of California in Los Angeles. Dr. Plog is engaged likewise in studying groups associated with the tongues movement and he reported to Gerlach that his psychological testing uncovered little psychological abnormality among Neo-Pentecostals in California (Gerlach, et. al., 1967:11-12).

These preliminary findings notwithstanding, most scholars and observers maintain that glossolalists are usually characterized with some personality deficiency. Admittedly the Neo-Pentecostals do not resort to excesses which have featured holiness movements and revivals where frenzied and orgiastic behavior accompanies speaking in tongues and "healing" (Wood, 1965:11-17). According to Lapsley and Simpson (1964b), a study conducted by Vivier demonstrates that Pentecostals prone to tongues exhibit greater anxiety and personality instability than non-Pentecostals possessing a similar socio-economic classification. Pursuing his research in South Africa, Vivier discovered that Pentecostals practicing glossolalia tended to come from much more disturbed domestic circumstances than did Pentecostals not claiming the gift of tongues. Unfortunately I did not have access to Vivier's dissertation for personal evaluation, but it has been critically examined by several scholars. Kelsey has consulted the study and points out that Vivier interprets the tongues experience on the basis of Jungian theory (1964:204-

205). Kelsey emphasizes that Vivier accepts Jung's "collective unconscious" as the basis for the historical occurrences, the personal histories, and the religious attitudes identified with tongues speaking. "Glossolalia, he (Vivier) concludes, can be understood psychologically on the basis of strong convictions of the tongue speaking group and the strong association of thought and language."

Finch, a practicing psychologist, reports a case study of an emotionally disturbed patient who confessed to having received the gift of the Holy Spirit without the ability to speak in tongues (1964). This patient attempted, in an advanced state of frustration, to relate to ultimate reality which, as Finch believes, is God, the ground of all reality. The vital religious experience, continues Finch, provides an answer to prevent man from seeking ultimate reality in self. In certain respects the would-be glossolalist shares the desire of a Hindu who attempts to find himself enveloped by reality which in Hinduism is to merge by complete assimilation into the universal *atmen*. This mergence, Finch proceeds to explain, is accomplished by removing one's self from all *maya* or illusions of this physical life by mystical contemplation and degrees of mental inertia. Finch sees a like process at play among those who experiment with hallucinatory drugs and similar attempts—all phenomenological evidence that the individual is seeking to ground himself in the Other that created him.

This bit of metaphysical parenthesis is relevant to our study because, psychologically, glossolalia may be placed in the same category since some people with certain personality configurations are so constituted that they yearn to be vehicles of the supernatural. Glossolalia fulfills this intense yearning. Mystical religious experiences have been used as a defense against reality with potential danger to the emotional equilibrium of the individual. One of Finch's patients demonstrated the unfortunate process by attempting to substitute ecstatic experiences for personal effort. The patient expected God to magically enable him to play the piano but when this was not realized, he sought by the same means skill as a vocalist with like failure. Finch's words are quite effective in relating the tragic consequences: "The subject seemed to progress from infantilism and extreme dependency feelings to an hysterical attempt to hold together his shattering ego by a frantic leap to glossolalia (in this case a hysterical symptom). When the symptom could not carry the weight of the attempt, it splintered into schizophrenia. Eventually he had to be committed to a mental hospital." (1964:13). (Incidentally, Finch once offered to administer psychological tests to one hundred members in a church where glossolalia was practiced, but his offer was declined.)

If glossolalia may be considered ecstatic vocalization of known or unknown patterns of sounds stemming from an emotional state, it is evident that the phenomenon is not unique to Christian groups. That bizarre utterances occur in non-Christian cultures emphasizes the fact

that the practice is not self-authenticating. It is in the awareness of its cross-cultural appearance that the ethnologist may provide additional understanding of it. The ethnologist traditionally devotes his efforts to an analysis of human behavior derived from as great a sample of different cultures as possible in order to reveal the range of differences as well as to discover basic similarities. This effort is predicated on the belief that generalizations concerning man's behavior should not be offered until a representative sample from many cultures is considered.

Ethnocentrism is a problem in the cross-cultural study of glossolalia as it is in any investigation of cultural features possessing affective values of the people's ethos. Ethnocentrism may be defined as "the excessive centering of ideas and values around those of one's own culture so that the customs of people of different culture are depreciated and regarded as amusing, ridiculous, inferior, unworthy of serious consideration, immoral, or animal-like" (Norbeck, 1961:7). The ethnocentric glossolalist in Christianity insists that his experience is unique for it is a charisma received from the Holy Spirit. The evidence contradicts this opinion however for such belief neglects the fact that non-Christians have beliefs and customs which may approximate or even duplicate Christian patterns. Many examples may be provided but let us cite the case of female chastity. Ethnocentric Christians in Western culture commonly believe that female chastity is unknown among non-Christian peoples because their cultures lack Christian morality and ethical systems governing behavior. Of course chastity is an ideal among Christians but it was also an ideal among some cultural groups (sometimes designated "savages") uninfluenced by Christianity. The Cheyenne Indians of the North American Plains placed great emphasis upon female chastity (Hoebel, 1960:20-21), and the Manus people of the Admiralty Islands maintained similar standards for their women until they experienced acculturation by Western peoples (Mead, 1930:113, 184).

In an excellent work on glossolalia, Kelsey displays unusual objectivity but cannot escape some ethnocentrism when confronted with religious enthusiasm among non-Christian cultures. Ethnocentrism prompts him to reject any relationship between a reported non-emotional demonstration of glossolalia and that displayed during shamanistic trance. He contends that emotionalism is not necessary for speaking in tongues and supports this by citing the case of Reverend Dennis Bennett who spoke in tongues with equanimity during a television interview in Los Angeles (Kelsey, 1964:145). When commenting about an article written by the anthropologist, May, who describes and analyzes glossolalia among non-Christians, Kelsey rejects shamanistic utterances during hysterical frenzy as comparable with the tongues phenomena among Christians.

Superficially Kelsey's negative reaction seems appropriate but careful examination of ethnological evidence compels one to grant existing grounds for comparison. Glossolalia as practiced by a composed clergy-

man before a television audience and that accompanying a shamanistic seance may seem quite remote from each other but actually they are different in degree rather than kind. They may be considered extremes in overt behavior on a continuum from sedate performance to hysterical activity within the framework of religious enthusiasm. Undoubtedly Kelsey as a sophisticated, refined member of urbane civilization would be offended, even nauseated, to share a meal with, say, a South African Bushman who gorges himself with meat following the kill with no awareness of Western concepts of sanitation and etiquette; or again to share eating with the Eskimo, "the eaters of raw meat," who consider the contents of the slain animal's intestines a choice delicacy. But Kelsey must allow that these revolting eating habits satisfy a dietary imperative just as dining at a luxurious restaurant with excellent cuisine. We must not allow impressionistic differences to obscure fundamental similarities. Overt behavior does not always reflect an individual's emotional or ecstatic state which may be an integral feature of what some have called the individual's "covert personality." Stoicism is known to occur among religious enthusiasts in the Christian faith and may be compared with the Buddhist who determines to renounce all attachments to life in a state of religious dedication. To the imper-turbable Buddhist, "salvation, here and hereafter," is "a state of perfectly painless *peace and joy*, a psychologically achieved freedom from misery of any kind" (Noss, 1963:189, italics supplied).

Little effort is required to make transition from ethnocentrism and glossolalia to spirit possession and glossolalia. Possession is a common occurrence in many cultures where it is frequently associated with ecstatic vocalizations. The pertinent question at this point is whether Christian tongues stem from what might be considered possession as in vocalizations from possession in non-Christian groups. Gerlach and his associates report that "Pentecostal tongue speaking, contrary to our expectations, is more significantly different from spirit possession in other cultures than it is similar, and that this difference lies not only in the state of dissociation itself but, more importantly, in the results in terms of changed behavior" (1967:4). However these authors qualify this assertion by confessing that there are a "variety of types of possession experiences which vary between groups, between individuals within groups and between different experiences for the same individual over time" (1967:7).

In a critical review of the Episcopal Commission's study on glossolalia (1963), Sadler (1964) believes that they failed to resolve fundamental problems attending the tongues phenomena in the Episcopal church. One of the problems considered by Sadler is the question of possession by the participants. Sadler's reasoning is worthy of some attention so we shall follow his thinking and criticism. The Episcopal Commission's report uses "spirit possession" which means possession by the Holy Spirit at first, but later the Commission inexplicably substitutes the phrase "demonic possession" (1963:6, 13). The result

is unfortunate confusion in attributing glossolalia to divine possession or to demonic possession. Sadler's criticism of this confusion leads us to briefly explore the concept of possession based on ethnological findings.

Walter and Frances Mischel have studied spirit possession in the Shango cult in Trinidad in a quest to discover psychological factors underlying the phenomena (1958). The induction of possession is at religious feasts or sacrifices where the combination of crowd excitement, singing, darkness, candles, circular rhythmic dancing, and other ceremonial phases are intensified by incessant drumming. The expected and common result is possession by the spirit or "Powers" with a dramatic physical transformation including body vibrations, rhythmic bending of the body forward and backward, dilation of the eyes, and a fixed stare. The specific behavior in which the spirit, or a particular power, may engage covers a wide range. The spirit then speaks through the possessed individual in a mixture of genuine language and nonsense syllables—in short, a form of glossolalia.

The Mischels assume that behavior during possession is perpetuated only if it is reinforcing or rewarding to those who exhibit it, and they conclude that there is positive reinforcement by temporary alleviation of anxiety. Also the practice of spirit possession permits the sanctioned expressions of behaviors which are otherwise socially unacceptable or unavailable. A further reinforcement is that the spirit possessed person has considerable control over those attending the ceremony. The possessed's "slightest wish is immediately carried out; the onlookers are utterly at his disposal and ready to advance, retreat, sing, or keep silent at his command" (Mischel and Mischel, 1958:254). The cult leader of course exerts the greatest and most consistent control when possessed by the spirit.

Ethnologists trace this form of spirit possession and related behavior to the West Coast of Africa, the original home of most Trinidadians and other West Indian Negroes. The noted Africanist, Herskovits, has pointed out that among the people of West Africa "possession by the God (is) the supreme religious experience" (1941:215). To a considerable degree the Negroes in the New World have retained African forms of worship; the Shango cult is but one of several syncretic groups in the area. Spirit possession plays a leading role in all of them. In fact, a less exotic form of possession, but nevertheless related to the same phenomenon, occurs in Negro and white Pentecostal churches in many parts of the United States (Fauset, 1944; Holt, 1940).

The relevance of these observations on spirit possession is that Christian glossolalists frequently attribute their tongues ability to the "filling of the Holy Spirit" or complete abandonment of self to the will of God with the consequent indwelling Spirit controlling the entire being including the vocal mechanism. The problem of spirit possession and demonic possession is not resolved by these comments, but further reference to West Indian culture reveals an interesting contrast in

the opinion of those peoples. Alfred Metraux, in his classic study of possession in the Voodoo cult in Haiti, clearly states that possession by the gods is sought after and much desired, while possession by evil spirits is viewed as frightening and morbid (1959:127). It is apparent that the Voodoo cultists distinguish between the two types of possession on the basis of personality and cultural integration.

The Study Commission of the Episcopalian church fails to appreciate the ethnological method for they are reluctant to compare glossolalic occurrence among Christians with "pagan" experiences. In their words: "The Holy Spirit is not akin to a pagan spirit conceived as an ethereal individual in search of a person vulnerable to possession." They continue: "... pagan possession is a private matter" and that it does not "take place in community" nor does it have "as its fruit the widening of the community" (1963:10). The most effective means to answer this argument is to cite Metraux's treatment of Voodoo where he suggests that the "sympathetic concern" of the gathered community "provides an atmosphere of moral and physical security which is conducive to total abandonment in the state of trance" (1959:122).

Ethnological data supports the hypothesis that conditions for trance and possession are favored by ceremonial order including considerable repetition in singing, dancing, or similar behavior. The manifestation of tongues among the sedate Anglicans is related to a favorable occasion for the Report explicitly states: "... prayer for baptism of the Holy Spirit with the sign-tongue usually comes at the end of a time of testimony and prayer together and therefore, after considerable emotional involvement, if not display;" and furthermore the Report continues "Tongues-speaking frequently is induced or at least prefaced by repetition of some key phrase such as 'Jesus, Jesus, Jesus'" (1963:13).

Mental health is necessarily involved in considering personalities susceptible to possession and glossolalic states of exaltation. Earlier in this paper some note was made to the fact that there is evidence sustaining a state of dissatisfaction by tongue speakers with spiritual experiences prior to glossolalic episodes. This discontent frequently took on the proportions of obsession with attending degrees of anxiety. Sadler's critique of the Commission's Report refers to the uneasiness of Doctors John W. Perry and Richard M. Sutherland, psychiatrists on the Commission, when they "point out that there is a significant difference between the person who can 'decide' to indulge in glossolalia and then withdraw from it at will, and the one whose conscious is overwhelmed by his unconscious until sufficient release has taken place. The latter hardly could be considered as in emotional good health" (1964:87). The Commission's Report continues with these words: "Our psychiatrists point out that the term 'surrender' . . . is a familiar one to them," which the Commission then explains: "Glossolalia is not *per se* a religious phenomenon . . . In its non-religious manifestations it appears among adults who are suffering from mental disorders

as schizophrenia and hysteria" (1963:12).

Again we may turn to the writings of the ethnologist, Metraux in his study of voodooism, for he challenges the Commission's conclusion with these comments:

Ritual possessions are often attributed to nervous disorders of a hysterical nature. Twenty-odd years ago Herskovits had already refuted that explanation by drawing attention to the stylized and controlled nature of the phenomenon and its frequency in a society in which it was the normal means of communicating with supernatural powers. The number of people subject to possession is too large for all of them to be labelled hysterics . . . (1959:135).

In pursuing this ethnological point of view, the recent exhaustive treatment of shamanism by Mircea Eliade comes to mind (1964). In case the reader is unacquainted with anthropological terminology, a shaman is a magico-religious practitioner engaged in priestly, prophetic and medical functions among simpler cultures. Usually his office involves faith and practice based upon the theory of possession in which a spirit from outside the individual takes control of the individual and operates through him while in a state of possession. However the shaman may reverse this "coming in" of the divine spirit and leave his body to visit paradise and communicate directly with divine persons. It must be emphasized that both phenomena occur by the individual's entrance into an ecstatic trance state. Scholars have raised the question of the mental health of one subject to repeated excursions into ecstatic state and some have concluded that the shaman is a pathological case. Eliade has this to say:

This problem, in our view, has been wrongly stated. In the first place, it is not correct to say that shamans are, or must *always* be, neuropaths: on the contrary, a great many of them are perfectly sound in mind. Moreover, those who had previously been ill have *become shamans just because they succeeded in getting well*. Very often, when the vocation reveals itself in the course of an illness or an attack of epilepsy, the initiation is also a cure. The acquisition of the shamanic gifts indeed presupposes the resolution of the psychic crisis brought on by the first signs of this vocation. The initiation is manifested by—among other things—a new psychic integration (1960:77).

Eliade derives information from multiple sources to support this view that possession, commonly accompanied by glossolalia, is not a basis for regarding shamans as hopeless lunatics. Similarly the British ethnologist, Nadel, after a thorough investigation of shamanism in the African Sudan, has this to report:

And here it is important to stress that neither epilepsy nor insanity, nor yet other minor mental derangements, are in themselves regarded as symptoms of spirit possession. They are diseases, abnormal disorders, not supernatural qualifications. No shaman is, in everyday life, an abnormal individual, a neurotic or a paranoid; if he were, he would be classed as a lunatic, not respected as a priest. Nor finally can shamanism be correlated with incipient or latent abnormality; I recorded no case of a shaman whose professional hysteria deteriorated into serious mental disorders (1965:478).

While anxiety and emotional problems undoubtedly characterize the personality of many glossolalists, the findings of Eliade, Nadel, and others restrain us from assigning all members of tongues movements to a

psychotic category wherein it is imperative they receive psychiatric attention on the basis of religious emotionalism. Most of these people may be quite normal in their everyday life but are unable, or do not care to exercise the ability, to cope with the unconscious in seeking a vital spiritual experience. Perhaps Sadler is correct when he suggests that among the Neo-Pentecostals who practice glossolalia there may not be neurosis but the unconscious may be expressing itself positively in an implementation of creativity (1964:90).

An attempt to understand glossolalia as an ethnological study is incomplete without attention to the various types that have been observed in contrasting cultures. May (1956:77) refers to a study that the present author has not seen; it is a work by Lombard, a French scholar, who as early as 1910 proposed four main types of glossolalia. He called his first type "*phonations frustes*" which is characterized by incomprehensible sounds including mumbling, gurgling, and groaning. This form of ecstatic vocalization is the simplest in Lombard's scheme, and it occurs most usually during possession by shamans among South American and Australian aborigines. "Pseudo-language" is Lombard's second type. These utterances are sounds fabricated by the subject and may include fragments of words, and on occasion there may be evidence of alliteration with simulation of sentences as exemplified by Shango cultists in Trinidad. The third type is verbal fabrication wherein words, coined by the individual, contain particles of foreign and native phonemes which may conform to identified grammatical rules. Cutten (1927:136-148) devotes extended attention to the case of a Helene Smith (a pseudonym) in Switzerland. As a spiritualist medium, she experienced total somnambulism and visited Mars. Upon awaking from the trance she responded to the French-speaking company with an incomprehensible jargon which competent scholars judged to be in part a fabrication of a counterfeited French mixed with a few Arabic and Sanscrit words. Lombard's final type is xenoglossia, or miraculously speaking unlearned foreign tongues.

Among his brief comments about Lombard's types, May observes that the four are not mutually exclusive, but that the glossolalist may utter a combination of all four during a single episode of ecstatic vocalization (1956:78). This fact complicates the problem of typing glossolalic forms, but even more serious to the ethnologist is the data to which he must refer for the phenomenon. Ethnographic reports are notoriously incomplete because the ethnographer is usually limited in interest and time with the result that, with a few exceptions, glossolalia receives scant attention. The persistent problem confronting the student who seeks to know the glossolalic form in the New Testament is compounded for the ethnologist. The work accomplished by May is the most complete published up to the present time so it may be wise to follow his lead with some modifications. He incorporates Lombard's four types into six categories which he labels the language of spirits, sacerdotal language, the language of animals, *phonations*

frustes, xenoglossia, and ermeneglossia (1956:78-88).

The language of spirits or supernatural beings is commonly found among aboriginal peoples of the subarctic regions of North America and Asia. The shamans employ this form of speech in their divinatory and curing ceremonies (Rasmussen, 1921-24:31; Bogoras, 1907:413, 438). There are also reports of this type elsewhere, as, for example the case cited in Micronesia (Wallis, 1939:82). Some Bible commentators are inclined to include this type in the New Testament occurrences for Easton (1943:2996), in reference to First Corinthians 13:1 suggests that the kinds of tongues may have included "celestial languages" with Paul's statement "If I speak in the tongues of men and of angels . . ."

Sacerdotal language is the special type used by priests and religious leaders, and differs from spirit language principally by its inclusion of obsolete words. Thalbitzer (1931:432) argues that this language form is a stereotyped argot persisting among shamans in Greenland. Among the Dyaks of Borneo, the medicine men chant with obsolete words unintelligible to the laymen (Dunn, 1906:174-75). Obsolete words and cabalistic language used in religious ceremonies are widespread; thus when the excited priest in Haiti resorts to a special language as he communicates with the deity, the form of language is believed to be a vestige of African speech no longer used in the vernacular (Deren, 1953:196). That this is indeed a form of glossolalia is apparent for the priest does not seem to know the meaning of the words; only the deity is supposed to understand the utterances. In the "zar" cult of northern Ethiopia, the doctor or shaman must possess specific qualifications for his office, these include the ability to speak the "zar language" which Abyssinians regard "as a completely different, esoteric language, but which is actually an argot composed of deformed Amharic . . . paraphrases, and foreign loanwords" (Messing, 1958:1122; see also Leslau, 1949). Some reported cases of sacerdotal language cannot be regarded as a legitimate form of glossolalia for the obsolete words are understood by the speaker who may have learned them from elder colleagues. In this connection, one is reminded of the retention of Latin in the litanies of High Episcopal and Roman Catholic churches as well as the Orthodox church.

May's third category is the language of animals. Eliade (1964:96-99) has examined the use of animal language used by religio-medical functionaries and finds it a common phenomenon among Siberian shamans as well as practitioners elsewhere. A quotation from Eliade will perhaps be an adequate summary of the form:

. . . this secret language is actually the 'animal language' or originates in animal cries. In South America the neophyte must learn, during his initiation period, to imitate the voices of animals. The same is true of North America . . . All over the world learning the language of animals, especially of birds, is equivalent to knowing the secrets of nature and hence to being able to prophesy . . . Learning their language, imitating their voice, is equivalent to ability to communicate with the beyond and the heavens.

The occurrence of *phonations frustes*, the fourth type, in non-Christian religions includes such bizarre sounds produced by ventriloquism as whistling and shrieking. Metraux's description of the Chaco Indians of South America includes information about their magical rites which often consist of a monotonous repetition of a melodious theme interspersed with meaningless words or syllables (1946:353). Metraux does not provide detail as to the psychological state of the participants but Ortiz (1946:967), in discussing the *curanderos* or tribal doctors of the Andes, asserts that the practitioners chew drugs to induce a semi-conscious condition during which they intermittently recite unintelligible prayers. When studying the Dinka in the African Sudan, Lienhardt observed similar ecstatic utterances although he does not give all details. Evidently the experience is associated with what the Dinka consider to be spirit possession accompanied by vocalizations derived from a close personal contact with "Powers" (Lienhardt, 1961:58). Lienhardt does describe one seizure with these words: "Bursts of frenzied movement were interspersed with quieter periods, when he (the possessed individual) sang snatches of songs which nobody could understand . . . The situation is a familiar one to all Dinka" (1961:58-59). Within the Christian tongues movement, the problem of glossolalic form is not resolved to the satisfaction of all scholars, but many do hold that one form approximates what May describes as *phonations frustes*.

May's fifth form is xenoglossia or the miraculous ability to speak in a foreign language without studying that language. The numerous cases cited in Christian and non-Christian literature reveal that the form is widespread and bears considerable uniformity in occurrence. In his ethnography of the Haida Indians of the Pacific Northwest, Swanton refers to a shamanistic performance which included spirit control of the shaman's tongue enabling him to speak Tlingit language (1905:38). When not possessed by the spirit, the shaman was totally ignorant of Tlingit. This case is not an isolated instance in the Pacific Northwest, but an even more interesting occurrence is described by DuBois (1935:35-39, 91ff.) about an Indian of northern California, Nels Charles, who attended a white mission school. He was unfamiliar with the Wintu Indian language but DuBois quotes him as saying, "I can't even talk Wintu well, but when a spirit enters me the spirit talks and they say I talk Wintu perfectly well. It is just like talking with unknown tongues and getting the spirit in the Pentecostal church" (cited also by May, 1956:83). It is not clear whether Charles was a professing Christian but the case shows unmistakable Christian influence. A number of xenoglossic cases have been described in Africa where, it may be noted, bilingualism and multilingualism are common. Among these we may refer to one discussed by the Christian missionary Junod who wrote an excellent ethnography about the Thonga (1962). Junod describes the practice of exorcising evil spirits by Thonga shamans; in his description he states that the patient being exorcised sings a curative song which he himself creates. "These

songs are generally in Zulu, and it is asserted that, even if the patient does not know this language, he will be able to use it in his conversation, by a kind of miracle of tongues" (Junod, 1962:445). Edman refers to the Wheaton College graduate who was born and reared on the Tibetan border where he heard the Tibetan monks, during their ritual dances, speak in English with quotations from Shakespeare, and with profanity like drunken soldiers, or in German or French (1964:16).

A striking occurrence of xenoglossia is related by Slotkin among North American Indians (1965). As an anthropologist and former member and officer of the Native American Church, or the Peyote cult, Slotkin has had considerable experience in this nativistic movement. He describes sympathetically the Peyote cult which is a kind of Indian version of Christianity, having adopted Christian theology, ethics, and eschatology with appropriate modifications to make the doctrines compatible with traditional Indian culture. Peyote is a drug that produces heightened sensibility wherein one feels that he influences others or is influenced by the thoughts of others. Let the account of Slotkin (1965:515-516) make this experience clear in association with glossolalia:

In this connection a frequent phenomenon is speaking in tongues, which results from the fact that people from different tribes participate in a rite together, each using his own language; Peyote teaches one the meaning of otherwise unknown languages.

For example, during the rite of each male participant in succession sings solo four songs at a time. Recently a Winnebago sitting next to me sang a song with what I heard as a Fox text (Fox is an Algonquian language closely related to Menomini, the language I use in the rite), sung so clearly and distinctly I understood every word.

When he was through, I leaned over and asked, 'How come you sang that song in Fox rather than Winnebago (a Siouan language unintelligible to me?)'

'I did sing it in Winnebago,' he replied. The afternoon following the rite he sat down next to me and asked me to listen while he repeated the song; this time it was completely unintelligible to me because the effects of Peyote had worn off.

There seems no reasons for doubting the actuality of this form of glossolalia, and it seems probable, in the opinion of the writer, that xenoglossia was the form of vocalization on Pentecost as stated by Luke in the second chapter of Acts.

The final form of unusual vocal behavior listed by May is ermenglossia or the interpretation of tongues. The problem of credibility is particularly acute in analyzing reported cases other than xenoglossia which of course may be recognized by one conversant in the foreign language spoken. But if the vocalizations are in, say, the form of *phonations frustes*, the interpretation presents problems, for who ultimately is to determine the authenticity and accurateness of an interpretation? One need only remember Cutten's example of the Mormon boy who was reported to possess the interpretative gift (1927:182). When called upon to interpret a woman's utterance, "Omela, meli, melee," in a glossolalic meeting, the boy responded immediately

with the interpretation of "Oh! my leg! my thigh! my knee!" May offers numerous instances of ermeneglossia but the following one may be cited as typical:

In his discussion of shamanism in Japanese religion Oguchi . . . tells of a man living in Hakkaido who founded a new religion attaching importance to horses and water. While being anesthetized preparatory to an abdominal operation, this man Yasui Juiji experienced a curious form of interpretation of tongues. He avers that he could understand the German his surgeon was speaking just as though it were Japanese. That the attendants laughed when he told them he could understand the doctor's words indicates that he was not conscious at the time. Mr. Juiji claims that God's dwelling within him enabled him to understand German (May, 1956:87).

Within the Christian context of the many utterances, there are endless accounts of the ability to interpret these unknown tongues. It is common knowledge that Paul suggests "If any speak in a tongue, let there be only two or at most three, and each in turn; and let one interpret" (I Corinthians 14:27 RSV). This does not remove the fact that fraudulent claims have been made by counterfeit glossolalists both in ecstatic utterances and in fabricated interpretations.

This study has insisted in linking tongues to psychological states like anxiety, emotionalism, and ecstasy. It is the author's contention that glossolalia permits identification with the supernatural in the process of emotional release through ecstatic behavior even though overt behavior may not manifest covert affective states. The emotional release is in turn essential for personality integration to those who are characterized by varying degrees of instability or anxiety to enable them to cope with frustrations and threats actual or imagined. Varying degrees of neuroses accompanying anxiety are common to mankind everywhere for ethnographic study and reports about different peoples throughout the world substantiate such an assertion.

The writer wishes to conclude this study by glancing briefly at the prevalence of mental disturbances among Western peoples, a fact which probably makes them susceptible to glossolalic behavior as a means of emotional release while linking themselves closely to the supernatural. Insofar as I have examined the ethnographic literature, glossolalia associated with mass religious movements occurs only among Western people or among those in some stage of acculturation by Western people. If we limit the phenomenon to contemporary America, we may raise the question: Why has the tongues movement achieved notable success in gaining large numbers of recruits as well as invading mainline denominations? A likely answer to this question provided by glossolalists is that the splintered church denominations have lost their Christian vitality and dynamic qualities of spirituality in a skeptical and secularistic environment. Perhaps this answer is partially correct but it seems somewhat too simplistic and neat when one considers the complex circumstances of contemporary life.

As an anthropologist interested in cultural factors contributing to frustrations and anxiety, I see a more comprehensive answer in an ethnological viewpoint. In

anthropology the study of individuals and their personalities has been greatly influenced by psychoanalysis. We cannot explore the ramifications of this influence but merely comment that each personality does develop in a cultural milieu and is to a certain degree fashioned by forces within the culture. Thus, the psychoanalyst, Karen Horney (1937), clearly perceives the critical importance of cultural factors in the causation of psychic disturbances. Also, in his study of American character, Henry (1963) relentlessly outlines the fears that underlie our society as he examines such basic institutions as childhood, formal education, parenthood, and old age (or what he calls "Human Obsolescence"). Henry's conclusion is that American anxiety springs from a conflict between "values" and "drives." The drives (achievement, competition, profit, mobility, security, a higher standard of living, etc.) are in conflict with a group of urges, or values (gentleness, kindness, generosity, etc.), with the result that "in our culture a central issue for the emotional life of everyone is the interplay between these two" (Henry, 1963:13). The result is frustration and anxiety.

Anxiety rests upon the foundation of insecurity which is present to some degree in most Americans. Nearly twenty years ago the anthropologist, John Gillin (1948), suggested some specific reasons for American insecurity. He wrote that three fundamental supports providing self-confidence have been removed with no adequate substitutes replacing them. First, the decline of kinship in American society has removed man from an essential group whose behavior he could predict and in whose circle the individual could expect succor when in trouble. Second, the support of material wealth and symbols of wealth has lost its assurance. The depression taught men that there is no reliable security in material possessions. Religion furnished the third support. "If one's relatives show no interest in one and if one's God has been exploded by indifference and skepticism, what does one have left?"

Americans and Western man are insecure and anxious people. It is the writer's opinion there is a positive correlation between the disappearance of traditional supports sustaining man's self-confidence and the emergence of charismatic revivalism with its glossolalic phenomenon. Through ecstatic experiences by which he identifies with the supernatural, man secures compensation for the social, economic, and spiritual vacuum characteristic of Western culture in the twentieth century.

BIBLIOGRAPHY

- Anonymous
n.d. *Why Tongues?* Van Nuys, California, The Blessed Trinity Society.
- Archer, John C., and Carl E. Puriton
1958 *Faiths Men Live By*. New York, The Ronald Press Company.
- Bach, Marcus
1964 Whether There Be Tongues. *Christian Herald*, May, pp. 10-11, 20, 22.
- Barton, George A.
1955 Possession: Semite and Christian. In *Encyclopedia of Religion and Ethics*, ed., James Hastings, 10:133-139. New York, Charles Scribner's Sons.
- Barton, R. F.

- 1946 *The Religion of the Ifugaos*. American Anthropological Association Memoir No. 65.
- Beare, Frank W.
1964 *Speaking With Tongues: A Critical Survey of the New Testament Evidence*. *Journal of Biblical Literature* 83:229-246.
- Behm, J.
1964 Glossolalia. In *Theological Dictionary of the New Testament*, ed., Gerhard Kittel (trans. by Geoffrey W. Bromiley), 1:719-727. Grand Rapids, Michigan, William B. Eerdmans Publishing Company.
- Berkhof, Hendrikus
1964 *The Doctrine of the Holy Spirit*. Richmond, Virginia, John Knox Press.
- Bloch-Hoell, Nils
n.d. *The Pentecostal Movement: Its Origin, Development, and Distinctive Character*. London, Allen and Unwin, Ltd.
- Bloesch, Donald G.
1966 The Charismatic Revival: A Theological Critique. *Religion In Life* 35:364-380.
- Borgoras, W. G.
1907 *The Chukchee-Religion*. Reprint from Vol. VII, Pt. II, of the Jesup North Pacific Expedition. Memoirs of the American Museum of Natural History XI, Pt. II. New York, G. E. Stechert.
- Bourguignon, Erika, and Louanna Pettay
1964 Spirit Possession, Trance, and Cross Cultural Research. *Proceedings of the 1964 Annual Spring Meeting of the American Ethnological Society*, pp. 38-49. Seattle, University of Washington Press.
- Burt, Edwin A.
1957 *Man Seeks the Divine*. New York, Harper and Row.
- Carroll, R. Leonard
1966 Glossolalia: Apostles to the Reformation. In *The Glossolalia Phenomenon*, ed., Wade H. Horton, pp. 69-94. Cleveland, Tennessee, Pathway Press.
- Christenson, Larry
n.d. *Speaking in Tongues*. Pamphlet published by author, San Pedro, California.
- Clark, Elmer T.
1949 *The Small Sects in America*. New York, Abingdon-Cokesbury Press.
- Coats, R. H.
1955 Holiness: New Testament and Christian. In *Encyclopedia of Religion and Ethics*, ed., James Hastings, 6:743-750. New York, Charles Scribner's Sons.
- Coe, George A.
1925 *The Psychology of Religion*. Chicago, University of Chicago Press.
- Currie, Stuart D.
1965 "Speaking In Tongues": Early Evidence Outside the New Testament Bearing on "Glossais Lalein." *Interpretation* 19:274-294.
- Cutten, George B.
1927 *Speaking With Tongues: Historically and Psychologically Considered*. New Haven, Connecticut, Yale University Press.
- Deren, Maya
1953 *Divine Horsemen*. New York, Thames and Hudson.
- Dodds, E. R.
1951 *The Greeks and the Irrational*. Berkeley, California, University of California Press.
- Dunn, E.
1906 Religious Rites and Customs of the Iban or Dyaks of Sarawak, Borneo. *Anthropos* 1:1-175.
- Dye, James W., and William H. Forthman
1967 *Religions of the World*. New York, Appleton-Century-Crofts.
- Easton, Burton S.
1943 Gift of Tongues. In *The International Standard Bible Encyclopedia*, ed., James Orr, 5:2995-2997. Grand Rapids, Michigan, William B. Eerdmans Publishing Company.
- Edman, V. Raymond
1964 Divine or Devilish? *Christian Herald*, May, pp. 14-17.
- Eliade, Mircea (trans. by Philip Mairet)
1960 *Myths, Dreams and Mysteries*. New York, Harper and Company.
- Eliade, Mircea (trans. by Willard R. Trask)
1964 *Shamanism: Archaic Techniques of Ecstasy*. New York, Pantheon Books.
- Episcopal Church
1963 *Preliminary Report*. Diocese of California, Division of Pastoral Services, Study Commission on Glossolalia. San Francisco, California.
- Fallaize, E. N.
1955 Possession: Introductory and Primitive. In *Encyclopedia of Religion and Ethics*, ed., James Hastings, 10:122-127. New York, Charles Scribner's Sons.
- Farrell, Frank
1963 Outburst of Tongues: The New Penetration. *Christianity Today* 7 (No. 24):3-7.
- Fauet, A. H.
1944 *Black Gods of the Metropolis: Negro Religious Cults of the Urban North*. Philadelphia, University of Pennsylvania Press.
- Ferm, Vergilius, et. al.
1958 *Living Schools of Religion*. Ames, Iowa, Littlefield, Adams and Company.
- Finch, John G.
1964 God-inspired or Self-Induced? *Christian Herald*, May, pp. 12-13, 17, 19, 87.
- Gerlach, Luther P., et. al.
1967 The Charismatic Revival: Process of Recruitment, Conversion, and Behavioral Change in a Modern Religious Movement. Mimeographed paper presented at the American Anthropological Association's 65th Annual Meeting in Pittsburgh on November 20, 1966, with a supplementary report circulated by the authors.
- Gillin, John
1948 Personality Formation from the Comparative Cultural Point of View. In *Personality in Nature, Society, and Culture*, eds., Clyde Kluckhohn and H. A. Murray. New York, Alfred A. Knopf.
- Gromacki, Robert K.
1967 *The Modern Tongues Movement*. Philadelphia, Presbyterian and Reformed Publishing Company.
- Guillaume, Alfred
1938 *Prophecy and Divination Among the Hebrews and Other Semites*. New York, Harper and Brothers.
- Hargrave, Vessie D.
1966 Glossolalia: Reformation to the Twentieth Century. In *The Glossolalia Phenomenon*, ed., Wade H. Horton, pp. 97-139. Cleveland, Tennessee, Pathway Press.
- Henry, Jules
1963 *Culture Against Man*. New York, Random House.
- Herskovits, Melville J.
1941 *The Myth of the Negro Past*. New York, Alfred Knopf.
- Herskovits, Melville J., and Frances S.
1947 *Trinidad Village*. New York, Alfred A. Knopf.
- Hills, James W. L.
1963 The New Pentecostalism: Its Pioneers and Promoters. *Eternity* 14 (No. 7):17-18.
- Hitt, Russell T.
1963 The New Pentecostalism: An Appraisal. *Eternity* 14 (No. 7): 10-16.
- Hoebel, E. Adamson
1960 *The Cheyennes: Indians of the Great Plains*. New York, Henry Holt and Company.
- Hoekema, Anthony A.
1966 *What About Tongue-Speaking?* Grand Rapids, Michigan, William B. Eerdmans Publishing Company.
- Holt, J. B.
1940 Holiness Religion, Culture Shock, and Social Reorganization. *American Sociological Review* 5:740-747.
- Horney, Karen
1937 *The Neurotic Personality of Our Time*. New York, W. W. Norton and Company.
- Horton, Wade H. (ed)
1966 *The Glossolalia Phenomenon*. Cleveland, Tennessee, Pathway Press.
- Inge, W. R.
1955 Ecstasy. In *Encyclopedia of Religion and Ethics*, ed., James Hastings, 5:157-159. New York, Charles Scribner's Sons.
- Junod, Henri A.
1962 *The Life of a South African Tribe* (Vol. 2). New Hyde Park, New York, University Books.
- Kelsey, Morton T.
1964 *Tongue Speaking: An Experiment in Spiritual Experience*. Garden City, New York, Doubleday and Company, Inc.
- Kissling, Hans J.
1954 *The Sociological and Educational Role of the Dervish Orders in the Ottoman Empire*. American Anthropological Memoir No. 76, pp. 23-35.
- Lapsley, James N., and John H. Simpson
1964a *Speaking in Tongues: Infantile Babble or Song of*

- the Self? *Pastoral Psychology* 15 (No. 146):16-24.
1964b Speaking in Tongues: Token of Group Acceptance and Divine Approval. *Pastoral Psychology* 15 (No. 144): 48-55.
- Leslau, Wolf
1949 An Ethiopian Argot of a People Possessed by a Spirit. *Africa* 19:204-212.
- Lessa, William A., and Evon Z. Vogt (eds.)
1965 *Reader in Comparative Religion: An Anthropological Approach*. New York, Harper and Row.
- Lienhardt, Geoffrey
1961 *Divinity and Experience: The Religion of the Dinka*. New York, Oxford University Press.
- Loeb, E. M.
1921 Shaman and Seer. *American Anthropologist* 31:60-84.
- Lyon, Quinter M.
1957 *The Great Religions*. New York, The Odyssey Press.
- May, L. Carlyle
1954 The Dancing Religion: A Japanese Messianic Sect. *Southwestern Journal of Anthropology* 10:119-137.
- May, L. Carlyle
1956 A Survey of Glossolalia and Related Phenomena in Non-Christian Religions. *American Anthropologist* 58:75-96.
- Mead, Margaret
1930 *Growing Up In New Guinea*. New York, The New American Library.
- Messing, Simon D.
1958 Group Therapy and Social Status in the Zar Cult of Ethiopia. *American Anthropologist* 60:1120-1126.
- Metraux, Alfred
1946 Ethnography of the Chaco. In *Handbook of South American Indians*, ed., Julian H. Steward, 1:197-370. Washington, D.C., Bureau of American Ethnography.
- Metraux, Alfred (trans. by Hugo Charteris)
1959 *Voodoo in Haiti*. New York, Oxford University Press.
- Middleton, John (ed)
1967 *Gods and Rituals*. Garden City, New York, The Natural History Press.
- Mischel, Walter, and Frances Mischel
1958 Psychological Aspects of Spirit Possession. *American Anthropologist* 60:249-260.
- Moorehead, William G.
1943 Tongues of Fire. In *The International Standard Bible Encyclopedia*, ed., James Orr, 5:2997-2998. Grand Rapids, Michigan, William B. Eerdmans Publishing Company.
- Nadel, S. F.
1965 A Study of Shamanism in the Nuba Mountains. In *Reader in Comparative Religion: An Anthropological Approach*, eds., William A. Lessa and Evon Z. Vogt, pp. 464-479. New York, Harper and Row.
- Norbeck, Edward
1961 *Religion in Primitive Society*. New York, Harper and Brothers.
- Noss, John B.
1963 *Man's Religions*. New York, The Macmillan Company.
- Ortiz, Sergio E.
1946 The Modern Quillancingo, Pasto, and Coaquier. In *Handbook of South American Indians*, ed., Julian H. Steward, 2:961-968. Washington, D.C., Bureau of American Ethnology.
- Pope, Earl A.
1952 *The Pauline Concept of Glossolalia*. Unpublished Master's Thesis. Wheaton College, Wheaton, Illinois.
- Potter, Charles F.
1954 *The Faiths Men Live By*. Englewood Cliffs, New Jersey, Prentice-Hall, Inc.
- Pratt, James B.
1934 *The Religious Consciousness: A Psychological Study*. New York, The Macmillan Company.
- Rasmussen, Knud
1921-24 *Intellectual Culture of the Hudson Bay Eskimos*. Report of the Fifth Thule Expedition 7.
- Rivers, W. H. R.
1906 *The Todas*. London, The Macmillan Company.
- Robertson, Archibald
1902 Gift of Tongues. In *A Dictionary of the Bible*, ed., James Hastings, 4:793-796. New York, Charles Scribner's Sons.
- Sadler, A. W.
1964 Glossolalia and Possession: An Appeal to the Episcopal Study Commission. *Journal for the Scientific Study of Religion* 4 (No.1): 84-90.
- Silverman, Julian
1967 Shamans and Acute Schizophrenia. *American Anthropologist* 69:21-31.
- Slotkin, J. S.
1965 The Peyote Way. In *Reader in Comparative Religion: An Anthropological Approach*, eds., William A. Lessa and Evon Z. Vogt, pp. 513-517. New York, Harper and Row.
- Smith, Houston
1958 *The Religions of Man*. New York, The New American Library.
- Sherrill, John L.
1965 *They Speak With Other Tongues*. Westwood, New Jersey, Fleming H. Revell Company.
- Soper, Edmund D.
1951 *The Religions of Mankind*. Nashville, Abingdon Press.
- Spiro, Melford E.
1964 Religion and the Irrational. *Proceedings of the 1964 Annual Spring Meeting of the American Ethnological Society*, pp. 102-115. Seattle, University of Washington Press.
- Stalker, James
1955 Revivals of Religion. In *Encyclopedia of Religion and Ethics*, ed., James Hastings, 10:753-757. New York, Charles Scribner's Sons.
- Stewart, Kenneth M.
1946 Spirit Possession in Native America. *Southwestern Journal of Anthropology* 2:323-339.
- Swanton, John R.
1905 *The Haida*. Publications of the Jesup North Pacific Expedition 8.
- Thalbitzer, W.
1931 Shamans of the East Greenland Eskimo. In *Source Book in Anthropology*, ed., A. L. Kroeber and T. T. Waterman. New York, Harcourt Brace and Company.
- Wallace, Anthony, F. C.
1966 *Religion: An Anthropological View*. New York, Random House.
- Wallis, Wilson D.
1939 *Religion in Primitive Society*. New York, F. S. Crofts and Company.
- Welmers, William E.
1949 Secret Medicine, Magic, and Rites of the Kpelle Tribe in Liberia. *Southwestern Journal of Anthropology* 5:208-243.
- Welmers, William E.
1963 Letter to the Editor. *Christianity Today* 8 (No. 3): 19-20.
- Wood, William W.
1965 *Culture and Personality Aspects of the Pentecostal Holiness Religion*. The Hague, Mouton and Company.

The UNESCO Courier

Change, change, change, continual change. This is the watchword of modern life. We have not only adjusted to it, many of us have begun to revel in it. Conservative scientists have predicted the end of change at various times, but they have always been proved wrong. It seems it must go on forever. . . . Many scientists seem to suppose that we are just at the beginning of a curve of indefinitely accelerating change . . . I suggest that it is time to consider a different view, that we are not at the beginning of continually accelerating change, but that we are in the middle of a unique transitional crisis, like adolescence, as we make the jump from an undeveloped scientific and technological society to a fully developed one. Who knows?—we may be even beginning to be past the worst of the crisis, at least in countries like the United States. The slowing down of growth and the beginnings of our adjustment to it may become one of the major social phenomena of the next 30 years.

— John R. Platt, "The Step to Man."
as published in HIS

THEORY FORMULATION AND VALIDATION IN THE SOCIAL SCIENCES

PURNELL H. BENSON*

Successful theories of human behavior and human motivation, such as marginal utility analysis in economics, arise out of introspective observation of what goes on within the psychic world of human beings. Individual and social behavior only become intelligible in terms of concepts and principles of inner experience. When we know what men want and what they believe, we can account for their actions.

The validity of knowledge in the social sciences is tested, first, by whether other scientific minds reach the same concepts and principles from their psychic study. The knowledge is tested, secondly, by whether behavior which takes place does or does not conform with theory.

The psychic source of theory in the social sciences contradicts the empty approach of behaviorism which would treat a human being as if he were a bundle of physical material and had no psychic existence. The bankruptcy of behaviorism is evident in its failure to produce any important knowledge about human motivation and human behavior.

By holding open the door to man's psychic world as a field for discovery of laws of psychic existence, the way is left open for study of the manifestations of Jesus Christ in the lives of human beings. Jesus Christ is God, but where He enters human life, the work of His Spirit can be observed, just as human motives and other objects in the psychic world can be studied and verified. We take vastly more on faith from the Bible; yet science is one humble instrument whereby some important things can be learned about spiritual living and salvation.

The topic to which I turn this morning is "Theory Formulation and Validation in the Social Sciences." It actually makes little difference what the specific topic in the Social Sciences is which has been set for us this morning by the Program Committee. Whenever we turn to the question of knowledge in the social sciences we are confronted with the same basic issues. We are confronted with the same threat which false knowledge in the social sciences poses for our precious Christian heritage.

For a hundred years the cult in science known as behaviorism has been gaining increasing sway, although in the past generation some signs of scientists coming to their senses are in evidence. The chief spokesmen for behaviorism have been Pavlov in Russia and John B. Watson in the United States. The ideas of these men are now around two generations old. Their cause is led today by Skinner at Harvard, who would reduce us to automatons molded by teaching machines. Teaching machines do have their place in training the memory or problem solving abilities of human beings. Indeed they are little different from question and answer books which accomplish the same purpose of programmed learning at much less cost and effort. If one is intelligent enough to ask oneself questions, a book is a teaching tool. In this sense the greatest teaching machine of all is the Bible.

Behaviorists have sought to study human beings as if they were physical objects lacking a soul or a psychic life. Watson made much of his claim that consciousness does not exist. He denied the existence of thoughts or ideas. Someone asked him if he had an idea of what he was talking about. He said he did, so apparently ideas exist.

Behaviorists have tried to imitate their big brothers in physical science who have achieved such great success in working with data which can be seen or touched or at least seen or touched with the aid of physical instruments in the laboratory. To be frank about it, behaviorists have almost bankrupted civilization. Far more than denying the existence of man's

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psychic life and robbing him of his soul, behaviorists have tried to wean man away from what they regard as ghost worship or superstition. The Bible then has no place in the behavioristic scheme of things. Not content with robbing man of his soul, behaviorists have uttered all manner of things in the name of science to undermine the revelation of scriptures. This is not the place to list all of the subtractions from human knowledge which behaviorists have accomplished or have sought to accomplish. At the same time, let it be noted that their additions to human knowledge have been fantastically few and far between. Let any who would challenge this indictment of behaviorism cite the useful contributions to human knowledge of those who have proceeded along the mazelike or ratlike pathways of behaviorism.

I do not wish to diminish important contributions made by those in clinical or pastoral psychology. Some of these gentlemen halfheartedly call themselves behaviorists. What they accomplish in healing human beings is done in spite of their behaviorism, not because of it. In common with those who pursue the study of psychoanalysis, they are guided much more by the study of man's inner realm of psychic experience—the world of thinking, feeling, believing, desiring, and aspiration—than they are by the Shibboleths of behaviorism.

In voicing criticisms of behaviorism I do not wish to appear intolerant of differences of opinion in the quest for scientific truth. Such differences are always to be welcomed and to be encouraged wherever they may appear, since they are our greatest assurance of truth as a growing and developing revelation. What I feel intolerant towards is a dogmatic system which itself displays intolerance towards those who disagree with it. Let us be tolerant towards everything in science which is put forth conscientiously after careful study, as far as allowing a full and fair hearing is concerned. But let us mince no words, spare no bones, and pull no punches when it comes to the vigor and eloquence of our debate with behaviorism.

Fortunately those in social science are not all of one mind. Even while behaviorists have been parroting their absurdities, a great many dedicated scholars have seen the importance of studying human beings, not as atoms or electrons, not as purely biological animals, but as creatures endowed with intellects, feelings, values, and ways of appreciating the greatness and infinitude of their creator and father God. Obviously those who are sick in soul cannot be healed by the behavioristic monkey business of those studying how monkeys solve problems. Irresistibly, many in clinical and pastoral psychology have been brought overwhelmingly to the necessity for studying the inner psychic side of human life in order to understand as much as it is possible to understand of what goes on there.

Moreover, the best theoreticians in the social sciences, and by these I mean men who are recognized for having contributed to the storehouse of human knowledge, are those who have frankly looked at the inner or psychic side of human beings in order to see what makes human beings act. The richest and sound-

est theories, such as marginal utility analysis in economics, flow directly from an analysis of human motivation and human satisfaction. In political theory the doctrines of the natural rights of man come out of recognition of human beings as value-seeking creatures. In the science of education those who have contributed most are those who, like John Dewey, do not draw upon the dog-spit experiment of Pavlov, but recognize rather that human beings learn from and are guided by the experience and by their inward reflections upon experience.

These men are scientists in the best sense of the word. They seek to understand scientifically what goes on in man's inner psychic life. They are not bound by the narrow requirement that data must be seen in order to be scientific data. They realize that the most important data in social science are those given by patient observation of man's psychic life. They seek for the discovery of laws to which inner experience, thoughts, feelings, beliefs, desires, convictions, and aims conform.

Now I dwell this morning upon psychology, because I regard psychology as the cornerstone of the building which we call social science. Most of the social sciences in one way or another grow out of or are based upon psychology, in much the same way that chemistry, astronomy, geology, engineering, etc., are built upon physics as the cornerstone of the physical sciences.

In the origin of the term, the word psychology meant the study of the psyche or soul. In the best scientific sense of these terms I firmly believe that the task of psychology today should be the study of man's psychic world, or, as the word psyche has been traditionally known, the soul. Nor do I mean to include theology in a domain where it does not belong. I regard man's soul as the stream of consciousness or stream of experience about which William James wrote two generations ago. James is one of the great American psychologists. It is to his credit that he saw the task of psychology as one of understanding what goes on in man's inner world of thinking and motivation.

The study of the psychic world is of fundamental importance, first, because in this realm are found those things of greatest concern to human beings. Here are found their hopes, their values and their aspirations, their convictions, goals, and religious faith. If we are to learn about these things psychologically we must expect to study them at first hand as we encounter them in the psychic world. Nothing can be learned scientifically about the processes of thinking or the development of motivation or about how spiritual joy or peace of mind is to be found except by study of the psychic world.

The study of the psychic world is important, secondly, because what goes on there is the only thing which makes human behavior intelligible from a scientific standpoint. A trivial cataloging of what human beings do or do not do each minute while under laboratory observation is a waste of scientific time. No sense can be made out of such encyclopedic detail, until one sees human behavior in terms of the motivat-

ing factors which are present in the psychic world. For example, suppose as social scientists we see a group of human beings running down the street. What we see of their behavior is people running. We do not have the faintest idea of what the running is all about, until we know whether the people are running for exercise, or whether they are motivated by their curiosity about a fire, or whether they are seized by an experience of panic because of impending disaster. We comprehend these motivations by becoming familiar with the inner psychic world of the persons concerned. Principles governing human behavior are directly based upon principles of thinking and motivation. Knowledge of the psychic world acts like a searchlight in illuminating the behavior of human beings.

Having seen clearly the central role played by the study of man's psychic world in social scientific investigation, we are now able to face directly the topics of theory formulation and theory validation in the social sciences.

By theory is meant an idea-picture of the way in which things are related by cause and effect. A theory is an idea of a cause and effect connection. If the theory is true, then the supposed cause and effect connection actually exists. If the theory is false, there is no cause and effect connection. The term "theory" is further defined to mean an idea which has a good deal of factual data or scientific judgment in support of it. If a theory has been fully demonstrated in many ways by many scientists, it gains the status of a scientific law. If a theory is merely an idea as yet untested, it is known as an hypothesis. So when we speak of theory formulation, we are talking about the way in which sensible and plausible hypotheses are generated by the minds of social scientists. The answer as to where hypotheses and theories originate can be given in one short sentence. They come out of study of the psychic world.

A longer answer requires that we address ourselves to how knowledge about the psychic world is gained. There are two ways in which we get psychic knowledge. One way is for the scientist to study his own individual psychic world. This is the time honored route of introspection. We patiently reflect upon the content of our psychic world in order to discern more clearly and more completely what is going on in it. We follow the age old admonition of Jesus, "Know Thyself." The other way in which psychic study is pursued is to talk with other human beings about what they find in their psychic world.

There is a casual impressionistic level at which human beings can report upon their psychic experiences. They can furnish a running travelogue of what happens to them as they go through life. At a more rigorous level, study of the psychic experience of others is pursued systematically. In this case one does not talk with other human beings about their psychic world haphazardly. One first carries out sufficient study of one's own psychic world that one has a clear-cut idea of what goes on in psychic processes. One can then ask specific and carefully designed questions which will

yield answers of maximum accuracy by others about their psychic world.

The psychic world is full of things of intense interest to human beings: hopes, desires, feelings, beliefs, insights, frustrations, fulfillments, and all of life's meanings. Part of the psychic world appears as concrete imagery, as when one thinks imaginatively and hopefully of an anticipated vacation at the mountains or at the beach. Much of the psychic world does not exist at this concrete level of imagery but at a deeper level of undifferentiated experience. More subtle discernment is required in order to know what is going on there. How do we then find out what is in the psychic world? The answer is that we come to associate words, verbal symbols, with things which are in this psychic world. Then by means of the words we are able to recall to mind or think about what is in the psychic world. Or, if we experience something with which we are familiar in the psychic world, then it recalls to mind the words by which we designate it.

For concrete imagery, this association with words which recall ideas or images is easily enough seen. Concrete images regress to a deeper condition of colorless or imageless thought when words and their meanings are frequently used. When this has occurred, the use of words merely evokes a feeling of familiarity or knowingness, a kind of dilute, bland, undifferentiated experience in the psychic world. We do not then see anything qualitatively different or concrete. What we inwardly experience are things which we recognize as unlike each other but which we cannot further describe. For example, hope is not the same thing as conviction. Faith is not the same thing as desire. We use these words with the knowledge that each refers to a distinctive category in the psychic world. We know when something is not something else or when something is like something else, but beyond things being recognized as alike or different in the psychic world, we do not have the vivid concrete imagery which is associated with fresh visual experiences. Radishes are not turnips. We can just as reliably say that faith is not the same thing as desire, or that hope is not the same thing as conviction.

The great Swiss psychologist, Carl Jung, has a word for designating things in the psychic world which are not present as concrete images. He calls them our "collective unconscious." He uses the word "collective" because the psychic world is shared by all human beings. He uses the adjective "unconscious" since until we study this psychic world we are not aware of what is going on there, or at least we are not aware of the distinct processes and factors which are operating.

The fundamental principle of scientific search is that we become acquainted with what is in the psychic world by building up ties of association between things which are there and the vocabulary which we use. A schoolboy example of associating words with psychic objects is seen in his learning the Pythagorean theorem. He stares at the construction lines on the page. He reads the proof. Then it dawns on him in a flash of insight how it can be proved that the squares on the

legs are equal in area to the square on the hypotenuse. The words and symbols he associates with the sequence of ideas enable him to recall to mind the insights constituting the proof.

After we associate words with things in the psychic world or associate rudimentary actions of behavior with what is in the psychic world, then these things become differentiated from the amorphous mass of psychic experience. We become aware of what is there, not fully conscious in the sense of things which we see, but aware in the sense that we know what the different components in the psychic world are. We develop understanding of how these components interact or work together or lead to various results in the psychic world and in our own actions or the actions of other people.

The process of connecting words with things in our psychic world takes a great deal more time to take place than it does to talk of it. One can spend months, years, of one's life in inward reflection, patiently building up bonds of association between what is there and words by which one designates things in the psychic world. One turns over in one's mind the different contents by considering first this or that experience, until by a process which psychologists call differential association certain things in the psychic world develop stronger bonds of association with their verbal symbols than do other things. When this differential association has taken place, then a particular word or verbal symbol is able to call forth a specific meaning in the psychic world. Before differential association has taken place, all that words can evoke are the undifferentiated contents of our psychic world.

The principles of inner psychology include such laws as that of the association of ideas, or the repression of desires by conflicting experiences. These are principles which we comprehend through study of the psychic world. It is true that one can give an imitation of comprehending these things by talking like scientific students who do know what they are talking about, but this is not real insight, which requires that one become acquainted with one's own psychic world.

When through introspective study, one has succeeded in articulating a principle of innerpsychic processes, it is common to refer to such a principle as a theory. It has only the status of a theory, not a law, until either (a) it has been verified by many others pursuing the same introspective study, or (b) it has made possible the prediction of what takes place in the lives and actions of other human beings.

We may remark parenthetically that there are some in social science who insist that they make no use of introspection in the development of their theories. I think the proper reply is that either their theories are trivial and useless generalizations about tiny details of behavior, or else, subconsciously, without knowing it, the content of their psychic world is a source of theory. What goes on in the collective unconscious of mankind is frequently not discerned by those who have their blinders on and insist they operate purely at a level at which behavior can be seen and touched. When one

reads their books one is strongly impressed by the extent to which behaviorists use words whose meanings are in the psychic world. Not even a behaviorist can write intelligently without using such words as think, desire, or belief. He may squirm around and try to give these words some purely behavioristic meaning. But the words would never come into his mind and they would mean little to his readers unless the words had this overpowering psychic reference. His theory comes out of the psychic world. How much more effective it is to study the psychic world systematically as a source of theory.

We now come to the question of how theory in the social sciences is validated. By this we mean how theory in social science is proved or disproved to be true or false. By truth, we mean that theory gives a correct idea of the cause and effect connections in the psychic or behavioral world of human beings. By false we mean that the theory is an idea which contradicts what actually takes place in the psychic and personal world of people.

Validation of what is discerned in the psychic world takes place first, when the same researcher is able to repeat again and again the same findings. When one becomes thoroughly familiar with things which are in the psychic world, one develops a sense of at-homeness in using psychic categories. One feels a high degree of validation as far as one's own insights are concerned. Validation of what is in the psychic world takes place in a second way when other researchers reflecting upon their own psychic worlds are able to confirm again and again the phenomena or principles of cause and effect which are present.

At a third level, validation takes place when behavior predicted upon the basis of psychic knowledge proves to take place. In my own experience in working for the Parole Board in Illinois, we constructed a psychic picture of the motivation of the man considered for release. Upon the basis of our understanding of his goals in life, his beliefs and attitude towards others, and his own abilities we made a prediction as to whether he would return to crime or whether he would follow a law-abiding employment. Part of our problem was to ascertain accurately just what is going on in the offender's psychic world. To the extent that we were able to pierce his verbal defenses and find out what sort of man he is really like, we were able to make accurate predictions about what the man would or would not do. When these predictions of going straight or going crooked are verified, the intervening concepts and principles dealing with cause and effect in the psychic world are validated.

This third level of validation is not complete because alternative theories may lead to the same prediction. When the prediction is verified it may still be uncertain which of two theories which fit the data is the correct one. However, a test prediction can often be set up which will decide between two psychic theories. When the test prediction is verified, this decides which of the two theories gives a better fitting explanation of the facts.

We have been using the terms "verify" and "validate" interchangeably. Actually the meaning of "valid" or "validated" is somewhat more restricted than "true" or "verified."

A scientific finding may be correct and still be a useless piece of information. The term valid has come to mean not only verified but also scientifically worth something. If scientific knowledge is meaningful it is worthwhile. Specifically, scientific knowledge is valid if it has its roots in the psychic world. Valid scientific knowledge is *par excellence* knowledge of the psychic realm. Trivial behavioristic knowledge by contrast is lacking in validity, since it is relatively valueless.

Related to the question of validity of scientific findings is the question of validity of language used to describe the findings. One of the things which has plagued the advancement of social scientific knowledge is the shifting and multiplying vocabulary which social scientists seem to have a weakness for developing. This tendency to proliferate vocabulary stems more than anything else from the desire of mediocre men to be innovators. If they are incapable of developing any genuinely new insights, they make pretense of innovating by merely changing the vocabulary. Usually the vocabulary changes are for the worse and not for the better. The result is that valuable insights in the storehouse of human knowledge become obscured and forgotten. It is only possible for the storehouse of human knowledge about the psychic world to be transmitted from generation to generation if there are effective vocabularies for transmitting these insights so that each new generation can discern for itself the wisdom of the past.

In my opinion the most effective remedy for the wasteful multiplication of vocabulary is to define our psychic concepts in terms of simple concepts of arithmetic and geometry, and then to represent our findings by means of diagrams or charts. Whatever is diagrammed can be improved upon in the light of further research. But the improvement is only done by making changes in a diagram already in existence. One does not discard ninety percent of one's vocabulary, as is so often done, in order to improve the remaining ten percent. Instead, the diagrams become a firm foundation and a point of departure for further knowledge.

Moreover, these diagrams have the great advantage in communication that they represent a complex situation by one geometric picture. They are useful for communicating large amounts of psychic detail at one time. I look for large improvement in psychology through the use of systematic diagrams. This is not the place for me to digress upon the nature of some of the diagrams upon which I have been working myself. It suffices to say that I speak from personal research experience when I warmly recommend this means of representing psychic knowledge and of communicating this psychic knowledge to others.

We have now pretty well covered the ground in describing theory formulation and validation in the social sciences. In the light of what we have been say-

ing I think it is now of spiritual, as well as scientific, value for us to consider theory formulation and validation concerning man's spiritual knowledge. Man's spiritual life, in so far as it is subject to verification, takes place in the psychic world.

It is quite true that there are matters of fundamental spiritual importance, such as the existence of God beyond human experience and the existence of life after death, which are of tremendous importance to followers of Christian doctrine. These questions are matters of religious philosophy. Clear and compelling answers are given in scripture. If one wishes to evaluate these answers from a standpoint of what intelligent philosophical inquiry leads one to believe, this can be pursued as an academic exercise, but of course it is not a problem within the scope of social scientific or psychological work. For myself I take what is set forth in scripture as true because it has been given forth under the leading of the Holy Spirit of God. At the same time, intelligent philosophizing leads me to believe that the universe only becomes intelligible if one recognizes that there is an intelligent mind at the center of its operations and processes. If I were travelling through the woods and came upon a house and a garden, what would be more natural than for me to assume that a living being dwelt there? Likewise as one searches the innermost recesses of the atom or the outermost reaches of space, what is more natural than to conclude that all of this great universe resulted from an infinite creative mind? Similarly, what I know of life teaches me that God is good. What is more natural than for me to believe that God will continue to care for His children after death. To me, it is incomprehensible that God would lavish loving care upon us for the short space of a few years and then consign us to oblivion. This is philosophy, and I introduce it to show the contrast between philosophy and science.

What can be said about man's spiritual life from the standpoint of research into the psychic realm? To me the fundamental fact about the psychic world of all human beings is that here is found the Holy Spirit as a manifestation of God. We cannot see or touch the Holy Spirit. We feel the effects of the Holy Spirit. The Holy Spirit gives utterance through our actions and our speech when responses of which we are capable or words have become associated with the reality of the Holy Spirit in our lives. These associations become established through Bible study, through religious education, and through experiencing the Holy Spirit in the lives of others. We are then able through the meanings we acquire to appeal to the Holy Spirit in prayer. The words which we use become a direct address to that of God in our inner psychic world. There is, of course, vastly more of the Lord in the lives of others and outside and beyond human life altogether. But at least we stand on firm empirical ground when we speak of the Holy Spirit as a real scientific fact of our psychic life. This is a broadening of the word "scientific" from its narrow behavioristic concept. Psychologically, we are saying we must learn meanings of words to pray or to hear the Holy Spirit.

Jesus said, "No one cometh to the Father but by me." He pronounced the basic psychological fact that we are unable to apprehend the Holy Spirit of God except through the words, the teachings, and the actions of Jesus; and of the Apostles and Saints, since that time, whose lives are a living fulfillment of Jesus Christ in word and deed. My associates in the psychology of religion come to me and say, "Isn't one world religion as good as another." I answer them by saying only in Christianity do we find a full and complete revelation of God, and only by using the Word of God as set forth in scripture are we able to establish effective contact with the spirit of God in our lives.

We read in the First Letter of John, for example, that God is Love, and that he who loves his brother knows God and that he who does not love his brother does not know God. This turns our attention to the basic experiences in family living, in friendship, and in service to the community in which we are able to find the Spirit of our Lord working.

The psychic doctrines set forth in Holy Scripture are much more than theories; they are spiritual laws of our existence. Jesus' plan for salvation is an incontrovertible law which human beings cannot escape. Either they are saved and made whole and healthy and cared for by our Lord for eternity because they surrender to His will, or else they deny Him and are condemned to spiritual death. We regard these principles as laws because they have been verified again and again in the lives of human beings through history. They are verified again and again in the lives of each one of us as individuals if we dare turn away for a fleeting instant from the commandments of the Lord. They are verified in the lives of our contemporaries as we see them succeed or fail in their confrontation with God.

There are those in psychology, all too numerous, who fail to verify in their lives the things of which I speak. To me, a man who denies that it is possible to have a million dollars, merely because he has never

earned a million dollars is exactly like the scientist who denies the Holy Spirit because he himself has never had or recognized that experience. It is necessary that one study scripture and realize that we are saved by faith in and loyalty to Jesus Christ our Lord. It is necessary to go through a long period of spiritual development and devotion, of prayer and Bible study, of fellowship with those who themselves have found Jesus Christ in order that one can come into the possession of the great spiritual wealth of Jesus Christ. Then and only then can one say that one has found in one's own life his precious Lord and Savior, worth far more than many millions of dollars.

While one is patiently waiting and learning, faith is required that the promised spiritual blessings will eventually be found. In this sense, faith is the assurance of things unseen. It is a kind of scientific faith that in the fulness of time, the promised fruits of spiritual living will ripen and will be given to one. Faith in this sense means believing scientifically until things are fully proven.

In conclusion let me say that this fresh approach to spiritual life, the psychological side of Christian Doctrine, is going to produce a great spiritual revival. For too long we have been bedeviled by theories of existentialism and what not, which would have us believe that God is an idea for whom we have no proof. Now we have both the proof by Holy Scripture and what we as psychological scientists see prevails in the psychic world. No longer need we take a back seat and be pushed about by the sloppy logic of pseudo-scientists. We can go forth and use the weapons of science to defeat the destroyers of the Gospel at their own scientific game. I challenge our adversaries who advocate false doctrines to join in debate. I welcome such debate, as it will clear away the morass of false doctrines which afflicts the world. In humility and prayer let us go forward to labor on the plains of history as God ordains that we do.

MOSES AND THE EAGLE:

FREDERIC R. HOWE* AND GEORGE F. HOWE**

A statement in Deuteronomy 32:11 seems to imply that the eagle can carry its young upon its back. Critics have challenged the accuracy of this assertion. A study of the Hebrew text shows that the phrase and action in question may refer directly to God and not to the eagle. But if the activity was intended to be that of an eagle or

eagle-like bird, there is evidence from natural science to demonstrate that at least one species of eagle can carry its young astride its back. With either possible interpretation of the text, the Scripture is accurate in its treatment of the data.

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In his song of praise to the Sovereign God as recorded in Deuteronomy, Moses made some detailed pronouncements about the habits of the eagle with these graphic words:

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As an eagle stirs up its nest, hovering over its young, spreading its wings to catch them and bearing them on its pinions, so the Lord alone was guide to them, and no strange god was with Him. (Deuteronomy 32:11,12, Berkeley Version).

In her scholarly treatise on Bible birds, the ornithologist Alice Parmelee has recognized the valid description of an eagle's nest given in the first portion of verse 11. Assuming that the words "spreading its wings to catch them and bearing them on its pinions" in Deuteronomy 32:11b referred to a mother eagle transporting a young bird upon her back, Miss Parmelee challenged the accuracy of Scripture as follows:

Sometimes the adult birds hovered over their fledglings and fluttered encouragingly around and under them. At a distance the eaglets appeared to be carried at times on a parent's wings, but this is not the case. Although grebes, swans, and some other birds paddle through the water with their young ones nestled on their backs, there is no reliable report of any bird actually flying with a smaller bird on its back.¹

A study of the Hebrew text of Deuteronomy 32:11 is necessary to explore briefly this apparent problem, and to understand the breadth of possible Biblical interpretation. The verse appears in a context of Scripture which sets forth vividly God's Sovereign care and protection of His people Israel. Moses expresses his praise to the Almighty God in this major segment of Deuteronomy. He compares, in this 11th verse, the activity of a parent eagle with reference to its young, and the action of the Lord with reference to His people Israel.

The point of comparison between the conduct of God towards Jacob and the acts of an eagle toward its young, is the loving care with which He trained Israel to independence. The carrying of Israel upon the eagle's wings of divine love and omnipotence was manifested in the most glorious way in the guidance of it by the pillar of cloud and fire, though it was not so exclusively in this visible vehicle of the gracious presence of God as that the comparison can be restricted to this phenomenon alone.²

Many students of the Biblical Hebrew text of this passage believe that the first part of verse 11 refers strictly to the work of the eagle, but the last part refers to God alone, and His action. This view is exegetically defensible, and is reflected in the American Standard Version, which reads as follows: "As an eagle that stirreth up her nest, That fluttereth over her young, He spread abroad his wings, he took them, He bare them on his pinions."

Following this approach, the interpreter can show that the descriptive words of Deuteronomy 32:11b do not apply at all to an eagle. This is one avenue to follow in refutation of the charge that the Bible reports inaccurately here on events in the realm of natural science. The verse can just as easily be translated in this manner: "As an eagle, He (Jehovah) stirs up His nest, He hovers over His young, He spreads abroad His wings, He takes him (Jacob or Israel), He bears him on His pinions." This suggested translation attempts to reflect upon the exact gender of the Hebrew verbal suffixes, translated by the English pronouns "his" and "him." Specifically, thus, the action of "bearing him on His pinions" refers descriptively to

God. The interpretation here then harmonizes with a major cross reference found in another book written by Moses, Exodus 19:4—"Ye have seen what I did unto the Egyptians, and how I bare you on eagles' wings and brought you unto myself (ASV)."

Inasmuch as there is some flexibility of translation in this verse, some prefer the wording found in the Authorized Version, or the Berkeley Version. It is at this point that the problem seems to arise. As noted Alice Parmelee feels that this description cannot apply to an eagle. The author of the article dealing with eagles in the International Standard Bible Encyclopedia also felt that this verse, if limited to the description of the flight of the eagle, would be incompatible with facts of natural history.³ Accordingly, she limited herself to the ASV translation.

The Hebrew word *naser* itself might provide another avenue of exploration. By lexical definition, this word covers quite a descriptive span. Brown, Driver, and Briggs states ". . . griffon-vulture, eagle . . . *naser* may be a more comprehensive word, incl. both vulture and eagle."⁴

The *New Bible Dictionary* summarizes the linguistic evidence by stating:

Some true eagles are still found in, or travel through Palestine: Heb. *naser* is probably as much a generic term as the English word "eagle". It could include all large birds of prey, and the many references, most of them figurative, give few clues as to the species.⁵

It would seem from Old Testament usage that where the context of the passage supplies details, this word certainly includes the vultures within its descriptive limits. There is enough evidence, however, to allow the term to refer to the true eagle. If the words here in Deuteronomy refer to the behavior of an eagle, then we must explore the observations made concerning these birds to see if anything like this may actually occur.

In his classic work on birds of prey, Arthur Cleveland Bent presented much detailed information about the nesting habits of the golden eagle, *Aquila Chrysaetos canadensis* (Linnaeus). He reported material derived from an observation published in "The Condor" as follows:

Dr. Loye Miller (1918) published the following account, as given to him by one of his students:

Last summer while my father and I were extracting honey at the apiary about a mile southeast of Thatcher School, Ojai, California, we noticed a golden eagle teaching its young one to fly. It was about ten o'clock. The Mother started from the nest in the crags, and roughly handling the young, she allowed him to drop, I should say, about ninety feet, then she would swoop down under him, wings spread, and he would alight on her back. She would soar to the top of the range with him and repeat the process. One time she waited perhaps fifteen minutes between flights. I should say the farthest she let him fall was 150 feet.

My father and I watched this, spellbound, for over an hour. I do not know whether the young one gained confidence by this method or not. A few days later father and I rode to the cliff and out on Overhanging Rock. The eagle's nest was empty. (Miss F. E. Shuman.)⁶

Another interesting observation is recorded by S.

R. Driver, in his commentary on Deuteronomy included in the *International Critical Commentary* series. Driver presented the position on this verse that the word *naser* should be translated "vulture." He then cites without comment this material:

W. L. Alexander quotes from Davy, *Salmonia*, p. 87, the following pertinent illustration: "Two parent eagles on Ben Weevis were teaching their offspring, two young birds, the manoeuvres of flight." Rising from the top of a mountain, they "at first made small circles and the young imitated them; they paused on their wings waiting till they had made their first flight, holding them on their expanded wings when they appeared exhausted, and then took a second and larger gyration, always rising towards the sun, and enlarging their circle of flight, so as to make a gradually ascending spiral." See also Bochart, *Hierozoi-con*, ii, 181.⁷

The reader will notice carefully that the Hebrew text of Deuteronomy states ". . . he takes *him*, he bears *him* on *his pinions* ('*ebrâtô*')" (italics supplied). It would thus appear from these observations of true eagles that parent birds possess remarkable agility, and actually have been seen in the cited instances to support, either on the strong pinions, or on the area of the back, the young eaglet in its initial "flight training" program!

In summary, we have attempted to show that Deuteronomy 32:11 has no conflict with the realm of observational science. One species of eagle has been reported to carry its young astride its back, and it is clearly possible that Moses had observed a similar event in an eagle species. A footnote from the Berkeley

Version of the Bible is instructive at this point:

Moses as shepherd had watched the training of eaglets, thrust out of their nest, hurled from the sheer rock; then the mother swooping down as they struggled, bearing them up, letting them go again, to catch them; so repeatedly. So God trained Israel—and still trains us.⁸

Scripture, which according to its own self-testimony, is God's unique revelation to man, is accurate in its treatment of all data.

REFERENCES

1. Parmelee, Alice. *All the Birds of the Bible*. New York: Harper and Brothers Publishers, 1959. p. 99.
2. Keil, C. F., and F. Delitzsch. "The Fifth Book of Moses," in *Biblical Commentary on the Old Testament*. Translated by James Martin. Grand Rapids, Mich: Wm. B. Eerdmans Publishing Company. 1951. p. 473.
3. Stratton-Porter, Gene. "Eagle," *The International Standard Bible Encyclopedia*. Edited by James Orr, Grand Rapids, Michigan: Wm. B. Eerdmans Publishing Company. 1952. p. 885.
4. Brown, Francis; S. R. Driver; and Charles A. Briggs. *A Hebrew and English Lexicon of the Old Testament*. Oxford: Oxford at the Clarendon Press. 1907. pp. 676-677.
5. Cansdale, G. S. "Birds of the Bible." *The New Bible Dictionary*. Edited by J. D. Douglas. Grand Rapids, Michigan: Wm. B. Eerdmans Publishing Company, 1962. p. 154.
6. Bent, Arthur Cleveland. *Life Histories of North American Birds of Prey*. Part I. Washington, D. C.: Smithsonian Institution United States National Museum, Bulletin 167. United States Government Printing Office. 1937. p. 302.
7. Driver, S. R. "Deuteronomy." *The International Critical Commentary*. New York: Charles Scribner's Sons. 1916. p. 358.
8. *Bible*, English. Berkeley Version. Translated with notes by Gerrit Verkuyl. Grand Rapids, Michigan: Zondervan Publishing House. 1959. p. 216.

TOPICS TO BE USED AS DITHERING DEVICES IN THE CLASS ROOM

WILLIAM BASS*

This panel discussion is based on an article by Ralph H. Turner of Oberlin College entitled "Dithering Devices in the Classroom: How to Succeed in Shaking Up a Campus by Really Trying," and will explore the usefulness of several topics to be used as dithering devices on college campuses in the classroom situation. British machinery was kept vibrating and consequently running smoothly by these original dithering devices. Similarly, the educational procedure may be improved by the occasional discussion of unusual and inter-disciplinary questions. The following presentations are not attempts to exhaust the topics under consider-

ation, but merely efforts to present basic material for thought, discussion and the exploration of implications, problems, and facets of the topic and should be so understood regardless of the fact that the material is presented formally.

A seemingly significant, appropriate and usable dithering device is that of "the problem of demon possession in abnormal psychology." It would seem that this problem can be elaborated under a number of separate captions. In the first place, it should be indicated that demonic activity may or may not center in the phenomenon of possession. That demon possession exists is evident from Biblical and extra-Biblical sources. However, this may not be the central thrust of demonic activity. The importance and "work" of the demons

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may be more diffuse as in the cultural phenomena of a given period. Certain ideas in a given cultural period including our own may be demonic, while other ideas are neutral or even God-given though both are seemingly implications of the natural realm. The spiritual orientation in ancient civilizations or the more modern materialistic or socialistic orientations may be "sponsored" by demons. To speculate a bit, swarms of demons or a single one may be behind any given phenomenon. Now the thrust of this is simply that demon possession should not be overly magnified in relationship to abnormal psychology. If possession is at the core of what demons are trying to accomplish, it seems at least plausible that few of abnormal phenomena or even none of them may involve demon possession—or many or all of them may involve other forms of demonic activity. The Christian doctrine, that is, the Biblical doctrine of the world, is that it is a unified whole. It is a systematic, total orientation and the form of this orientation seems to change. Therefore, demonic activity may be incorporated differently from period to period. Possession may be the rule at a certain period and important in certain individuals, but it may not be of uniform significance.

A second and very important thrust in this regard has to do with the Biblical record—especially the Gospels—which clearly recognize the difference between abnormal phenomena and demon possession. Abnormal mental phenomena are recognized, but so is demon activity and sometimes both are attributed to a single syndrome (Mark 3:20-22). Thus, while we may use the Scripture to defend the fact of demon possession and its significance for abnormal phenomena, we may not use it to defend a one-to-one relationship. The door is left open by the Bible to hold that an abnormal phenomenon is in fact non-demonic in any given case, although it may be. Discussions along this line often make the Bible say too much or too little. In considering this matter, we must be careful to give the Gospel accounts full credence—when we intend to be examining the matter from a Christian perspective.

A major thrust of C. S. Lewis' *Screwtape Letters* may constitute our third emphasis which is that demons are notably "flexible." Wormwood instructs Screwtape to change tactics from time to time and to use different tactics with a given individual. This is probably correct, for a Biblical study of angelic powers such as that of Calvin Schoonhoven, *The Wrath of Heaven*, indicates the truthfulness of this perspective. Angels come in various kinds according to Schoonhoven. There are demonic beings; there are wholesome beings, and there is a sort of quasi-angelic being of the "Peck's bad boy" type who actually gets into "devilment." The latter are given the task of antagonizing the saints and they love it. That good angels may be "mean" in the Biblical tradition gives a flexibleness not only to individuals but to the kinds of angelic creatures. Perhaps some of what is attributed to demons is really performed by these rather unwholesome creatures. The writer is impressed that the powers in Ezekiel seem at times less than personal, at least from the basis of

human comparison they are almost mechanical. Thus the range of kinds of personages and the range of what they can do leaves a vast field with which to try to integrate abnormal behavior. However, it must be recognized that demonic and even angelic tendencies lend themselves very well to the discomfort symptoms and maladjustments of some kinds of mental illness. It can well be held that, in some cases, even minor disturbances such as psychopathic personality or a tendency to curse may be of demonic influence or even possession. The gist of what is being said here is that we cannot be too hasty in making identification, but that Biblical truth indicates a great sphere of possibility for this thing.

Since the writing of G. Stafford Wright's, *Man in the Process of Time*, we have to follow also the fact of the vast flexibility or richness of human personality and not too quickly attribute foreign influence to the motions of the human spirit. This is the fourth thrust. Wright finds man to be capable of extra-sensory perception, extensive intuitive capacity, etc.—almost anything short of the act of levitation which Wright will not guarantee—all on the basis of his human potentiality. So again we should not be too quick to attribute demon possession to any particular syndrome when, in fact, man is nearly as flexible as the demons with untapped resources in himself which he may exercise and learn to exercise completely aside from any touch of the supernatural. Wright's presentation is very well balanced and one cannot too quickly dismiss it in a consideration of this kind.

On the basis of Biblical theology, it can be maintained that demonic attacks must be interpreted as a basic effort to thwart the establishment of the Kingdom of God. It is very clear that the integrating factor of the entire flow of Biblical truth is the preparation for the invasion of the Kingdom of God, both the preparation and the invasion taking place in several stages and consummating in what we know as the preparatory body, the Church, the subsequent Messianic Kingdom and the turning over of that Kingdom to God. Now this basic understanding which is currently so widely accepted with regard to the thrust of Biblical truth has to be the central and initial model of Biblical interpretation. Demonic activity has to be seen within this framework. The cross was the means of defeating demonic powers according to New Testament theology. Demonic efforts would be directed at a cosmic level toward thwarting the Kingdom of God and the final promotion of an anti-kingdom or pseudo-kingdom of God, with all the overtones of the apocalypse. This is another reason for believing that demon possession may not be at the heart of demonic activity during this age, but that the effect may be more diffuse. Since it is necessary to read the relationship of demons to human personality in this regard, it is most plausible that demonic effectiveness would be greater if cultural means were utilized rather than arbitrarily attacking a single personality at its source. On this basis, many cases of abnormal phenomenon would be a by-product of the broader social influences of demons. Thus, prob-

lems which men like Rollo May would attribute to the modern social milieu may be so interpreted while not denying demonic activity. Kurt Koch has recognized the traditional psychological problems as existing alongside the existential ones and the problem of possession. Demonic activity could thus be direct (in possession) or cultural and existential. Newer psychology from non-directive therapy on to reality therapy seems to fix the genius of abnormality within the framework of human responsibility and out of the area of seizure by an outside realm. This may be regarded as correct, while not ruling out the Biblical framework regarding demon possession.

There are thus many facets, only some of which have been suggested, to the matter of demon possession and abnormal psychology. The field is open for extensive dithering in this regard. Surely for the Christian student in the Christian college this is an open area for discussion and could well prove profitable both to the student and to the Christian community at large.

Now a second question which may be examined here as a dithering device is that of the relationship between the environment and original sin, under the caption "Environment and Original Sin." Perhaps seeing the concept of original sin in its relationship to Western thought and Biblical truth is one of the most valuable approaches that can be made to this dithering question. In the first place, it must be recognized that individualism is a late Western phenomenon. Allan Watts' correctives along this line may be too strong. Watts suggests that there is no individual thought or individual personality, but that following the Hindu doctrine, all mind or thought is one. Certainly departure from the concept of an Aristotelian world-mind in various phases of its decline has allowed an individualism, an individualism which incorporates aspects of an ancient self-realization tradition, to come to the fore. Individualism may be regarded as an interlude in a 19th century phenomenon of modern thought which has now passed. Original sin as taught from the Reformation on has largely been a matter of individual sin. This is not to say that theologians and even Biblical theologians have not tried to put the matter in a better perspective. But for all this, the development of frontier revivalism and later evangelistic efforts have made original sin a matter which belongs to "you, you and you." In terms of the topic under discussion, this individualism would militate against an environmental context for original sin which is not necessarily justifiable. So that, on this basis alone, at least, one might move from this individualism toward an environmentalistic concept while still holding some sort of doctrine of original sin.

What is original sin? If we neglect the historical development of the doctrine, it becomes a word which Christians use for a number of factors contained within the Bible and some also found within other experience. An enumeration of these must include the following: since the Fall, man has come under Satanic control; death has passed upon all men; the will of man is subject to sin; he is a sinner, according to some confessions of faith, both by nature and by choice; Adam

became a sinner and his progeny was sinful either because they were simply descendents of his or because his ability to bear progeny was a sinful process. Again, original sin means that man is lost. He is away from God. He has been separated from God. Further, it means that man is part of the world, a world that is separated from God and has some degree of autonomy away from God and that this autonomy is evil.

Now if we emphasize the control of Satan, the death of all men, the fact that Adam and his seed are one and that man is part of a sinful world process, it is very clear that environmentalism is involved, for the environment is implied in each of these facets of what original sin means according to the Bible. Depending on how one wishes to interpret the fact that man's will is subject to sin, it could also be held that his will is subject to sin because of external influences in part, although this probably will not totally lend itself to environmental interpretation. The idea that man is lost and away from God involves him in the environment in so far as he becomes what Van Til would call an autonomous individual or in that he partakes of a totally sinful world. But certainly in analyzing sin in this way, we may see that many of the facets that we have called original sin do have their environmental aspect.

At the pragmatic level, it is certainly observable that group life, modern collective structures and customary associations, do contribute their share to sinfulness. This is especially true in the matter of eliciting sin in small children and in teenagers. Of course, who can deny that the same thing takes place in adult life? Rousseau may have been correct, and there are at least certain kinds of sins that a person could avoid were it not for the influence of the environment. Now this can be countered with the idea that properly original sin does not include these environmental matters. Yet, reformed theology where the emphasis is upon original sin holds that man is totally sinful.

One of the most outstanding truths along this line is of a historical nature. Simply stated, both Augustine and Pelagius emphasized the social aspect of sin in one way or another. These were the two famous gentlemen who set up the question between original sin and sin as a matter of pure individual acts. But it must be recognized that Augustine did not think of original sin as a purely individual matter, but rather in terms of the "mass of perdition" thereby implying the totality of the mass of humanity in sin. Pelagius, on the other hand, emphasized the social dimension of sin. So at that basic juncture it may well be held that the concept of original sin started with both of the contestants in their own way emphasizing the social aspect. Then too, it can be emphasized that the New Testament (Ephesians 2:1ff) speaks of Satan as the prince of the power of the air who now works in the children of disobedience, implying at least that there is a social dimension. Revelation, in the Laodicean epistle, seems to indicate a matter of group conformity and this probably in an eschatological sense. Classical Protestant liberalism recaptured something of this when it held

that the social body was a means of corruption. Proverbs has stated that evil companions corrupt good morals and it is certainly evident that group eschatological life upon the planet in which we live is an environment which caters to and encourages sin.

In this matter as well as in regard to demons, we have to recall the fact that the world is cosmos, and the cosmos today is largely the realm of the mass media, consumer orientation, pyramid climbing, the cult of the girl, etc. Sin in its deepest significance, from lying on the income tax to sexual immorality, enters the world not via basic human passions, but via the life of the group and the teachings and impulses of the group. All flesh is one and all flesh is as grass and flesh unites in mass collectivity now that the rules of the game have been dropped. Now since "Western Christendom"

has fallen and the "world has come of age," something has to supply the vacuum. This something else is of a social dimension, is eschatological and heightens both the level and intensity of God's current displeasure. The environmental dimension also seriously threatens the Church of God in these days as the deceiver comes to us via this indirection. All flesh is as grass; man is involved in sin in the mass. How suitable and meaningful for current dithering.

The tragedy is that those who believe in original sin somehow fail to see our current sociological situation in perspective, while those who scarcely believe in what may properly be called original sin have become experts in the field. Let us dither on this in the classroom then, and hope that it contributes to the clarification of the life of the church in the world.

THE RELATIONSHIP OF PERSONALITY MODES TO RELIGIOUS EXPERIENCE AND BEHAVIOR

PAUL F. BARKMAN*

In the attempt to construct a psychological theory of personality it is customary to view man as having (a) a structure—the anatomy; which structure is related to (b) functions or processes—at least partly described by physiology and psychology; which processes are related to the (c) content of his environment. Man, furthermore, has a (d) history. Each of these is related to the others, and each is more or less dependent upon the others, and may be more or less modified by the interaction.

It is important to pause along the way long enough to state that process not only influences content, but content influences process as well. The behaviorists find no difficulty with that statement, but the more orthodox psychoanalysts have tended to deny it. A simple illustration of the influence of content on process is that of the violent death of a parent in the presence of a small child in which case the traumatic effect of that content may distort the child's psychological processes for life.

One dramatic example of the interrelationship of history, structure, function, and content is the war-time story of the athletic soldier who came to consciousness after battle and was told that he had lost two limbs; whereupon he exclaimed in despair, turned to the wall, and soon died; even though physicians regarded the physical trauma as inadequate to this effect.

It has been somewhat characteristic of psychologists to be more interested in structure and process than in other aspects of the person. They frequently disclaim interest or competence in content, preferring to leave that to the educational system, the parents, the culture, or whoever is interested. Their appropriate preoccupation, they feel, is to assure a man that he will be able to reason efficiently, perceive well, relate realistically, tolerate frustration, and engage in other such processes without deficit or distortion. Or, in popular language, it is the psychologist's business to help men think straight, and it is a man's own business what he thinks about.

Because religion has so often been regarded as content, this preoccupation with process, together with a failure to recognize the reciprocal effects of content upon process, have caused religion to be brushed aside with such labels as "the unanalyzable residue" of psy-

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choanalysis, or as "orthogonal with psychology."

Before pursuing that line of thought, we must recognize that for others religion has not been regarded as beside the point but as related process.

For the analysts it has often been regarded as either neurotic or psychotic process, and thus a displacement and distortion of reality. (Note that not all analysts take this position.) For some religionists it has been regarded as the dynamic panacea which transforms personality, sustains integration and creativity, heals physical ailments, and orients man to cope intuitively and effectively with reality.

If it were not for a recent fresh wind of scientific research and relatively unimpassioned theory which has blown through the emotional smog of ignorance and emotion in the past decade, such a discussion as this would rapidly descend into the familiar old exchanges which were characterized more by heat than light. Fortunately man's religious behavior has come under much more careful scrutiny lately, with anthropologists and sociologists leading the way, and psychologists entering increasingly into the task.

The first awareness that has resulted is that religion has been grossly oversimplified by both its exponents and its detractors. Let me make a quick review of some of the discriminations which have begun to appear.

Michael Argyle (1959)¹ reviewing extensive research and theoretical literature has discussed the theories of religious behavior and belief under the following headings: Religion as social learning, as a response to frustration, as a reaction to intra-personal conflict and as conflict with the environment, as a fantasy father-figure, as obsessional neurosis, as a response to cognitive need, and as a response to physiological processes. Without entering into his findings, one may summarize his conclusions by saying that, in his opinion, most of these theories are descriptive and explanatory of certain groups of religious persons when they are classified into the usual sociological rubrics of church, denomination, sect, and protestant liberalism; but that no one theory is applicable throughout all religion.

For this paper, the single most significant awareness that comes from Argyle's work is the documentation that religion—even when defined as narrowly as the Judeo-Christian context—has a great variety of meanings and functions which differ for recognizable groups and classes of persons.

In view of the involvement of religious behavior in the psychoses and neuroses, such knowledge makes it possible to be more precise about the meaning of religious behavior in the disturbed personality, and the part it may or may not have had in the etiology of the disorder, and how (or whether) it should be included in the process of treatment.

Sociologist Gerhard Lenski² did a survey in 1961 in Detroit of the religious factor in the political, economic, and family life of that city, and found himself driven by the evidence to distinguish between two kinds of religious intensity that have previously been classified together. He found that "doctrinal orthodoxy" and "devotionalism" were both present among

religious people, but not nearly so often in the same persons as one might have imagined. The Pearson product-moment correlation was only .23. A surprisingly low correlation. The sample included the usual American proportions of Catholics, Jews, and Protestants. Throughout the very extensive study these two factors of religiosity were repeatedly, though not always, related differently with various kinds of attitudes and behavior.

"Devotionalism" was defined by the frequency with which a person had individual prayer, or asked God what to do.

Quoting from Lenski's concluding chapter, "On the whole, doctrinal orthodoxy appears to be a type of religious orientation which is linked with (and we suspect fosters) a *compartmentalized view of life*. . . one's religious commitments are irrelevant to one's political and economic actions and other aspects of secular life . . . Devotionalism, by contrast, seems linked both with the spirit of capitalism and with a humanitarian outlook when confronted with problems of social injustice."³

Gordon Allport has defined similar variables under the title of extrinsic and intrinsic religion. Extrinsic religion is "a dull habit, or a tribal investment to be used for occasional ceremony, for family convenience or for personal comfort. It is something to *use*, but not to *live*."⁴ That is to say, "it is not a value in its own right, but is an instrumental value serving the motives of personal comfort, security, or social status."⁵ It is the kind of religion responsible for the slogan, "Go to church and leave your troubles there."

Allport defines intrinsic religion as an orientation that regards faith as a supreme value in its own right.⁶ ". . . it is not primarily a means of handling fear, or a mode of conformity, or an attempted sublimation of sex, or a wish-fulfillment. Earlier in life it may have been all of these things. But now these specific needs are not so much served by, as they are subordinated to, an overarching motive. . . intrinsic religion has nothing to do with formal religious structure."⁷ He says there are intrinsically religious persons in all faiths.

He cites several studies which show a clear and unvarying positive correlation between extrinsic religion and prejudices toward race and religion; and a corresponding negative correlation between intrinsic religion and such prejudice. The subjects were drawn from both white and Negro, and from Jewish, Protestant, and Catholic churchgoers.

He continues to predict that, "mental health will vary according to the degree to which adherents of any faith are intrinsic in their interpretation and living of their faith,"⁸ but he does not support this statement with research. His predictions challenge research.

Such discriminations as the foregoing are exceedingly useful in the scientific approach to religious behavior.

In the spirit of such efforts at refined discriminations, the following hypothesis is presented relative to the relationship of personality modes and religious experience and behavior.

It is proposed that there are at least four basic

personality modes which are closely related to the central character of the varieties of Christian behavior. (Brief discussion with those who are acquainted with other religions seems to encourage the idea that these modes may apply elsewhere as well, but the theory does not say so at this time.) These four modes are verbal, affective, social-relational, and transcendental.

Modes can be thought of as relatively distinct and abiding characteristics of personality which are dynamic and somewhat determinative of behavior. For the purpose of this discussion, they are ways of cognition and of action or response. One might use the old term "personality traits", but the word "mode" is closer to the concept of a "style of life", and more in keeping with the observations which prompt this theory.

There is considerable evidence in all of psychology to support the idea that we perceive and conceive in light of our needs and styles of life; and there is no reason to feel that this would not be the same with the religious behavior of a person; but not much has been done to explore that aspect of human behavior.

There is also some evidence that these modes are not arbitrarily arrived at, but may indeed represent fairly universal human modules of personality. For example, the evidence from the Wechsler Scales of intelligence seems to indicate that people do differ with respect to verbal and performance aspects of intelligence, and research would support the idea that they find their existence and expression in recognizable degrees in certain named categories of persons. (Schizophrenics, for example tend to be high on the verbal scales and low on the performance scales, while juvenile delinquents are low on the verbal and high on the performance scales. These are somewhat gross statements, but close enough for our example.)

Gilford gives another partial confirmation of the foregoing list of modes in his summary of the factor-analytic study of personality traits. "The primary traits of temperament can be grouped in three broad classes, depending upon whether they refer to a person's attitudes toward his general environment, to his emotional dispositions, or his inclinations in dealing with his social environment."⁸

When one thinks of verbal, emotional, and social modes as possibly the basic human dispositions to perceive and deal with the world; and then regards the nature of the Protestant Reformation, there is suggested the idea that these modes may be closely related to the central emphases of the main segments of that great social and religious epoch.

At the time of the Reformation, perhaps for the first time in Christian history, large numbers of people were given relatively great freedom both to shape their religion and to shift their allegiance to the particular shading of Christianity which seemed most congenial to them as individuals. This freedom was far from complete, but sufficient to allow considerable alignment by personal choice. Thus, both reformers and adherents were free to shape and express religion in a manner that seemed most congenial to them as persons.

All appealed equally to the Scriptures, and doubtless all were faithful to the Scriptures within their conscience. That personality modes were related to the results, is rather evident, although no claim is made that Christianity was distorted thereby.

It would appear that those whose basic personality tendencies were more predominantly verbal tended to conceive of Christianity most readily and easily in words, and in verbally mediated concepts such as theologies—which are essentially verbal. They defined Christianity as the adherence to these verbally expressed ideas. Their watchword was "faith". For them, to be a Christian meant to *believe* the doctrines. The verbal mode found its strongest expression in the Reformed and Lutheran churches. They were the Believers. To the extent that congregations and individuals are orthodox Calvinists or Lutherans, this is probably still quite true.

A second mode is affective or emotional. For these people, Christianity was an experience. They developed a whole system of feelings and emotionally meaningful behavior by which they defined Christianity. Communion with God, conversion experience, and the manifestations of the Holy Spirit by way of glossolalia and faith healing were some of the significant concepts and expressions of their Christianity. To them the great watchword was not "believe", but "experience." The Pietistic movement, in which this found its strongest expression was not very much interested in theology. They were the "*born again*" ones, the "*converted*", and the "*saved ones*." They scornfully stated that the devils also believed and trembled, and that the Reformers were cold intellectuals whose religion never went beyond their heads to their hearts, because they substituted intellectual pride for humble communion. The Methodists and the Pentecostals are among the well-known heirs of this tradition, and to the extent that they are orthodox, these attitudes and expressions are rather characteristic of them.

There is little meeting of minds (or hearts) between the Reformed and the Pietists to this day. One can hear a Presbyterian say that the Methodists have never produced a good theologian in their entire history; and hear a Methodist ask what that has to do with Christianity.

The third movement of the Reformation, that of the Anabaptists, contended that ideas and beliefs had their place, and emotional communion with God was good, but that a Christian is not measured primarily by these. He is ultimately measured by his relationship with people. Faith and experience were validated in observable behavior. Their mode was activist, or perhaps more correctly in Guilford's phrase, social-relational. A Christian, to them was a person whose character and behavior were modeled after the example of Christ and the Apostles. Among those congregations which remain closest to the Anabaptist tradition, even to this day, a person is not admitted into membership until he has demonstrated his Christian "walk", and has the public testimony thereto by the members of the congregation. The Anabaptists' emphasis on the personalness and re-

lational quality of Christianity rejected formal theology with outright suspicion, and instead gave every man the right and obligation to think through to his own understanding of the Scripture, and his own relationship with God. Their watchword was "be", and by this they meant "do". They were the original social workers of the Protestant church, and consistent with their teachings, also the first active pacifists. They called themselves (and still do) the Brethren.

Carried over from the older stream of Roman Catholic Christianity (which did, and still does, contain all four of these modes, expressed in its various ranks and orders) was what appears to be a fourth mode which focuses on the transcendental. There is some question about whether this should be distinguished from the affective mode, but there is evidence that they are not really the same. It expresses itself both in the liturgy of the high church ritual, and in the life of the mystic. Both the ritual and the mystic experience focus on "worship", which is the watchword of the transcendental mode. This is not the emotional, individualistically involved experience of the Pietist, but the selfless absorption into the greater, all-comprehending being of an ineffable God, wherein the individual is submerged, and it is usually a passive and receptive state. This is the "mysterium tremendum,"¹⁰ and the "wholly other" quality of God which Rudolph Otto, the anthropologist, has so well described, and which he proposes is the common element in all religions of every kind. It may be that Guilford's mathematical processes of factor analysis did not sort out this mode because the materials with which he was working did not contain so non-verbal a set of materials. The Episcopal church preserves much of this mode of religious experience and expression in our time, but it is also to some extent the heritage of some of the Lutherans. These are the Communicants.

Time and opportunity have broadened and blended the characteristics of the major denominations. This would be expected, if as in this theory, religious experience and expression are related to personality modes. It stands to reason that persons of following generations might not have quite the same predominant personality characteristics as their ancestors, while they still remain members of the same religious denomination. Thus there would be pressure to change the character of the congregation and the denomination. (This is not to exclude the intellectual pressures which come from competing theologies within the Christian church, but to add somewhat to our understanding of why they have an appeal.) Also, in so mobile a time as ours people move around and tend to join the churches which are geographically near their new location, thus the congregations tend somewhat to lose their identity. The typical large-city congregation of today has a bewildering mixture of denominational backgrounds among its members, and probably has many more adherents whose religion is extrinsic than intrinsic (to use Allport's categories). Thus, there are probably fewer "pure" congregations or denominations than formerly. Furthermore, these modes do not exist in all-or-nothing

quantities, but are likely all present in varying degrees in all people.

The theory is that where these modes are present in a manner that makes one or another particularly dominant, and where a person has reasonable choice of his religious expression, one will find that his religious expression is positively correlated with his personality mode.

It would seem that an approach of this kind to religious experience and behavior can help to explain how Christianity achieves its diversity while retaining its recognizable essential character. It could also help us to understand somewhat more accurately the meaning of Christianity to the individual.

For the churches it might open ways of consciously planning for the religious needs of their members in a somewhat more systematic manner; and it could probably help to understand and even eliminate some of the unnecessary frictions in the Christian church which arise essentially out of personal factors rather than the nature of Christianity.

This theory is presented for discussion in the hope that it can be refined for research.

NOTES

1. Michael Argyle, *Religious Behavior*, (The Free Press, Glencoe, Illinois, 1959), 196 pages.
2. Gerhard Lenski, *The Religious Factor, A Sociological Study of Religion's Impact on Politics, Economics, and Family Life* (Garden City, N.Y., Doubleday and Company, Inc., 1961) 367 pages.
3. *ibid.*, p. 297.
4. Gordon W Allport, "Behavioral Science, Religion, and Mental Health" in (*Journal of Religion and Health*, Vol. 2, No. 3, April 1963, pages 187-197), page 193.
5. Gordon W. Allport, "Traits Revisited," in (*American Psychologist*, Vol. 21, No. 1, January 1966) p. 6.
6. *ibid.*
7. Allport, *op. cit.*, "Behavioral Science, Religion, and Mental Health," p. 195.
8. *ibid.*, p. 195.
9. J. P. Guilford, "A System of Primary Traits of Temperament", in (*Indian Journal of Psychology*, 1959?), p. 147.
10. Rudolph Otto, *The Idea of the Holy*.

BOOK REVIEW

MARLIN KREIDER, editor

MULTIVALENT MAN by Alfred McClung Lee. George Braziller, New York, 1966. xiii + 447 pp., \$7.95.

Reading *Multivalent Man* reminded me of the plaintive cry of the Apostle Paul which at times is echoed by all of us: "I do not understand my own actions. For I do not do what I want, but I do the very thing I hate. . . . I delight in the law of God, in my inmost self, but I see in my members another law at war with the law of my mind and making me captive to the law of sin which dwells in my members. Wretched man that I am! . . ." (Romans 7:15, 22-24, RSV).

This book is an excellent resource for anyone who has wondered about the "inconsistencies" in his own or others' behavior, for all men are multivalent. As Lee

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indicates in the Preface, "Society has a multiplicity of conflicting moral values. It is multivalent, and thus its members who mature within it and become more or less normal parts of it are also multivalent. . . . In a many-valued society, we become many-minded."

Multivalent Man is discussed in 23 chapters grouped into four parts: "I. Many Values, Many Minds;" "II. Group Man;" "III. Society's Fabric of Values;" and "IV. The Individual Confronts Society." Intriguing chapter titles include "On Conforming and on Being One's Self," "Morality in Society and in Groups," "Bridges from Self to Community," "Four Melting Pots Within One," and "Cultures and Personalities in the Human Struggle." All in all, they add up to a survey of social psychology couched in the increasingly important framework of symbolic interactionism and reference group theory.

Topics dear to the hearts of educators, like academic freedom, are included, as are such subjects as guilt feelings, the tremendous variations in internalized patterns of interpretation and belief among people who outwardly seem to have the same religious faith, and the cultural facades and masks behind which we all live. References to religion and various aspects of church life and activities are sprinkled for illustrative purposes throughout the book. (Many are not indexed.)

Various practical implications emerge from the clear discussion of the text. For instance, "there is a cumulative hazard in not changing," for if gradual change is not permitted, sweeping changes or destruction eventually become likely (p. 103). "To define and prescribe freedom and responsibility narrowly would destroy them. Only in the acceptance of a many-valued understanding of freedom and responsibility, with tolerance and safeguards for the broadest range of conceptions, is a healthy, stimulating, and constructive academic community possible." (p. 326. ". . . the unanticipated and verifiable datum . . ., most often the product of serendipity, provides the cutting edge of any science." (p. 336). "Man and society are caught up and enveloped in an interrelated and continuing social process . . . [They] are not and cannot well be rational, as rationality is ordinarily understood . . ." (p. 22).

Footnote references at the end of the book and an index make this a very useful book for reference work and further study of selected topics. The down-to-earth illustrative materials help to make clear the relevance of the discussion to the lives of ordinary as well as extraordinary people. The anti-positivistic stance of the author will appeal to most members of the American Scientific Affiliation.

Some of the references to religious groups, especially in the opening chapter, may seem like a caricature; perhaps the author was stereotyping on the basis of unfortunate childhood experiences that gave him a relatively negativistic view of traditionalist churches. Yet I challenge the reader to substitute in Lee's discussion appropriate modifications to fit his own church. When this is done, I suspect that the *basic* message of the author will ring surprisingly true!

Questions can be raised about some details. For instance, is it factually established through research or is it only personal opinion that "people attempt to reduce their social landscape to the five manageable categories of equal, above, below, different, and strange, however they might actually label such categories" (p. 215)? Are all ten of the factors used for the classification of groups in Chapter 10 really continua, or ought some of them to be parts of triangular, rectangular, or cubical models? Was it necessary for the author to use such neologisms as "moretic" and "sociatry"? Why weren't his figures and accompanying textual discussions made more clear?

Reading this book will be an enlightening experience for all except those who are already deeply versed in contemporary social psychology, but even they can profit from Lee's theory of personality, self, and the nature of man. Even though its initial semi-popular style soon becomes textbookish, somewhat repetitive, boring, and dull, its contents are such that one can learn a great deal about himself as well as about others from its pages.

Reviewed by David O. Moberg, Professor of Sociology, Bethel College, St. Paul, Minnesota.

Increasing Distance

When they were asked what they would do if they ever had to choose between their Afrikaner nationalism and their Christian principles, most Afrikaners reply that the choice could never become necessary. Some say that Christianity would have to go. A few say that it already has . . .

Thus as the apartheid era progresses, the Afrikaner relies increasingly on surrogates — missionaries, Bantu commissioners, the security police — to confront black South Africa in his behalf. His own values may change. He may even speak of the need to be flexible. But this is all in the realm of theory; in the realm of fact, the distance between him and the black man is steadily increasing. — Joseph Lelyveld in *The New York*.

as published in HIS, June, 1967

Superscale and the Death of Beauty

Today we believe in a cool, cool time when there is almost a national phobia (against) expressing our private feelings, especially feelings about that obsolete quality called "beauty." Not so long ago, men felt free to admit that they loved the flow of a river, a field of devil's paintbrush, or a woman's crazy loveliness. Today, it kind of makes us squirm.

All knowledge begins with our own awareness and, unless the doorway to the senses is opened and lighted, how can we sing or write or draw, or design a happy environment for others? Perhaps the central question of the age is, can we be free without LSD?—Benjamin Thompson in *Panorama*.

as published in HIS, June, 1967

LETTERS TO THE EDITOR

Teilhard de Chardin

Mr. Davidheiser's evaluation (Journal of A.S.A., September 1967) of the O'Connell lecture on Teilhard de Chardin terminates in a mass of irrelevant material which eventually becomes self-defeating; e.g., his involvements with "applause at the end of the presentation," "broad-mindedness," "teleology," and "natural law." Since in his wild foray he took a shot at one of my favorite sacred cows, teleology (not Teilhard), I felt constrained to respond.

Science assumes cause and effect (stimulus and response) relationships as the basic explanation of mechanisms in the universe, and it seeks to discover these relationships by employing the scientific method. If we become satisfied with teleological explanations to the problems suggested by our observations, we abort science and thereby fail to elucidate the cause and effect relationships. For instance, when we observe squirrels hiding nuts in November and then ask questions, teleologists are quick to supply answers that squirrels need nuts for food during winter, and any sensible squirrel will store nuts. That sounds reasonable and any further investigation is stifled. The intricate behavioral mechanisms triggered by photoperiod will not be demonstrated by the advocates of teleological answers, and science which seeks to elucidate cause and effect (not the reverse) will be retarded. It is not difficult, therefore, to see why scientists have become somewhat hostile to teleological reasoning. Some scientists have in fact reacted by concluding that there is no such thing as purpose in our natural environment. Such a conclusion, however, is developed outside the scientific framework. Although science by the limits of its methods cannot determine purpose; neither can science *per se* deny its existence, although some scientists might. To the Christian scientist, teleology resides not in the individual organism, cell, or atom, but in the Creator of that organism, cell, or atom. Science by its noninvolvement with teleology does not pull God off His throne as Mr. Davidheiser fears.

If Teilhard is as great a threat to Christianity as Mr. Davidheiser suggests, I would hope that more adequate concepts are sent forth to fight the battle, lest Teilhard stand forever.

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Course Content in Chemistry

Russell Maatman's contribution CHEMISTRY, in the JOURNAL for September 1967 deserves comment.

Most universities recognize that their functions are two fold. There is first the obligation to deepen the area of knowledge, in other words to teach and thus to impart knowledge. There is as well the duty con-

tinually to push back the frontiers of knowledge, in other words to engage in fundamental research and thus to increase the area of knowledge. These functions are complimentary and neither attains its full stature without the other.

To-day approximately two thirds of the bachelor graduates in Chemistry pass eventually into graduate education most of them to degrees in Medicine or in Chemical research. These two thirds cannot be ignored. Indeed, in Chemistry, the scientific future of graduates belongs more and more heavily to those who have gone successfully through graduate programs.

The shift in course content which Russell Maatman describes is a decided help to graduate education.

At the present time we are proceeding in directions which at first sight however may seem contradictory but which, on deeper insight, are not.

On the one hand, our Ph.D. graduates in Chemistry must, of necessity, specialize. The techniques of scientific research are such that they cannot be mastered otherwise. The investigator must go deeply into the narrow field in which he is working. On the other hand, the successful completion of a piece of individual research is more and more coming to make use of the factual knowledge, know-how and techniques of related branches of scientific lore.

The only sufferer in this trend is factual knowledge on an elementary level. This is unavoidable as far as curricula themselves are concerned but on the other hand, it is really surprising to see how much information a truly devoted scholar can pick up through the medium of outside reading, stimulated by these very considerations of a more highly theoretical nature. He soon finds that he cannot think in theoretical terms without a broad foundation in factual knowledge.

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Reaching Up

Since middle- and upper-class people are not likely to be reached by conventional means (few, if any, would enter an evangelical church), mission executives and candidate secretaries should encourage young people now in college to major in areas that will have particular value for the gospel on a foreign university campus. Fields such as sociology, anthropology, psychology, philosophy, biology, zoology, astronomy, paleontology, physics, and geology are especially applicable.

Missionaries now on the field who have had training in areas other than theology ought to consider seriously the possibility of teaching or giving lectures in their field in the local university. — William J. Kornfield in *Evangelical Missions Quarterly*.

as published in HIS, June, 1967

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MEMBERS have at least a baccalaureate degree in science and are currently active in some field of science (broadly defined to include mathematics, philosophy of science, history, engineering, and medicine). Others with an interest in the objectives of the ASA may become ASSOCIATES.

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