

Glossolalia: Mental Health and Locus of Control

by

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Department of Psychology  
Lakehead University  
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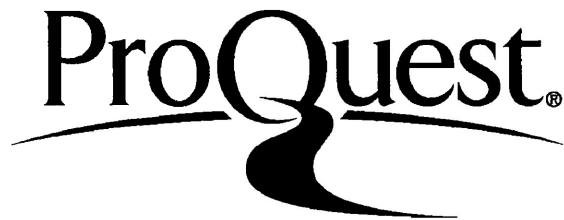
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## Abstract

The present study focussed on three major areas of interest: the relationship between glossolalia, or speaking in tongues, and positive mental health; the relationship between glossolalia and locus of control; and finally, the use of Rotter's original locus of control scale with highly religious populations.

Ninety subjects were assigned to four groups on the basis of self-report data. The Old Tongues group was comprised of actively practising Christians who had been glossolalic for more than three years, while those in the Young Tongues group had been glossolalic for three years or less. Subjects in the No Tongues group were actively practising Christians yet non-glossolalic. Finally, subjects in the No Religion group were self-described atheists or agnostics and non-glossolalic. All subjects completed three paper and pencil instruments: Rotter's (1966) Social Reaction Inventory (SRI), Shostrom's (1963, 1964, 1966) Personal Orientation Inventory (POI), and finally, an original survey questionnaire prepared by the author and dealing with selected aspects of the respondents' family and personal backgrounds, and religious experiences and beliefs.

Preliminary analyses indicated significant differences among the groups in sex composition, age, and education. These differences were subsequently controlled for statistically through the use of analysis of covariance. No differences were found among groups on the two major POI scales and the majority of POI subscales, suggesting comparable overall levels of positive mental health. Unadjusted scores for all four groups on all POI scales fell within one standard deviation of the mean. Predicted differences in locus of control between glossolalic and non-glossolalic subjects were not statistically supported, thus failing to replicate Coulson and Johnson's (1977) previous report linking glossolalia to greater levels of internal control. Their reservation regarding the use of Rotter's original scale with highly religious populations was confirmed. Here the wording of eight selected Rotter items was altered such that reference to fate, chance, or luck was replaced by reference to God, divinity, or providence. On these selected items subjects in all three religious groups shifted towards greater externality while those in the No Religion group shifted towards greater internality. Finally, analysis of selected aspects of the respondents' reported family and personal backgrounds and religious experiences and beliefs revealed relatively few significant differences among the groups. Those that were identified were not of clear theoretical significance.

Findings of the study were threefold: first, glossolalics and non-glossolalics did not differ significantly on both major scales of the POI and the majority of subscales, with unadjusted scores clustering around the mean standard score, suggesting comparable overall levels of mental health or actualizing for all groups; second, glossolalics and non-glossolalics failed to differ significantly in locus of control; and third, the use of Rotter's original locus of control scale was not supported as the most appropriate measure of locus of control when testing highly religious subjects.

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## Introduction

Within the Christian tradition glossolalia, or speaking in tongues, has been understood as a mode of prayer using a language not ordinarily known to the speaker or those around him (O'Connor, cited by Laurentin, 1978). While some deplore an excessive emphasis upon glossolalia, claiming that it is only one of many spiritual gifts, it has nevertheless been characterized as "the most obvious point of departure from conventional Christian religious practice" (Gerlach and Hine, 1970, p. 13). Attempts to minimize the emphasis placed on speaking in tongues notwithstanding, the phenomenon almost inevitably draws attention, and in many respects may still be characterized as a "tangled skein" marked by difficulty, complexity, uncertainty, and confusion (Laurentin, 1978, pp. 68-69).

Despite suggestions to the contrary (see May, 1956; Pattison, 1968; Pattison and Casey, 1969), many believe that glossolalia had its origins within the Christian faith and has remained faithful to those roots. Within this perspective the Pentecostal events following the death and resurrection of Christ are of key importance. These are detailed in Christian scripture, appearing in the New Testament Book of Acts. In the second chapter the events of Pentecost are introduced:

When the day of Pentecost came, they were all together in one place. Suddenly a sound like the blowing of a violent wind came from heaven and filled the whole house where they were sitting. They saw what seemed to be tongues of fire that separated and came to rest on each of them. All of them were filled with the Holy Spirit and began to speak in tongues as the Spirit enabled them. (Acts 2: 1-4, New International Version of the New Testament, p.312)

Further accounts of glossolalia appear in Chapters 10, 11, and 19 of the Book of Acts. At the same time, St. Paul's first letter to the Church in Corinth (particularly Corinthians 12 and 14) clearly suggests that there were problems and difficulties associated with glossolalia in the early Church, and goes on to set out guidelines to be followed regarding the appropriate practice of speaking in tongues within the Church.

In the subsequent history of the Christian faith the practice of glossolalia has been both revered and reviled. While some have attempted to chronicle the full history of glossolalia within the Church, an ambitious and difficult undertaking, others have restricted their focus to events of the nineteenth and twentieth centuries. Most accounts may be criticized, to some degree at least, as being derivative, superficial, vague, fragmentary, uncritical, overly sympathetic or wholly partisan (see Samarin, 1972b, p. 12; Laurentin, 1978, p. 107). As Laurentin (1978) has suggested, a comprehensive and critical historical account is still needed.

Among the most rigorous studies of glossolalia are those contributed by the linguists. Many have approached the area from a purely linguistic perspective, considering glossolalia simply as a form of vocal behaviour and for the most part disregarding contextual variables. Others have considered the importance of such contextual variables in their discussions, describing their investigations as "psycholinguistic" or "sociolinguistic" in nature. Important contributions have been made by Jacquith (1967), Pattison (1968), Pattison and Casey (1969), Goodman (1969b, 1971b, 1972a, 1972b), Gerlach and Hine (1970), Bryant and O'Connell (1971), Osser, Ostwald, MacWhinney, and Casey (1973), and Laffal, Monahan, and Richman (1974).

Samarin (1968, 1969a, 1969b, 1971, 1972a, 1972b, 1972c, 1973, 1974), of all linguists, has made the greatest contribution to the description and appreciation of glossolalia. Much of his work has been brought together in one of the most extensive treatments of glossolalia available (Samarin, 1972b). Here Samarin defined glossolalia as: "A meaningless but phonologically structured human utterance believed by the speaker to be a real language but bearing no systematic resemblance to any natural language, living or dead." (p. 2). At a later point he continued with this description:

... we find that all of the glossas we have examined (recorded by ourselves or others) do have some, albeit incomplete, resemblance to natural language. To recapitulate what has already been

suggested, glossolalia is verbal behavior that consists of using a certain number of consonants and vowels in the constitution of a limited number of syllables that in turn are taken apart and rearranged pseudo-grammatically. One might call these "words". These again are strung along to make longer utterances that are set off by pauses or silence of various durations and co-occur with variations in pitch, volume, speed, and intensity. These breath-groups or "sentences" with their intonational patterns, paralinguistic features (such as voice quality), and accompanying nonverbal behavior (like posture and gestures) all resemble, if they are not identified with, the kinds of features one finds in societies known to the speakers. Indeed, there is no doubt that a practiced glossolalist, in contrast with a beginner, really sounds as if he is talking a language. (p. 120)

And further on:

Tape-recorded samples are easy to obtain and to analyze. They always turn out to be the same thing: strings of syllables, made up of sounds taken from among all those that the speaker knows, put together more or less haphazardly but which nevertheless emerge as word-like and sentence-like units because of realistic, language-like rhythm and melody. Glossolalia is indeed like language in some ways, but this is only because the speaker (unconsciously) wants it to be like language. (p. 227)

Far from being supernatural, Samarin, as well as others, have concluded that linguistically glossolalia is a very natural phenomenon, similar to other kinds of speech humans produce in more or less normal circumstances.

Many investigators have chosen to look at the circumstances in which glossolalia does occur. Most have adopted a rather broad perspective and have contributed valuable information regarding the social contexts in which glossolalia is practised. Hine (1969), Gerlach and Hine (1968, 1970), McGuire (1972, 1974, 1975), Harper (1974), Harrison (1974), Heirich (1978), and Hegy (1978) are among such contributors.

Others have looked more specifically at the sociocultural aspects and functions of glossolalia itself. Pattison (1968) and Pattison and Casey (1969) have emphasized the role of social environments and the need for appropriate motivation, group setting, and example in the acquisition of glossolalic behaviour, and have documented how the social function and psychological significance of glossolalia varies with the differing social movements in which it is found. For example, depending upon its context, glossolalia may be considered as: an experiential base for religious faith; the verification of a charismatic leader's claim to authority; a means of protest; a recurrent infusion of experiential religion; an outlet for repressed conflicts and a means of justifying one's unique position in society; and finally, as a rite of passage, or mechanism for the nurturance of a social movement (Pattison and Casey, 1969, p. 137).

Samarin (1972c) emphasized the need to appreciate cultural factors for an appropriate understanding of the human use of all forms of anomalous speech, including glossolalia. Like Pattison and Casey, he suggested (1969c) that glossolalia may serve several functions. Among these he included the legitimization of a particular kind of religious experience and the authentication of leadership authority. In a later article Samarin (1970) argued that the development of a new language which is often associated with social movements serves both to express new ideas and to symbolize the integrity and uniqueness of the movement. Noting that religious glossolalia is linguistically consistent with other forms of pseudolanguage, he also observed (1972c) that it is nevertheless set apart by consistently recurring religious overtones. Thus, for Samarin, glossolalia functions as a "linguistic symbol of the sacred" (1972b, p. 231). And again: "Glossolalia says, 'God is here.'" (1972b, p. 231).

Laffal et al. (1974) acknowledged that speaking in tongues is not a language of communication and went on to address the sociocultural place and function of glossolalia as follows:

The fact that the meaning which is evoked is personal to each participant is less important than that there has been a social-interactive effort to share meaning. One important aspect of glossolalia, then, is that it shows language as a medium of social sharing and binding entirely aside from its communicative function. This quality of



language is probably related to the fact that learning and use of language always takes place in a context of communicating and sharing meanings. (p. 290)

Their concept of "binding" appears very similar to the factor of "commitment" suggested by Hine (1969) and Gerlach and Hine (1968, 1970) and discussed below.

In their study of the Pentecostal movement Gerlach and Hine isolated five factors believed to be crucial in the analysis of social movements, the third factor being personal commitment. Gerlach and Hine suggested that:

Personal commitment (is) generated by an act or experience which separates a convert in some significant way from the established order (or his previous place in it), identifies him with a new set of values, and commits him to changed patterns of behavior. (1970, p.xvii)

For them, the Baptism of the Holy Spirit (where an individual in faith receives the Holy Spirit into his or her being) is the commitment experience which sets a member of the Pentecostal movement apart from other devout Christians. This is often accompanied by, or leads to, the individual receiving the gift of speaking in tongues. Speaking in tongues is the commitment act.

Gerlach and Hine regarded speaking in tongues, at least in American culture, as a "bridge-burning" act which ".. sets the believer apart in some way from the larger social

context, cuts him off from past patterns of behavior and sometimes from past associations, identifies him with other participants in the movement, and provides high motivation for changed behavior." (1968, p. 32). To emphasize an appreciation of glossolalia as a "bridge-burning" act they at one point observed that:

To surrender oneself, without benefit of alcohol, to the excesses of uncontrolled articulation and possible involuntary motor activity, and to cap such indignities by calling it possession by the Holy Spirit, is, by middle class American standards, indecent, if not immoral or insane. (1970, p. 125)

Acknowledging cultural differences (in Haiti, for example, the commitment act consists of the burning of Voodoo dolls), Gerlach and Hine noted that such a "bridge-burning" act, in concert with the commitment experience of being Baptized with the Holy Spirit, could effectively alter an individual's understanding of self. Not uncommonly, such individuals may both feel themselves to be different and perceive themselves differently in relation to those around them. Thus new personal and social identities can be fostered for many.

Much of the literature attempting a psychological appraisal of glossolalia appears to have been guided by three major questions or themes: Is glossolalia associated in some manner with an altered state of consciousness? Do those who speak in tongues suffer from psychological

maladjustment or pathology? And, are those who speak in tongues characterized by common personality patterns or variables? As will be seen, answers to these questions are not clear.

Findings regarding glossolalia's relationship to altered states of consciousness have been both confusing and contradictory.

In an early and classic report Cutten (1927; cited by Hine, 1969; Richardson, 1973) linked glossolalia with hysteria, ecstasy, and catalepsy. More recent writers, however, have argued against such a relationship (Alland, 1961; Kelsey, 1964; and Christenson, 1968). The relationship of glossolalia to suggestibility has also been investigated. Lovekin and Malony (1977) reported Vivier's (1960) finding that glossolalics were less suggestible, Kelsey (1964) rejected the possibility of autosuggestion, and Hine (1969) argued that glossolalia and suggestibility were not related. Kildahl (1972), on the other hand, found that glossolalia was related to greater levels of suggestibility, especially in the presence of an authority figure. A similar situation exists regarding the relationship between glossolalia and submissiveness. Hine (1969) found no relationship while Kildahl (1972) did, glossolalics being more submissive than non-glossolalics, especially in the presence of an authority figure. Glossolalia and hypnotizability have also been investigated. Kildahl suggested that speaking in tongues was similar to hypnosis, at one point stating that

hypnotizability was the sine qua non of glossolalia (1972, p. 54). This position has been refuted by a number of writers and researchers, including Kelsey (1964), Hine (1969), and Spanos and Hewitt (1979).

Some have noted that glossolalia may be accompanied by kinetic activity, eye closure, and disorientation in some social settings (e.g. Alland, 1961). A number have specifically linked speaking in tongues with an altered, dissociated, or trance state. Spanos and Hewitt (1979) mentioned Palmer (1966), Spoerri (1967), and Kildahl (1972) in this regard, and then went on to credit Goodman (1969a, 1969b, 1971a, 1971b, 1972a, 1972b, 1974) with "the most detailed and explicit exposition of the trance hypothesis." (Spanos and Hewitt, 1979, pp. 427-428).

The trance position, however, has not fared well in the literature, with Goodman's methodology and conclusions being severely criticized (Samarin, 1972c, 1974). While some have suggested that glossolalia may be linked on some occasions with some form of altered state of consciousness (Pattison, 1968; Pattison and Casey, 1969), many have failed to find evidence of such an association and have argued against it (Hine, 1969; Gerlach and Hine, 1968, 1970; Samarin, 1972b, 1972c, 1974; Stanley et al., 1978; Spanos and Hewitt, 1979). One of the major difficulties in the area rests with the conceptualization and definition of trance. (See Spanos and Hewitt (1979) for an elaboration of this point.)

The above difficulties notwithstanding, Jules-Rosette (1980) is the most recent to consider glossolalia as a form of trance behavior, emphasizing the need for its contextual recognition and interpretation. The debate, it would seem, continues. More work appears necessary before a clear consensus will be achieved.

The question of the glossolalic's mental health has been one of the most contentious in the literature. Turn of the century studies cited by Pattison (1968) and Pattison and Casey (1969) suggested that glossolalia was a regressive, pathological experience occurring in individuals described as emotionally unstable. Some went as far as to argue that glossolalia was linked with psychotic states, most particularly schizophrenia. Other studies adopted a somewhat moderated position, suggesting only that glossolalics were characteristically more neurotic than non-glossolalics.

Contributions of the early 1960's have been reviewed by Hine (1969), who suggested that many such presentations viewed glossolalics with a "non-specific suspicion of emotional immaturity, of sub-clinical anxiety, or of some form of personal inadequacy." (p. 217). Both Vivier (1960, cited by Richardson, 1973) and Oates (1967) echoed the early descriptions of personality instability, while Pattison and Casey (1969) reported that Finch (1964) and Thomas (unpublished paper) had linked glossolalia with psychoticism. Burdick (1969, cited by Goodman, 1972b) simply

described it as an abnormal psychological experience.

Alland (1961), Pattison (1968), and Osser et al. (1973) each took a somewhat qualified position regarding the relationship between glossolalia and mental health. Alland argued against the belief that glossolalics suffered from a personality disorder, suggesting that glossolalics were generally well-adjusted to their social environment and behaved normally with the exception of their glossolalic experiences. Pattison, for his part, reported the observation of class differences in the mental health of glossolalics, with the lower class subjects faring significantly more poorly than those of the middle and upper classes. As he pointed out, however, the significance of this finding was not fully clear. Osser et al. adopted the relatively equivocal position that glossolalia was pathological in some instances or situations and not in others.

A significant number of investigators have argued against the suggested relationship between glossolalia and pathology. In a classic work Boisen (1939; cited by Hine, 1969) was one of the first to report no evidence of mental illness among glossolalics and to suggest glossolalia was not a sign of instability nor an indication of abnormality or psychological pathology. Hine (1969) also summarized the work of Sargant (1949, 1957), who argued that emotional and/or sociological maladjustments were not necessary for an explanation of glossolalia. Kiev (1964) reached a similar

conclusion, arguing that emotional instability was not necessary for an individual's participation in the Pentecostal movement or for the practice of glossolalia. Failure to find evidence linking glossolalia with psychoticism, psychopathology or psychological abnormality, or emotional disturbance and instability has also been reported by: Alland (1961), Kelsey (1964), Wood (1965), Christenson (1968), Hine (1969), Gerlach and Hine (1968, 1970), and more recently by Samarin (1972b), Coulson and Johnson (1977), Smith (1977), Lovekin and Maloney (1977), and Spanos and Hewitt (1979). In the most recent review article available Richardson (1973) concluded that there was little evidence to suggest that glossolalics suffer serious mental health deficiencies.

While many investigators have argued against a relationship between speaking in tongues and pathology, some have gone on to suggest that glossolalia may even be related to enhanced levels of positive mental health. Kiev (1964) noted that the behavioral patterns associated with Pentecostalism (including glossolalia) provide suitable channels for the expression of needs and personality traits, while Lapsley and Simpson (1965) suggested that glossolalia fosters a release from inner strife and a subsequent transcendence of isolation and brokenness. In studies again cited by Hine (1969), both Gerrard and Gerrard (unpublished report) and Gerrard (1968) reported that glossolalic serpent-handlers were found, in many respects, to be more

"normal" than members of a conventional denomination. Plog (in a personal communication reported by Hine, 1969) described members of his glossolalic sample as very responsible and normally well-controlled. O'Connor (1970; cited by Laurentin, 1978), in turn, described the number of glossolalics who are outstandingly poised, realistic, productive, successful, happy, loved, and respected as impressive. Kildahl (1972) found that glossolalics feel better about themselves and have a general and continuing sense of well-being, and both Goodman (1972b) and de Vol (1974) have similarly argued that glossolalia has favourable aftereffects. More recently, Smith (1977) found that glossolalics were less neurotic and less dependent than non-glossolalics.

Some have linked glossolalia with "the creative", with the positive aspect of the unconscious, suggesting that it in some way may be linked with a source of artistic creativity (e.g. Sadler, 1964). A number have gone on to argue that glossolalia is both constructive and integrative (see Hine's (1969) review of the work of Boisen (1939), Sargant (1949, 1957), Vivier (1960), and Frank (1961), as well as the work of Kelsey (1964) and Sherrill (1964)). Lovekin and Malony (1977) credit both Kelsey (1964) and Lapsley and Simpson (1965) with the suggestion that glossolalia leads to the pervasive resolution of neurosis or the re-establishment of ego function. For their part, Lovekin and Malony (1977) concluded that the evidence for



personality integration, the pervasive resolution of neurosis, or the re-establishment of ego function as a result of glossolalia remains questionable. As for the glossolalics themselves, they frequently report "before and after" statements of significant change in personal growth and life satisfaction (see, for example, Hine, 1969; Gerlach and Hine, 1970; Stanley, Bartlett, and Moyle, 1978).

Faced with such contradictory reports regarding the relationship between glossolalia and mental health some observers have adopted an equivocal conclusion. Thus Pattison (1964; reported in Pattison and Casey, 1969) declared that not all glossolalics are emotionally disturbed. Pattison and Casey (1969) later suggested that glossolalia cannot be interpreted necessarily as deviant or pathological. Similarly, Oates (1967) stated that no generalizations could be made about the mental health of glossolalics, and much the same conclusion was reached by O'Connor (1970; see Laurentin, 1978). In his review article, Richardson (1973) concluded that differences in opinion regarding the relationship between speaking in tongues and psychological adjustment remained and that further research was required.

Finally, the possible relationship between glossolalia and specific psychological or personality variables also remains unclear. A number have argued that such a relationship does exist. Richardson (1973) credited Vivier (1960) with the conclusion that personality factors are

involved in the self-selection of glossolalics, Kiev (1964) assumed psychological reasons for individuals participating in the Pentecostal movement, and Wood (1965) also suggested the presence of psychologically-based reasons for participation in the tongue-speaking movement. Morentz (1966; reported by Pattison and Casey, 1969) specifically identified six discrete personality patterns associated with those who spoke in tongues, including: hostility to authority; a wish to compensate for feelings of inadequacy; a wish to rationalize feelings of isolation; a wish to dominate; strong feelings of dependency and suggestibility; and finally, a wish for certainty. More recently Samarin (1972b) suggested that people of a certain type may be attracted to a form of religion where glossolalia is practised, and Richardson (1973) concluded that while there was some evidence for the role of psychological factors in the practice of glossolalia, the nature of their role remained unclear.

A number of investigators, however, have argued that such a relationship between psychological or personality factors and glossolalia does not exist. Sargant (1949, 1957; cited by Hine, 1969) argued that predisposing personality characteristics were not necessary for an understanding of glossolalia, while Vivier (1960), as reported by Pattison and Casey (1969), found that glossolalics were comparable to control subjects in terms of personality. Pattison and Casey (1969), for their part, considered glossolalia as a

psychological phenomenon bearing no necessarily linear relationship with personality variables. Similarly, Goodman (1972b) argued that no conclusive evidence was available suggesting that glossolalics are of one personality type or have distinct predisposing personality characteristics. Most recently, Heirich (1978) argued that psychological state and previous socialization are of less importance than immediate personal influence in an individual's joining of the Catholic Pentecostal Movement.

Finally, some authors have adopted a more tentative position. Cohn (1967, 1968), for example, concluded that the relationship between Pentecostalism, glossolalia, and personality variables remained unclear. Wood (1965) pointed out that it was still unclear whether the "Pentecostal type" was attracted to or developed by participation in the movement and its practices, including glossolalia. Richardson (1973) concluded that there were differences in opinion regarding the presence or absence of psychological factors in the practice of glossolalia.

Such conclusions regarding the possible involvement of specific psychological or personality factors in the practice of glossolalia have been based upon equally contradictory evidence.

Clark (1949; see Goodman, 1972b), suggested that glossolalics had a qualitatively different nervous system. Sargant (1949, 1957) also argued for a physiologically-based

appreciation, and suggested along with Frank (1961) that the practice of glossolalia also involved elements of cognitive restructuring. Their work is reviewed more extensively by Hine (1969). Cutten (1927; reported by Hine, 1969) described glossolalics as being non-verbal, of low mental ability, and with a lessened capacity for rational thought, while fifty years later Smith (1977) simply found that glossolalics were less intelligent than non-glossolalics.

A number of authors have reported a rather confusing array of observations and conclusions linked to various tenets or concepts of psychodynamic psychology. Relationships between glossolalia and repression have been examined. Hoekema (1966) and Oates (1967) both suggested that glossolalia was linked to strongly repressed emotional forces, and a number have concluded that glossolalia functions as an emotional outlet, allowing for the breakthrough of pent up passions (e.g. Sherrill, 1964; Lapsley and Simpson, 1965; Oates, 1967). Kelsey (1964) presented an essentially Jungian perspective, arguing that glossolalia represents an invasion into consciousness of material from the collective unconscious, and accepting the view that glossolalia functions as a positive preparation for personality integration. According to Richardson (1973), Vivier (1960) found that glossolalics were more likely to repress, while according to Hine (1969), Vivier found no support for viewing glossolalia as a form of dissociation based upon Freudian repression, nor did he find evidence

linking glossolalia with conversion hysteria. Kelsey (1964), for his part, argued that glossolalia was not an instance of exalted memory based upon repression.

The relationship between glossolalia, regression and ego function has been a concern of some investigators. Oman (1963) suggested that speaking in tongues was a regression to infantilism, a form of regression in the service of the ego. Pattison (1968) also argued that for some glossolalics speaking in tongues was a highly focal regression in the service of the ego. At the same time, he did indicate that for others glossolalia represented a pathological regression in ego function. Similarly, Lapsley and Simpson (1965) suggested that glossolalia was a dissociative expression of truncated personality development, while Oates (1967) claimed that glossolalics are characterized by weak egos and confused identities.

The relationship between glossolalia and anxiety has also been studied. Vivier (1960; cited by Richardson, 1973) found that glossolalics tended to be more anxious and superstitious, and had difficulty in nervous control. Oates (1967) suggested that glossolalics have characteristically high anxiety levels. Smith (1977) also found glossolalics to be more anxious, with a tendency to externalize their anxiety.

With respect to dependency, Vivier (1960) suggested that glossolalics have a poorer frustration tolerance and have a characteristic tendency to cling to objects in the environment (see Richardson, 1973). Kildahl (1972) also suggested that glossolalia was related to dependency, especially in the presence of an authority figure. However, Smith (1977), found that glossolalics were less dependent and less neurotic than were non-glossolalics.

Observations considering the relationship between glossolalia and locus of control (LOC) were of particular relevance to the present paper.

Gerlach and Hine (1968; 1970, p. 163) described the ideology of the Pentecostal movement as including a concept of personal power and control over one's destiny or the destiny of the world. However, such a sense of personal power is often combined, paradoxically, with what appears to be a fatalistic or passive attitude toward control over events. The Christian theory of an omnipotent God is taken very seriously. As Gerlach and Hine (1970) describe:

A typical Pentecostal possesses the orientation of one who believes himself acted upon by a power external to the self. ... this orientation is often assumed to be an indication of psychological weakness, of lack of ego strength, of lack of autonomy, of an inability to take the initiative. It is also, to an outsider, indistinguishable from the fatalism that results in a lackluster acceptance of everything willed by the gods, and the refusal to take any action at all. (p. 163)

In further discussion they suggested that the sense of personal power characteristic of movement ideologies comes from a personal experience through which the individual comes into a relationship with a source of power considered to be external to himself. This confers power upon the individual at the same time that it relieves him of a restrictive sense of personal responsibility.

As already noted, Kildahl (1972) similarly characterized glossolalics as submissive, dependent and suggestible. He also emphasized the role of a benevolent authority figure in the production of glossolalia. While Kildahl did not link his work specifically with LOC, his descriptions are suggestive of people who would score as externals.

More recently, Westley (1977) undertook a sociological analysis of the ritual of sharing and the process of commitment in a small Catholic Charismatic Renewal group. According to Westley, this involves a gradual reinterpretation of experience and a shifting of responsibility from self to others, a process which begins with the ritual of "sharing" and ideally ends with complete surrender of the self. Westley suggested that the individual's surrender of self to a higher power is, in fact, duplicated on a social level by the surrender of self to the direction and protection of the group. She continued:

In sum, it is interesting to note that, as members assume responsibility for each other, it becomes increasingly possible for individuals to eschew personal responsibility and to view the events of their lives in a larger context in which the assumption is made that they will be directed and cared for by a Divine Spirit who shapes their lives. (1977, p. 933)

At one point she suggested that such relinquishing of self-responsibility and control may be a reflection of a pre-existing sense of helplessness and impotence. Unfortunately, Westley's study is wholly descriptive, based upon participant observation in a small group. Nevertheless, her findings are also suggestive of individuals characterized by an external locus of control.

Coulson and Johnson (1977) have been the only investigators to look specifically at the relationship between glossolalia and locus of control. Here they compared a group of 95 glossolalics with a group of 79 non-glossolalics. Subjects ranged in age from 16 to 87, and were drawn from adult classes of the Foursquare Gospel, Assembly of God, and United Methodist Churches. All subjects completed a religious survey questionnaire, answering questions about various aspects of their religious practices and beliefs, as well as providing information about their education, income, sex, marital status, and age. Rotter's (1966) Internal-External Locus of Control Scale was also completed by all participants. No differences between groups were predicted.



Coulson and Johnson found that the glossolalics were more internal than the non-glossolalics. Although small, this difference was consistent with previous research linking a highly personalized and personally involving religious faith with internal LOC (see, for example, Strickland and Shaffer, 1971; Shrauger and Silverman, 1971; Benson and Spilka, 1973). At the same time, their finding was not consistent with those studies cited above suggesting a possible relationship between tongue-speaking and external locus of control.

In their discussion, Coulson and Johnson acknowledged the observations of Benson and Spilka (1973) and indicated that their finding may have been due to an artifact, suggesting that "... the Rotter scale might not be an accurate measure of the truly religious person, who may see things as being under divine control but not as controlled by chance, fate, or luck, which are key words in the Rotter scale." (Coulson and Johnson, 1977, p. 316). If this was the case one would expect the "truly religious person" to score as internal on Rotter's scale, not so much because they were truly internal, but moreso because they refused external items referring to chance, fate, or luck. It could be argued that when such an individual was presented with external items referring to divine control their response pattern would switch, indicating a greater externality, which in turn might be a more accurate reflection of their actual locus of control. In essence, Coulson and Johnson argued

that the use of the original Rotter scale with highly religious subjects may yield scores artificially weighted towards internality. They did not, however, confirm this argument empirically.

In summary, it is clear that the psychological literature dealing with glossolalia is in many respects inconclusive. This may be attributed, at least in part, to the quality of much of the existing research.

The difficulties or weaknesses of the reports to date are many. In a highly contentious area it is apparent that some authors have abandoned objectivity in favor of supporting their own particular views, while others appear to have unwittingly fallen prey to the large number of biases, preconceptions, and misconceptions which tend to be associated with some understandings of glossolalia. Such weaknesses could possibly have been counteracted in some instances by a more diligent consideration of research design and methodology. Unfortunately, this has not often been the case. Deficits have included: failure to appropriately define variables, inappropriate subject selection, failure to select and employ acceptable control groups, inappropriate selection and use of test materials, failure to clearly and fully report procedures and results, and the inappropriate over-generalization of findings.

Many of the above conclusions and criticisms are not substantially different from those of Richardson (1973), whose critical review was the only one found in the preparation of this paper. Richardson began by noting that a close examination of the research revealed important differences of opinion about possible psychological factors involved in the practice of glossolalia. This, he stated, was especially true of the relationship between glossolalia and psychological maladjustment. After reviewing a number of studies previously discussed by Hine (1969), Richardson concluded: "Most of the research cited by Hine can be criticized because the study designs were inadequate for the gathering of definite evidence. . . no research to date has assessed the personality characteristics of a set of potential converts to a tongue-speaking group, and then followed them up after conversion in order to assess (1) whether or not psychological changes had taken place, and (2) what types of changes had occurred." (1973, p. 201). Richardson also criticized most of the research for not containing enough information about design and data gathering to allow for evaluation, or for appearing so subjective that conclusions drawn were of questionable value. His conclusion was particularly noteworthy:

Our examination of the research dealing with psychological interpretations of glossolalia has shown that little of it is sound enough to allow conclusions to be drawn concerning the issues involved. Apparently the weight of opinion . . . seems to be in

favor of some sort of psychologically-based explanation for this phenomenon, although most reject the idea that serious mental health deficiencies are always present with glossolalia. Thus, Hine's statement about the nonpathological nature of glossolalia seems acceptable, but we would not agree with what may be an implied lack of connection between the occurrence of glossolalia and certain psychological states in individuals. (1973, pp. 205-206)

Richardson suggested that the role played by psychological states in both generating and sustaining glossolalic practice remains open to question. While it was not clear what Richardson included under the rubric of "psychological states", it was nevertheless evident that he supported the need for further research. His recommendation: the use of longitudinal research designs allowing assessment of change over time, measured by standardized, acceptably valid and reliable instruments, thereby enabling statements about personality changes associated with deeper movements into tongue-speaking. (1973, p. 206).

#### The Present Investigation

Two general areas of interest were chosen for further investigation in the present study: first, the relationship between glossolalia and mental health, and second, the relationship between glossolalia and a selected personality construct - locus of control.

In looking again at the relationship between glossolalia and mental health the focus was somewhat different. For the most part previous reports had focussed primarily upon the relationship between speaking in tongues and diminished mental health or pathology. While some authors had suggested a possible link between the practice of glossolalia and positive or enhanced mental health, such had not, at least until this point, been specifically investigated, nor was there any evidence that appropriate measures of positive mental health had ever been employed in the investigation of this issue. The present study was undertaken with that purpose in mind.

Only one study (Coulson and Johnson, 1977) had specifically addressed itself to the relationship between speaking in tongues and locus of control. While statistically significant results were obtained, the authors suggested that their findings may have been artifactual, and went on to question how appropriate Rotter's original locus of control scale was for use with highly religious individuals. The current investigation was designed as a modified replication and extension of the original Coulson and Johnson work. Its purpose was twofold: first, to further investigate the relationship between LOC and glossolalia and, second, to look more closely at the concern raised by Coulson and Johnson regarding the use of Rotter's scale with highly religious individuals. With the exception of Piersma's (1977) unpublished dissertation, no other work had

been done to meet the implied need for a religious locus of control instrument (Lefcourt, Note 1). The present study had as one of its goals the empirical confirmation that Coulson and Johnson's "hunch" was correct, and that the need to develop a psychometrically sound religious locus of control instrument was real.

Four groups were initially proposed for inclusion in the study: those who had been glossolalic for a relatively longer length of time (Old Tongues - OT); those who had been glossolalic for a relatively shorter length of time (Young Tongues - YT); those who were non-glossolalic yet religious (No Tongues NT); and finally, those who described themselves as non-religious, that is, as atheists or agnostics (No Religion NR). The proposal of two glossolalic groups was in response to Richardson's (1973) implicit suggestion of personality changes associated with deeper movements into tongue-speaking (1973, p. 206). The No Tongues and No Religion groups were to function as comparison or control groups.

The following hypotheses were advanced:

1. that scores of subjects in all four groups on each of the major and subscales of the Personal Orientation Inventory (a standardized and commonly used measure of actualization or mental health) would be similar and within the normally accepted range, thereby indicating sound basic mental health;

2. that subjects in both the Old Tongues and Young Tongues groups would score as more inner-directed on Rotter's original measure of locus of control than would subjects in the No Tongues and No Religion groups (per Coulson and Johnson, 1977);

3. that subjects in each of the Old Tongues, Young Tongues, and No Tongues groups would score more externally on selected Rotter items modified by reference to God, Providence, or divinity than they would on the corresponding original items referring to chance, fate, or luck (per Coulson and Johnson, 1977);

4. that subjects in the No Religion group would score more internally on selected Rotter items modified by reference to God, Providence, or divinity than they would on the corresponding original items referring to chance, fate, or luck (per Coulson and Johnson, 1977); and,

5. that subjects in each of the three religious groups (Old Tongues, Young Tongues, No Tongues) would score more externally on selected Rotter items modified by reference to God, Providence, or divinity (as opposed to chance, fate, or luck) than would subjects in the non-religious group (No Religion) (per Coulson and Johnson, 1977).

## Method

### Subjects

A total of 60 women and 30 men ranging from 19 to 74 years in age, with a mean age of 40.37 years, constituted the sample used in this study. Fourteen women and six men formed the OT group. Their mean age was 43.60 years, and they had completed a mean of 13.50 years of schooling. The 19 women and two men of the YT group had a mean age of 45.33 years and had completed a mean of 12.81 years of schooling. Nineteen women and nine men formed the NT group. Their mean age was 42.82 years and they had been educated for a mean of 14.75 years. And finally, the NR group was composed of eight women and 13 men of 29.05 years mean age and 17.24 years mean education.

All religious subjects were regular communicants within the Roman Catholic Diocese of Thunder Bay, Ontario, and were recruited from both the Diocese's Ministry Program (a twelve week program of adult religious education open to all those who are interested) and the Catholic Charismatic Renewal Movement (CCRM). All non-religious subjects were residents of Thunder Bay, the majority being affiliated with Lakehead University.



Individuals taking part in the Ministry Program were approached at one of their regularly scheduled weekly meetings regarding their participation in the present study. Members of the Catholic Charismatic Renewal Movement were approached at one of their monthly corporate prayer group meetings, where all local Catholic prayer groups are invited to meet together for an evening of prayer and teaching. In both instances the present author introduced the study, describing it as an exploration of the relationship between individual personality and the preference for one of three differing stances regarding religious faith life or worship: the preference for a more traditional form of religious faith, the preference for a more charismatic form of religious faith, and lastly, the preference for an essentially agnostic or atheist stance regarding issues of religious faith. The materials in the study were then briefly described and the procedures to be followed by those participating briefly outlined. Measures taken to ensure the anonymity of all participants were emphasized, as was the voluntary nature of their participation. Finally, time was allotted to deal with outstanding questions or concerns which had not been adequately dealt with to that point.

Prospective subjects for the non-religious group were approached on an individual basis using a social network form of recruitment. Initially, individuals known to the author and considered as possible participants were given the same introduction to the study as were the religious

subjects. Those who considered themselves to be either agnostic or atheist were then asked if they would be willing to take part. In addition, they were asked to nominate others whom they considered as possible participants. For the most part the author approached such nominated individuals in person. In some instances they were approached by their nominator on the author's behalf. As before, those contacted were also asked to nominate any people known to them who might be willing to participate in the study. In this way the pool of potential subjects grew to include individuals not personally known to the author.

Subjects were assigned to groups on the basis of self-report questionnaire data. All religious subjects believed that Jesus Christ is the Son of God, attended Church on a regular basis, nourished their spiritual life through times of prayer and scripture study, and considered themselves to be actively practising Christians. In addition, they all responded negatively when asked if they considered themselves to be either agnostic or atheist. Of the subjects in the non-religious group (NR), none believed that Jesus Christ is the Son of God, nor did any attend Church on a regular basis or nourish their spiritual life through times of prayer and scripture study. All considered themselves to be either agnostic or atheist and all responded negatively when asked if they considered themselves to be actively practising Christians.

Individuals in the two glossolalic groups (OT and YT) were familiar with the Life in the Spirit Seminars (a program developed by the Catholic Charismatic Renewal Movement as an introduction to the Charismatic Renewal), the Baptism of the Holy Spirit (as distinguished from the Baptism with water commonly received in infancy), the Catholic Charismatic Renewal Movement, the gift of speaking in tongues, and other gifts of the Holy Spirit. All had taken the Life in the Spirit Seminars, indicated that they had received the Baptism of the Holy Spirit, described themselves as presently being members of the Catholic Charismatic Renewal Movement, and reported that they had received the gift of speaking in tongues, a gift which was a part of their spiritual life at that time. In addition, each subject indicated how long it had been since he or she had become glossolalic. Finally, a majority also indicated that they had received other gifts of the Holy Spirit. Included among these were such traditionally accepted charismatic gifts as prophecy, healing, miracles, wisdom, and teaching, as well as such fruits of the Spirit as love, peace, joy, gentleness, and faith.

There were some subjects in both the religious non-glossolalic group (NT) and the non-religious group (NR) who indicated a familiarity with at least one of the Life in the Spirit Seminars, the Baptism of the Holy Spirit, the Catholic Charismatic Renewal Movement, the gift of speaking in tongues, or the other gifts of the Holy Spirit. None,

however, had participated in the Life in the Spirit Seminars or received the Baptism of the Holy Spirit, nor did any describe themselves as being members of the Catholic Charismatic Renewal Movement. In addition, none reported having received the gift of speaking in tongues. While some NT subjects indicated that they had received other gifts of the Holy Spirit, these were interpreted upon further investigation as being fruits of the Spirit rather than true charismata. No subjects in the NR group reported receiving other gifts of the Holy Spirit.

The assignment of glossolalic subjects to either the OT or the YT group considered the length of time since becoming glossolalic which was reported by each subject. Those who spoke in tongues had been doing so for durations ranging from two months to nine years. The median duration was three years, with 21 individuals speaking in tongues for three years or less and 20 for more than three years. This was considered an appropriate division point between those who had been speaking in tongues for a relatively longer length of time and those who had been doing so for a relatively shorter length of time.

In total, 243 of 302 sets of packaged materials were returned. This represents an overall return rate of 80.46%. Of the 187 packages taken by those in the Ministry Program a total of 168 were returned, representing a return rate of 89.84%. A total of 64 questionnaire sets were taken by those at the Catholic Charismatic Renewal meeting. Some 36 were

returned, representing a return of 56.25%. A total of 51 packages were taken by those who considered themselves to be either atheist or agnostic, with 39 or 76.47% being returned.

### Instruments

All subjects completed three pencil and paper instruments: the first, Rotter's (1966) internal-external locus of control scale (entitled "Social Reaction Inventory"); the second, Shostrom's (1963, 1964, 1966) Personal Orientation Inventory (POI); and the third, an original survey questionnaire prepared by the author for use in the present study and entitled "Family and Personal Background - Religious Experiences and Beliefs".

Rotter's (1966) Social Reaction Inventory "purports to measure the degree to which one believes that positive or negative events of his life are the result of his own behavior and under his personal control (internal locus of control), or that such events are unrelated to his behavior and beyond his control (external locus of control)." (Coulson and Johnson, 1977, p. 314). The scale is a 29-item forced-choice questionnaire, with six of the 29 items included as fillers. Each item is comprised of a pair of statements, one of which reflects greater externality. The scale is scored by summing the total number of external statements agreed with from each pair. Higher scores, therefore, reflect greater levels of externality.

As Lefcourt (1976, p. ix) noted, there is a vast and rapidly growing research literature pertaining to the perception of control. Earlier psychometric studies included those of Hersch and Scheibe (1967) and Lichtenstein and Keutzer (1967). Early review articles included those of Joe (1971) and Prociuk and Lussier (1975). Recent studies have attempted a further elaboration and clarification of the locus of control construct (e.g. Rotter, 1975), with many looking to the multidimensionality of locus of control (Collins, Martin, Ashmore, and Ross, 1973; Collins, 1974; Reid and Ware, 1973, 1974; Ryckman and Cannon, 1975; Schlegel and Crawford, 1976; Viney, 1974; Dudley, 1978). Rotter's original work has served as the foundation for much of this material. Lefcourt (1976), in one of the most comprehensive reviews available, looked at both Rotter's original work and the research developments growing from it. Despite the number of alternative locus of control measures which have been introduced, Prociuk and Lussier (1975) observe that Rotter's Social Reaction Inventory "continues to be the most widely employed measure of generalized expectancies for reinforcement." (p. 1325).

The Personal Orientation Inventory (POI) is composed of 150 two-choice comparative-value-judgement items based on the theoretical formulations of humanistically-oriented psychologists, including Maslow, Riesman, Rogers, and Perls (Shostrom, Knapp, and Knapp, 1976a, p. 33). Items form two major scales and ten subscales. The first major scale (Inner

- I) is a measure of the degree to which one is both independent and self-supportive. The second major scale (Time Competent - Tc) assesses one's ability to live fully in the present. The two major scales are accompanied by companion scales, Other (O), a measure of one's dependence and need for the support of others' views, and Time Incompetent (Ti), a measure of an individual's tendency to live in the past or the future. Together I and O combine to yield a support ratio (I:O) which defines autonomy by assessing a balance between other-directedness and inner-directedness. Tc and Ti combine to yield a time ratio (Tc:Ti), which assesses "the degree to which one is able to bring past experiences and future expectations into meaningful continuity." (1976a, p.33). It should also be noted that Shostrom (1966) recommends that scores for I and Tc alone be used when statistical analysis of the major scales is undertaken. Subscales assess values important in the development of the self-actualizing individual: Self-Actualizing Value (SAV), Existentiality (Ex), Feeling Reactivity (Fr), Spontaneity (S), Self-Regard (Sr), Self-Acceptance (Sa), Nature of Man Constructive (Nc), Synergy (Sy), Acceptance of Aggression (A), and Capacity for Intimate Contact (C). A more complete description of the major and subscales of the POI is found in Appendix A.

As already indicated, the POI has been the focal point of extensive research and has been considered the standard measure of positive mental health or self-actualizing

(Shostrom et al., 1976a; Knapp, 1976; Maslow, 1971; Buros, 1974, 1978; Knapp, Shostrom, and Knapp, 1978). Evidence has been presented regarding its validity and reliability and the majority of these studies have been recently reviewed (see Knapp, 1976; Knapp et al., 1978). Evidence has also been summarized therein regarding the sensitivity of the POI to treatment effects or group differences and its resistance to faking or demand characteristics.

The survey questionnaire "Family and Personal Background Religious Experiences and Beliefs" is divided into three major sections. Section A consists of items providing demographic and other information necessary for the appropriate assignment of subjects to groups. The items of Section B comprise a general survey of selected aspects of the respondent's family (both family of origin and present family, where applicable) and personal background and religious development. These were included as a control for possible biographical differences among subjects. Section C consists of eight items adapted from the original Rotter inventory. In each case the answer choice indicating an external locus of control makes reference to God, Providence, or divinity, rather than fate, luck, or chance. With the exception of this change every attempt has been made to remain as faithful as possible to the wording and intent of the original items. All answer choices indicating an internal locus of control have been left unchanged. The inclusion of the eight modified items in Section C was



designed to investigate the validity of Coulson and Johnson's (1977) suggestion that highly religious individuals may attribute much in their lives to sources beyond their control (i.e. God) yet score as internals on Rotter's original scale because they refuse items referring to fate, luck, or chance. The original and modified locus of control items are listed together in Appendix B.

All materials were prefaced by an introduction to the study, which is found in Appendix C. Appendices D through F contain Rotter's original LOC scale, the POI, and the "Family and Personal Background - Religious Experiences and Beliefs" survey questionnaire respectively.

#### Procedure

All those wishing to take part in the study received a pre-packaged set of test materials with accompanying instructions and written introduction to the study. All test materials were completed by the subjects in their homes and then returned to the present investigator. Those in the Ministry Program returned their materials at the following weekly meeting, while the participants from the Catholic Charismatic Renewal Movement mailed their returns using the stamped and pre-addressed envelopes with which they had been provided. Provision was made for subjects wishing to receive a short report of the the study's findings to so indicate without jeopardizing the confidentiality or anonymity of their questionnaire returns.

Unfortunately, a large number of the returned questionnaires could not be included in the data analysis. All questionnaires which could not be assigned to an appropriate group on the basis of the information provided were automatically discarded, as were those with unacceptable amounts of missing data and those which had been improperly completed or spoiled. The screening of material for inclusion in the study was undertaken primarily by the present author. In those instances where the decision to include or discard a given subject was equivocal the author's principal supervisor was consulted and a joint decision was made.

Preparation for data analysis included the coding and scoring of all test and questionnaire materials, a task undertaken by the present investigator. Raw scores for each of the major and subscales of the POI were calculated. A raw score based upon the 29 items of the original Rotter scale was also calculated. In addition, the eight modified Rotter items were considered and scored as a unit, as were their eight original counterparts. These scores, together with the demographic data from Section A of the "Family and Personal Background Religious Experiences and Beliefs" questionnaire and the Likert scale ratings obtained directly from the items of Section B of the same questionnaire, constituted the raw data base for all statistical analyses.

## Analysis

All statistical analyses were undertaken using the SPSS system of computer programs (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975). Three major clusters of dependent variables were included in the analysis. The POI variables were 12 in number, consisting of scores on each of the major and subscales of the POI. The three LOC variables included the overall score on the original Rotter (ORSCORE), the score on the eight modified Rotter items considered as a unit (MR8), as well as the score on the eight corresponding original Rotter items (OR8), also considered as a unit. The third cluster, the Section B variables, consisted of those items included in Section B of the "Family and Personal Background Religious Experiences and Beliefs" questionnaire. As previously described, these 36 items were designed to assess the individual's perception of selected aspects of his or her family and personal background, personal religious experiences and religious beliefs.

## Results

## Preliminary Analyses

Unadjusted group means, standard deviations, and N of cases for the POI, LOC, and Section B variable measures appear in Tables A, B, and C, in Appendices G through J respectively.

Preliminary analyses revealed significant group differences in sex composition [ $\chi^2(3) = 13.19, p < .01$ ], age [ $F(3,86) = 9.34, p < .001$ ], and level of completed education [ $F(3,86) = 9.74, p < .001$ ]. Tables 1 and 2 summarize the one-way analysis of variance findings for both age and education.

Table 1

Summary of the Analysis of Variance  
for Differences Among Groups in Age

| Source of Variation | df | Sum of Squares | Mean Square |          |
|---------------------|----|----------------|-------------|----------|
| Between Groups      |    | 3586.40        | 1195.47     | 9.34 *** |
| Within Groups       | 86 | 11012.51       | 128.05      |          |
| Total               | 89 | 14598.91       |             |          |

\*\*\*  $p < .001$

Table 2

Summary of the Analysis of Variance  
for Differences Among Groups in Education

| Source of Variation | df | Sum of Squares | Mean Square |          |
|---------------------|----|----------------|-------------|----------|
| Between Groups      |    | 238.30         | 79.43       | 9.74 *** |
| Within Groups       | 86 | 701.30         | 8.15        |          |
| Total               | 89 | 939.60         |             |          |

\*\*\*  $p < .001$

Post hoc comparisons using the Student-Newman-Keuls procedure indicated that for both age and education the non-religious group (NR) differed significantly from all three religious groups (OT, YT, NT), who in turn did not differ significantly from one another. To summarize: the non-religious group was characterized by a significantly higher proportion of males than was the case for the three religious groups, the non-religious subjects also being significantly younger and more educated than their religious counterparts.

Such significant differences seriously undermined the non-religious group's effectiveness as a comparison group. For this reason analysis of covariance techniques were employed in the subsequent data analysis, thereby enabling statistical control for the differences of sex, age, and

education among the four groups. Unless otherwise indicated, adjusted group means obtained from the analysis of covariance were used with the Student-Newman-Keuls procedure for the identification of all significant pairwise group comparisons. Adjusted group means for all POI, LOC, and Section B variables have been recorded in Tables A, B, and C, found in Appendices G through I respectively.

It is important to note that the results of an analysis of covariance used with naturally occurring groups must be interpreted with some degree of caution, for in such circumstances (i.e. non-random group membership) there is a somewhat increased probability that assumptions underlying the analysis, most particularly the assumption of homogeneity of regression, may be violated. Such violation can result in the overadjustment or underadjustment of group means (Weisberg, 1979). It is also true, however, that failure to make adjustments for group differences, that is, using an analysis of variance rather than analysis of covariance, may well lead to even more ambiguous conclusions. Such was thought most likely in the present study, given the highly significant differences in sex, age, and education identified above. In other words, while non-experimental control approaches such as that employed in the present study may introduce bias through a failure to identify or appropriately control the non-random influence of extraneous variables, procedures for statistical control of major and identifiable biasing factors nevertheless can

permit a somewhat clearer assessment of actual relationships. As Weisberg (1979) has pointed out, although statistical control procedures can be questioned, adequate alternative approaches are not yet available. For this reason and with these cautions the decision was made to use analysis of covariance in the present study. The results of these analyses are presented below.

#### The POI Variables

When variance due to age, education, and sex was partialled out a significant overall effect of group was found for four POI variables: existential flexibility (Ex) [ $F(3,83) = 4.17, p < .01$ ], spontaneity (S) [ $F(3,83) = 3.28, p < .05$ ], self-acceptance (Sa) [ $F(3,83) = 2.86, p < .05$ ], and nature of man - constructive (Nc) [ $F(3,83) = 3.05, p < .05$ ]. Summaries of the analysis of covariance for each of the above are presented in Tables 3 through 6.

Table 3

Summary of the Analysis of Covariance  
for Differences Among Groups in Existential Flexibility (Ex)

| Source of Variation | df | Sum of Squares | Mean Square |       |     |
|---------------------|----|----------------|-------------|-------|-----|
| <b>Covariates</b>   |    |                |             |       |     |
| Age                 | 1  | 222.01         | 222.01      | 13.09 | *** |
| Education           | 1  | 157.69         | 157.69      | 9.30  | **  |
| <b>Main Effects</b> |    |                |             |       |     |
| Sex                 | 1  | 26.70          | 26.70       | 1.57  |     |
| Group               | 3  | 211.95         | 70.65       | 4.17  | **  |
| Residual            | 83 | 1407.74        | 16.96       |       |     |
| Total               | 89 | 2026.09        | 22.77       |       |     |

\*\* p < .01

\*\*\* p < .001



Table 4

Summary of the Analysis of Covariance  
for Differences Among Groups in Spontaneity (S)

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| <b>Covariates</b>   |    |                |             |           |
| Age                 | 1  | 93.67          | 93.67       | 16.83 *** |
| Education           | 1  | 31.50          | 31.50       | 5.66 *    |
| <b>Main Effects</b> |    |                |             |           |
| Sex                 | 1  | .56            | .56         | .10       |
| Group               | 3  | 54.79          | 18.26       | 3.28 *    |
| Residual            | 83 | 461.87         | 5.57        |           |
| Total               | 89 | 642.39         | 7.22        |           |

\* p < .05  
\*\*\* p < .001

Table 5

Summary of the Analysis of Covariance  
for Differences Among Groups in Self-Acceptance (Sa)

| Source of Variation | df | Sum of Squares | Mean Square |        |
|---------------------|----|----------------|-------------|--------|
| <b>Covariates</b>   |    |                |             |        |
| Age                 |    | 14.28          | 14.28       | 1.39   |
| Education           |    | 12.05          | 12.05       | 1.17   |
| <b>Main Effects</b> |    |                |             |        |
| Sex                 | 1  | 17.35          | 17.35       | 1.69   |
| Group               | 3  | 88.42          | 29.47       | 2.86 * |
| Residual            | 83 | 854.38         | 10.29       |        |
| Total               | 89 | 986.48         | 11.08       |        |

p < .05

Table 6

Summary of the Analysis of Covariance  
for Differences Among Groups in  
Nature of Man - Constructive (Nc)

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| <b>Covariates</b>   |    |                |             |           |
| Age                 |    | 30.68          | 30.68       | 10.91 *** |
| Education           |    | 10.91          | 10.91       | 3.88      |
| <b>Main Effects</b> |    |                |             |           |
| Sex                 | 1  | 10.29          | 10.29       | 3.66      |
| Group               | 3  | 25.76          | 8.59        | 3.05 *    |
| Residual            | 83 | 233.48         | 2.81        |           |
| Total               | 89 | 311.12         | 3.50        |           |

\* p < .05

\*\*\* p < .001

Post hoc analyses of the adjusted group means were undertaken using the Student-Newman-Keuls procedure.

Significant differences in existential flexibility were found between the NR group ( $\underline{M}$  = 22.62) and both the NT ( $\underline{M}$  = 18.19) and YT ( $\underline{M}$  = 18.30) groups, suggesting that the NR group was capable of greater flexibility in the application of values. Such differences were not found between the NR

group and the OT group ( $\underline{M} = 20.53$ ), nor did the three religious groups (OT, YT, NT) differ significantly from one another.

Similar significant differences between groups were found with respect to spontaneity. Here too the NR group ( $\underline{M} = 13.63$ ) was favoured, differing significantly from both the YT ( $\underline{M} = 11.35$ ) and NT ( $\underline{M} = 11.36$ ) groups, suggesting a greater spontaneity and freedom to express feelings behaviourally. Again, the NR group did not differ significantly from the OT group ( $\underline{M} = 12.46$ ), nor did the three religious groups (OT, YT, NT) differ significantly from one another.

The above pattern did not hold, however, for scores on self-acceptance. Here the NR group ( $\underline{M} = 17.38$ ) differed from only one of the three religious groups, the NT group ( $\underline{M} = 14.91$ ), with the NR subjects reporting greater levels of self-acceptance in the face of known weaknesses or limitations than their NT counterparts. Comparison of the three religious groups revealed a significant difference between the OT ( $\underline{M} = 17.24$ ) and NT ( $\underline{M} = 14.91$ ) groups, suggesting higher levels of self-acceptance on the part of those in the OT group. Subjects in both glossolalic groups (OT and YT,  $\underline{M} = 16.14$ ) failed to differ significantly from one another, as did those in the YT and NT groups.

While an overall significant effect for group was found for the POI variable, Nature of Man - Constructive (Nc), multiple comparison testing with the Student-Newman-Keuls procedure failed to identify significant differences between pairs of groups (OT,  $\underline{M}$  = 11.23; YT,  $\underline{M}$  = 12.52; NT,  $\underline{M}$  = 11.45; NR,  $\underline{M}$  = 12.35).

Finally, when unadjusted scores were plotted on the standardized POI profile sheet the means of all four groups on all major and subscales fell within one standard deviation of the mean standardized score, suggesting that none of the groups were characterized by marked degrees of pathology or health.

#### The LOC Variables

Hypothesized differences (Hypothesis 2) between glossolalic and non-glossolalic subjects in overall scores on the original Rotter scale (ORSCORE) were also tested using adjusted group means obtained from the analysis of covariance (OT,  $\underline{M}$  = 8.16; YT,  $\underline{M}$  = 6.15; NT,  $\underline{M}$  = 7.93; NR,  $\underline{M}$  = 6.91) and the Student-Newman-Keuls procedure. No significant differences were found among the groups, clearly suggesting a similarity between glossolalic and non-glossolalic individuals in locus of control. In addition, unadjusted mean scores for each of the four groups were judged to be comparable to available normative data, suggesting that the present sample may not differ

significantly from other adult reference populations.

As previously indicated, overall scores were calculated for all subjects on the eight modified Rotter items referring to God, Providence, or divinity (the MR8 score) and the corresponding eight original Rotter items from which the modified items were derived (the OR8 score). The predicted differences (Hypotheses 3, 4) between the OR8 and MR8 scores for each of the four groups were examined using Student's t-test, with highly significant t-values being obtained for each group. These are presented in Table 7.

Table 7

Summary of t-Test Comparisons of OR8 with MR8  
for OT, YT, NT, and NR Groups.

| Group | Means<br>(OR8/MR8) | df | Differences<br>Between<br>Means |           |
|-------|--------------------|----|---------------------------------|-----------|
| OT    | 2.50<br>5.10       | 19 | -2.60                           | -4.86 *** |
| YT    | 2.38<br>5.14       | 20 | -2.76                           | -5.72 *** |
| NT    | 2.86<br>4.21       | 27 | -1.35                           | -3.19 **  |
| NR    | 2.57<br>0.91       | 20 | 1.67                            | 3.85 ***  |

\*\* p < .01 (one-tail probability)

\*\*\* p < .001 (one-tail probability)

Findings for all four groups were in the expected direction, with religious subjects moving to greater externality on the modified items and non-religious subjects shifting to greater internality.

The predicted MR8 score differences (Hypothesis 5) between each of the three religious groups and the non-religious group were next examined. Three non-orthogonal a priori comparisons were tested (Keppel, 1973) and these appear below.

|            | OT | YT | NT | NR |
|------------|----|----|----|----|
| Contrast 1 | 1  | 0  | 0  | -1 |
| Contrast 2 | 0  | 1  | 0  | -1 |
| Contrast 3 | 0  | 0  | 1  | -1 |

Again, highly significant group differences were found for each comparison. These are presented in Table 8.

Table 8

Summary of the Planned Comparisons  
Between Religious and Non-Religious Subjects  
on LOC Variable - MR8.

| Contrast | df | t Value  |
|----------|----|----------|
| 1        | 83 | 5.89 *** |
| 2        | 83 | 5.96 *** |
| 3        | 83 | 5.00 *** |

\*\*\*  $p < .001$

As indicated, adjusted means of each of the three religious groups (OT,  $\underline{M} = 5.07$ ; YT,  $\underline{M} = 5.07$ ; NT,  $\underline{M} = 4.20$ ) differed significantly from the non-religious group (NR,  $\underline{M} = 1.05$ ). Student-Newman-Keuls comparisons revealed no significant differences among the three religious groups.



Finally, the OR8 scores were analyzed in the same manner as the MR8 scores. This was done to ensure that the above differences among groups were not confounded by group differences on those original items from which the modified items were derived. As summarized in Table 9, none of the planned comparisons reached statistical significance.

Table 9

Summary of the Planned Comparisons  
Between Religious and Non-Religious Subjects  
on LOC Variable - OR8.

| Contrast | df | t Value |
|----------|----|---------|
| 1        | 83 | -0.60   |
| 2        | 83 | -1.34   |
| 3        | 83 | .38     |

Additional post hoc comparisons also failed to reveal significant differences among the adjusted means of the

four groups (OT,  $\underline{M}$  = 2.48; YT,  $\underline{M}$  = 2.15; NT,  $\underline{M}$  = 2.91; NR,  $\underline{M}$  = 2.75).

Collectively, the above findings indicate that religious subjects significantly differ from non-religious subjects in their overall response to selected Rotter items where externality was suggested by reference to God, Providence, or divinity rather than fate, luck, or chance, while at the same time not differing significantly among themselves.

## The Section B Variables

Analyses of covariance revealed significant group differences for only 13 of the 36 Section B variables (B13, B14, B15, B16, B18, B23, B24, B25, B26, B27, B28, B29, B30). Adjusted group means for these 13 significant Section B variables appear in Table 10.

Table 10

## Adjusted Means for Significant Section B Variables by Group

| Variable | OT   | YT   | NT   | NR       |
|----------|------|------|------|----------|
| B13      | 6.12 | 5.94 | 5.91 | 1.95 *** |
| B14      | 5.80 | 5.37 | 4.47 | 1.20 *** |
| B15      | 5.90 | 5.85 | 6.12 | 2.02 *** |
| B16      | 6.08 | 5.47 | 6.22 | 2.20 *** |
| B18      | 5.02 | 4.17 | 4.53 | 1.38 *** |
| B24      | 4.76 | 4.91 | 4.96 | 2.76 **  |
| B25      | 5.61 | 4.86 | 5.29 | 3.30 **  |
| B28      | 6.23 | 5.40 | 5.43 | 2.89 *** |
| B26      | 6.54 | 5.98 | 4.65 | 1.90 *** |
| B29      | 5.99 | 5.88 | 5.01 | 1.95 *** |
| B23      | 3.71 | 4.25 | 5.02 | 6.33 *** |
| B27      | 5.51 | 6.22 | 4.54 | 3.61 **  |
| B30      | 5.30 | 5.05 | 4.31 | 3.40 *   |

\* p < .05      \*\*\* p < .001  
 \*\* p < .01

Analysis of the adjusted means using the Student-Newman-Keuls (SNK) procedure identified a pattern of group differences common to eight of these 13 variables (B13, B14, B15, B16, B18, B24, B25, B28). It may be noted, this pattern (as well as those identified subsequently) is reflected in the ordering of variables in Table 10 above. In each instance the non-religious group was found to differ significantly from each of the three religious groups, which in turn did not differ significantly from one another. Tables 11 through 18 summarize the analysis of covariance findings for these eight variables.

Table 11

Summary of the Analysis of Covariance  
for Differences Among Groups on B13 +

| Source of Variation | df | Sum of Squares | Mean Square |        |     |
|---------------------|----|----------------|-------------|--------|-----|
| <b>Covariates</b>   |    |                |             |        |     |
| Age                 | 1  | 84.02          | 84.02       | 127.66 | *** |
| Education           | 1  | 46.56          | 46.56       | 70.74  | *** |
| <b>Main Effects</b> |    |                |             |        |     |
| Sex                 | 1  | 15.91          | 15.91       | 24.17  | *** |
| Group               | 3  | 160.70         | 53.57       | 81.39  | *** |
| Residual            | 83 | 54.63          | .66         |        |     |
| Total               | 89 | 361.82         | 4.07        |        |     |

\*\*\*  $p < .001$

+ B13. I would describe myself as being a notably religious person.

Table 12

Summary of the Analysis of Covariance  
for Differences Among Groups on B14 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| Covariates          |    |                |             |           |
| Age                 |    | 4.24           | 4.24        | 1.46      |
| Education           |    | .82            | .82         | .28       |
| Main Effects        |    |                |             |           |
| Sex                 | 1  | 24.25          | 24.25       | 8.32 **   |
| Group               | 3  | 93.25          | 31.08       | 10.67 *** |
| Residual            | 53 | 154.43         | 2.91        |           |
| Total               | 59 | 276.98         | 4.70        |           |

\*\* p < .01

\*\*\* p < .001

+ B14. I would describe my spouse as being a notably religious person.

Table 13

Summary of the Analysis of Covariance  
for Differences Among Groups on B15 +

| Source of Variation | df | Sum of Squares | Mean Square |       |     |
|---------------------|----|----------------|-------------|-------|-----|
| <b>Covariates</b>   |    |                |             |       |     |
| Age                 |    | 16.01          | 16.01       | 17.27 | *** |
| Education           |    | 23.46          | 23.46       | 25.30 | *** |
| <b>Main Effects</b> |    |                |             |       |     |
| Sex                 | 1  | 1.63           | 1.63        | 1.75  |     |
| Group               | 3  | 83.21          | 27.74       | 29.91 | *** |
| Residual            | 51 | 47.29          | .93         |       |     |
| Total               | 57 | 171.59         | 3.01        |       |     |

\*\*\*  $p < .001$

+ B15. I am actively involved in the religious instruction and development of my children.

Table 14

Summary of the Analysis of Covariance  
for Differences Among Groups on B16 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| <b>Covariates</b>   |    |                |             |           |
| Age                 |    | 30.05          | 30.05       | 20.97 *** |
| Education           |    | 19.71          | 19.71       | 13.75 *** |
| <b>Main Effects</b> |    |                |             |           |
| Sex                 | 1  | 2.41           | 2.41        | 1.68      |
| Group               | 3  | 82.98          | 27.66       | 19.30 *** |
| Residual            | 48 | 68.79          | 1.43        |           |
| Total               | 54 | 203.93         | 3.78        |           |

\*\*\* p < .001

+ B16. Religious education offered through the school system or local parish church is a significant part of my children's experience.

Table 15

Summary of the Analysis of Covariance  
for Differences Among Groups on B18 +

| Source of Variation | df | Sum of Squares | Mean Square |       |     |
|---------------------|----|----------------|-------------|-------|-----|
| Covariates          |    |                |             |       |     |
| Age                 |    | 52.86          | 52.86       | 20.25 | *** |
| Education           |    | 14.48          | 14.48       | 5.55  | *   |
| Main Effects        |    |                |             |       |     |
| Sex                 | 1  | 5.14           | 5.14        | 1.97  |     |
| Group               | 3  | 104.38         | 34.80       | 13.33 | *** |
| Residual            | 74 | 193.14         | 2.61        |       |     |
| Total               | 80 | 370.00         | 4.63        |       |     |

\* p < .05

\*\*\* p < .001

+ B18. Much of our social activity is linked to the life of the local parish or church.



Table 16

Summary of the Analysis of Covariance  
for Differences Among Groups on B24 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| Covariates          |    |                |             |           |
| Age                 |    | 119.02         | 119.02      | 43.73 *** |
| Education           |    | 1.93           | 1.93        | .71       |
| Main Effects        |    |                |             |           |
| Sex                 | 1  | 1.07           | 1.07        | .39       |
| Group               | 3  | 45.44          | 15.15       | 5.57 **   |
| Residual            | 83 | 225.93         | 2.72        |           |
| Total               | 89 | 393.39         | 4.42        |           |

\*\* p < .01

\*\*\* p < .001

+ B24. My relationship with God has been continual and without interruption.

Table 17

Summary of the Analysis of Covariance  
for Differences Among Groups on B25 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| <b>Covariates</b>   |    |                |             |           |
| Age                 |    | 160.66         | 160.66      | 43.67 *** |
| Education           |    | 6.33           | 6.33        | 1.72      |
| <b>Main Effects</b> |    |                |             |           |
| Sex                 | 1  | 3.35           | 3.35        | .91       |
| Group               | 3  | 44.92          | 14.97       | 4.07 **   |
| Residual            | 82 | 301.69         | 3.68        |           |
| Total               | 88 | 516.94         | 5.87        |           |

\*\* p < .01

\*\*\* p < .001

+ B25. There was never a significant time in my life when I left the Church.

Table 18

Summary of the Analysis of Covariance  
for Differences Among Groups on B28 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| Covariates          |    |                |             |           |
| Age                 |    | 44.35          | 44.35       | 24.07 *** |
| Education           |    | 12.69          | 12.69       | 6.89 **   |
| Main Effects        |    |                |             |           |
| Sex                 | 1  | 16.24          | 16.24       | 8.81 **   |
| Group               | 3  | 84.76          | 28.25       | 15.33 *** |
| Residual            | 83 | 152.95         | 1.84        |           |
| Total               | 89 | 310.99         | 3.49        |           |

\*\* p < .01

\*\*\* p < .001

+ B28. The majority of friends and important people in my life are actively involved in developing and living out their Christian faith.

To summarize: the subjects in the religious groups described both themselves and their spouses as being notably religious, and reported that their relationship with God had been continual and that there had never been a significant

time in their lives when they had left the Church. Those who had children were actively involved in their religious instruction and development. Not surprisingly, religious education in school or parish was described as a significant part of their children's experience. Subjects in the religious groups also reported that much of their social activity was linked to the life of the local parish or church and that the majority of friends and important people in their lives were committed to the Christian faith. None of the above were characteristic of the non-religious subjects.

The analyses of covariance for the five remaining significant B variables (B23, B26, B27, B29, B30) are summarized in Tables 19 to 23.

Table 19

Summary of the Analysis of Covariance  
for Differences Among Groups on B23 +

| Source of Variation | df | Sum of Squares | Mean Square |          |
|---------------------|----|----------------|-------------|----------|
| <b>Covariates</b>   |    |                |             |          |
| Age                 |    | 7.38           | 7.38        | 2.57     |
| Education           |    | 3.45           | 3.45        | 1.20     |
| <b>Main Effects</b> |    |                |             |          |
| Sex                 | 1  | 16.00          | 16.00       | 5.58 *   |
| Group               | 3  | 50.53          | 16.84       | 5.88 *** |
| Residual            | 82 | 235.02         | 2.87        |          |
| Total               | 88 | 312.38         | 3.55        |          |

\* p < .05

\*\*\* p < .001

+ B23. My own religious life has caused me little personal or interpersonal conflict.

Table 20

Summary of the Analysis of Covariance  
for Differences Among Groups on B26 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| Covariates          |    |                |             |           |
| Age                 |    | 70.49          | 70.49       | 31.51 *** |
| Education           |    | 5.57           | 5.57        | 2.49      |
| Main Effects        |    |                |             |           |
| Sex                 | 1  | 13.17          | 13.17       | 5.89 *    |
| Group               | 3  | 162.22         | 54.08       | 24.17 *** |
| Residual            | 83 | 185.67         | 2.24        |           |
| Total               | 89 | 437.12         | 4.91        |           |

\* p < .05

\*\*\* p < .001

+ B26. I have had a significant "religious experience" in my life - an experience that differs from the experience of most people that one comes into contact with in the course of one's day-to-day life.

Table 21

Summary of the Analysis of Covariance  
for Differences Among Groups on B27 +

| Source of Variation | df | Sum of Squares | Mean Square |         |
|---------------------|----|----------------|-------------|---------|
| Covariates          |    |                |             |         |
| Age                 |    | 2.31           | 2.31        | .57     |
| Education           |    | 3.12           | 3.12        | .77     |
| Main Effects        |    |                |             |         |
| Sex                 | 1  | 13.76          | 13.76       | 3.39    |
| Group               | 3  | 51.77          | 17.26       | 4.26 ** |
| Residual            | 83 | 336.63         | 4.06        |         |
| Total               | 89 | 407.60         | 4.58        |         |

\*\*  $p < .01$

+ B27. I have at some point in my life had to critically look at my religious beliefs and upbringing. My present faith/belief is one that I have struggled with and made my own.

Table 22

Summary of the Analysis of Covariance  
for Differences Among Groups on B29 +

| Source of Variation | df | Sum of Squares | Mean Square |       |     |
|---------------------|----|----------------|-------------|-------|-----|
| <b>Covariates</b>   |    |                |             |       |     |
| Age                 |    | 64.07          | 64.07       | 41.59 | *** |
| Education           |    | 26.36          | 26.36       | 17.11 | *** |
| <b>Main Effects</b> |    |                |             |       |     |
| Sex                 | 1  | 10.71          | 10.71       | 6.95  | **  |
| Group               | 3  | 131.04         | 43.68       | 28.35 | *** |
| Residual            | 83 | 127.87         | 1.54        |       |     |
| Total               | 89 | 360.05         | 4.05        |       |     |

\*\* p < .01

\*\*\* p < .001

+ B29. Generally speaking, I seem to have attached more importance to personal religious concerns than the majority of those around me.



Table 23

Summary of the Analysis of Covariance  
for Differences Among Groups on B30 +

| Source of Variation | df | Sum of Squares | Mean Square |           |
|---------------------|----|----------------|-------------|-----------|
| <b>Covariates</b>   |    |                |             |           |
| Age                 |    | 35.60          | 35.60       | 12.98 *** |
| Education           |    | .73            | .73         | .27       |
| <b>Main Effects</b> |    |                |             |           |
| Sex                 | 1  | 15.79          | 15.79       | 5.76 *    |
| Group               | 3  | 28.81          | 9.60        | 3.50 *    |
| Residual            | 83 | 227.57         | 2.74        |           |
| Total               | 89 | 308.49         | 3.47        |           |

\* p < .05

\*\*\* p < .001

+ B30. As I look back it seems to me that my life has been significantly more peaceful than the lives of many people I know.

A similar pattern of group differences was identified for both B26 and B29. In each case the three religious groups again differed significantly from the non-religious group, while in addition the two glossolalic groups differed

significantly from the religious yet non-glossolalic group. Thus, the glossolalic subjects reported having had a significant "religious experience" more often than did the non-glossolalic religious subjects, and, in addition, saw themselves as attaching more importance to personal religious concerns than their non-glossolalic religious controls. All three religious groups reported a higher incidence of "religious experience" and greater salience of personal religious concerns than did the non-religious control subjects.

The above pattern differed only slightly for B23. As before, the three religious groups differed significantly from the non-religious group, however, only one of the two glossolalic groups (OT) significantly differed from the non-glossolalic religious group, suggesting that religious life has not been without personal or interpersonal conflict, especially for those in the OT group.

The pattern of group differences for both B27 and B30 was unique. For B27 both glossolalic groups differed from the non-religious group, while the YT group alone differed from the NT group, suggesting that many of those who speak in tongues have not done so without seriously reviewing their religious beliefs and upbringing. The NT and NR groups did not differ significantly from one another. For B30 the differences between each glossolalic group and the non-religious group alone reached significance, with the glossolalics reporting greater peacefulness in their

lifetimes than their non-glossolalic non-religious counterparts.

## Discussion

## The POI Variables

It was initially hypothesized (Hypothesis 1) that the four groups would not differ significantly in their respective levels of self-actualizing as measured by the POI. This was confirmed for the two major scales (Inner and Time Competent - considered the best overall indicators of actualizing) and for six of the 10 subscales. Subscales measuring existential flexibility (Ex), spontaneity (S), and self-acceptance (Sa) were all characterized by significant identifiable differences among groups. A significant overall group effect was found for nature of man - constructive (Nc), yet post hoc comparisons failed to identify significant differences between pairs of groups.

When looking in more detail at these differences three sets of theoretically important comparisons were kept in mind. These included: the comparison of the two glossolalic groups (OT and YT) with one another; the comparison of the two glossolalic groups with their non-glossolalic yet religious control group (NT); and finally, the comparison of the three religious groups (glossolalic and non-glossolalic) with their non-glossolalic non-religious control group (NR).

In each case the two glossolalic groups did not differ from one another, thus apparently failing to support Richardson's (1973) suggestion of possible personality and/or mental health differences associated with deeper involvements in tongue-speaking. This observation needs qualification by noting that the degree of an individual's involvement in glossolalic practice may be related to some variable or variables other than the number of years he or she has been speaking in tongues. Had different criteria been set for the definition of "deeper involvements" then it is possible that different results may have been observed.

Significant group differences were found between glossolalic subjects and their religious yet non-glossolalic controls for Self-Acceptance alone. Here the subjects of the OT group reported a significantly greater ability to accept themselves in the face of their weaknesses than did their non-glossolalic controls. No clear cut explanation is immediately evident for this observation. It is possible that speaking in tongues per se generates greater self-acceptance. Perhaps those who speak in tongues see themselves as being gifted by God and thus acceptable in His sight, and if acceptable to God then by extension they become more acceptable to themselves. If this were the case, however, one would expect the same observed significant differences between glossolalics and non-glossolalics to hold for all who spoke in tongues, not just those in the OT group. Maybe there is something about speaking in tongues

for a longer rather than shorter length of time which leads to greater self-acceptance, however, the absence of significant differences between OT and YT groups argues against such an explanation.

It is also possible that the above finding is indicative of individual differences existing prior to subjects becoming glossolalic. As suggested by Gerlach and Hine (1970), speaking in tongues is a potentially embarrassing practice characterized by "surrender . . . to the excesses of uncontrolled articulation and possible involuntary motor activity" (p. 125). It may be argued that the capacity to engage in such behaviour requires high levels of self-acceptance, that those with higher levels of self-acceptance will be able to risk the possible embarrassment whereas those with lower levels may not. The greater the level of self-acceptance, therefore, the more readily an individual will become glossolalic. From this it could be argued that those with the greatest levels of self-acceptance will become glossolalic before those with lower levels. This is confirmed by the findings, where among the religious groups the highest levels of self-acceptance were associated with the longest histories of speaking in tongues and the lowest levels of self-acceptance were associated with an absence of speaking in tongues. Clearly this does not argue causation, for the group with the highest overall level of self-acceptance was the non-glossolalic, non-religious group.

A third possible explanation of the difference between OT and NT groups in levels of self-acceptance rests in an appreciation of changes within the Roman Catholic Church following Vatican II. Whereas the pre-Vatican II Church appeared in many respects to be preoccupied with man's fallen, sinful nature, a preoccupation which for many left little room for self-acceptance, the post-Counciliar Church has tended to emphasize the fundamental goodness of all creation and the saving work of Jesus Christ which allows mankind to stand acceptable before God. If one accepts the argument that members of the Catholic Charismatic Renewal Movement (CCRM) are among those in the forefront of the changes in the Roman Catholic Church, then it follows that they are also those who have been most exposed to and involved with this renewed emphasis of the Church upon man's acceptability before God. If this is the case, it is not unreasonable to find that those involved in the CCRM for the longest period of time have the highest levels of self-acceptance and that those who have not been involved in the CCRM at all have significantly lower levels of self-acceptance.

Finally, significant group differences were found between religious subjects (both glossolalic and non-glossolalic) and their non-religious controls for each of existential flexibility (Ex), spontaneity (S), and self-acceptance (Sa). It is noteworthy that in each instance the subjects of the NR group outscored their religious

counterparts. It is also noteworthy that in no case did the NR group differ significantly from the OT group. In fact, for self-acceptance, the NR group differed only from the NT group. For existential flexibility and spontaneity differences were between the subjects in the NR group and those in both the NT and YT groups.

Again, no clear cut explanations are immediately evident for these observations. It is possible that there is something intrinsic to being non-religious as opposed to religious which results in individuals having greater levels of self-acceptance and being capable of greater spontaneity and flexibility. Perhaps non-religious individuals have not felt closely bound by a particular moral or ethical code or set of institutional expectations. This could argue for a greater flexibility on their part in the application of values and for a greater spontaneity. It is also possible that non-religious individuals have viewed religion as a crutch, an ego support for those unable to accept themselves as they are. Thus, those with higher levels of self-acceptance would not turn so readily to religion. If the above arguments were thoroughly sound one would expect them to hold for all comparisons between non-religious and religious subjects. Unfortunately, they are weakened by the failure to find significant differences between the OT and NR groups.



Clearly, there appear to be no simple or straightforward ways to account for the significant differences found among the groups on the three POI subscales, Ex, S, and Sa. To become overly involved in the attempted explanation of such differences, however, may result in one's overlooking the finding of greatest significance. While differences among groups on Ex, S, and Sa are of interest, the observed similarity of all groups on both major scales and the majority of subscales is believed to be the most important overall finding associated with the POI data analysis. To recapitulate: at no point did the two glossolalic groups differ significantly from one another, and in only one instance (Sa) was there an observed difference between glossolalic subjects and their religious controls, and this for those in the OT group only. While differences were found between the religious and non-religious groups in self-acceptance, existential flexibility and spontaneity, at no time did both glossolalic groups together differ from the non-religious group, nor was there an occasion when all three religious groups at the same time differed significantly from the non-religious group. Finally, as previously indicated, marked deviations of unadjusted group mean scores from the mean standard score were not found for any of the POI scales.

These findings suggest that the practice of glossolalia, or even the length of time that speaking in tongues has been practised, is not significantly related to

major individual differences in overall levels of actualizing or mental health. This conclusion is not inconsistent with a sizeable portion of the available literature (see, for example, the reviews of Hine, 1969; Samarin, 1972b; and Richardson, 1973). At the same time, it fits well with the conclusions of those looking at glossolalia from a sociological, sociolinguistic, or social-psychological point of view (see particularly the work of Hine, 1969; Gerlach and Hine 1968, 1970; Pattison, 1968; Samarin, 1969, 1972b; and the most recent conclusion of Spanos and Hewitt, 1979). Here glossolalia is described as an acquired vocal behaviour, developed and supported by social environments (primarily religious groups) and best understood in terms of the meanings and values ascribed to the behaviour by those who practise it (Spanos and Hewitt, 1979, pp. 432-433). Studies by Harper (1974), Harrison (1974), Hegy (1978), and McGuire (1972, 1974, 1975) form an interesting background to such a formulation.

The findings also suggest that religiosity per se, quite apart from the specific consideration of glossolalia, although related to individual differences in existential flexibility, spontaneity and self-acceptance, is nevertheless unrelated to individual differences in overall levels of actualizing or mental health. At the same time, this is a conclusion which must be tempered by a realization that the relationships between religiosity and individual differences in mental health and personality are varied and

complex (Spilka and Werme, 1971; Becker, 1971; Sanua, 1976), and that the psychology of religion is a field characterized by a number of methodological difficulties and an overall dearth of clear cut findings (Strommen, 1971; Warren, 1977).

#### The LOC Variables

Hypothesis 2, regarding differences between glossolalic and non-glossolalic subjects on Rotter's (1966) original locus of control scale, was the only one which failed to receive statistical support. This finding is inconsistent with Coulson and Johnson's (1977) report of greater internality among glossolalic subjects than among non-glossolalic yet religious subjects. The most apparent difference between the Coulson and Johnson research and the present study involves the religious denomination of the participants, Pentecostal and United Methodist in the former instance and Roman Catholic in the latter. It is possible that the failure to replicate their findings is related to such denominational differences. Why this would be the case, however, is not clear. Unfortunately, details regarding the content of Coulson and Johnson's survey questionnaire and its findings were not supplied when requested. An alternative explanation might have been available had such data been provided.

From a different perspective, the failure to replicate Coulson and Johnson's finding lends some support to their suspicion of its artifactual nature. The confirmation of Hypotheses 3 through 5, all dealing with modifications in the wording of selected Rotter items, adds additional weight to their argument. It is clear that religious subjects, when given an opportunity, will describe their world as being controlled by God, Providence, or divinity rather than fate, luck, or chance, with the opposite being true of non-religious subjects. It is apparent that the use of Rotter's (1966) original locus of control measure with such religious subjects may suggest more about their orientation to fate, luck, or chance than their actual locus of control, thus raising an important concern regarding the valid or appropriate use of the original scale with religious populations. This calls into question the findings of previous studies which suggested a relationship between a personally involving religious faith and internal locus of control. The suspect nature of these earlier findings may account for the fact that they were not replicated by the present investigation. The need to develop an instrument measuring religious locus of control is clearly suggested. Such a task, to this point, has not been successfully undertaken (Lefcourt, Note 1).

## The Section B Variables

The Section B variables were included to enable post hoc identification and control of unanticipated differences among the four groups. Of the 13 variables where significant differences were identified, eight presented a pattern where all three religious groups clearly differed from the non-religious control group (B13, B14, B15, B16, B18, B24, B25, B28). As previously indicated, subjects in the religious groups described both themselves and their spouses as being notably religious, and reported that their relationship with God had been continual and that there had never been a significant time in their lives when they had left the Church. Those who had children were actively involved in their religious instruction and development, and, not surprisingly, religious education in school or parish was described as a significant part of their children's experience. Subjects in the religious groups also reported that much of their social activity was linked to the life of the local parish or church and that the majority of friends and important people in their lives were committed to the Christian faith. The picture that emerges is one of a people whose religious faith has formed or shaped much of their past and current lifestyle. The religious aspect of their lives does not appear to be an additional element, somehow "added on" to the rest of their day-to-day activities. Rather, it appears to be a fairly

pervasive influence about which much, if not all, of their daily life is oriented. That self-reported atheists or agnostics would not describe their lives as being similarly founded upon a religious base is not at all surprising.

Two of the Section B variables (B29, B26) were characterized both by differences between religious and non-religious subjects and by differences between glossolalic and non-glossolalic yet religious subjects as well. As previously indicated, glossolalics saw themselves as attaching more importance to personal religious concerns than their non-glossolalic controls, while all religious subjects differed from the non-religious controls. As well, the glossolalics reported having had a significant "religious experience" more often than the non-glossolalic religious subjects, with all religious subjects again differing from the non-religious control subjects.

That the non-religious subjects differed from their religious counterparts on either of the above measures is again not surprising. Nor is it surprising that the glossolalics reported a significant "religious experience" differing from the experience of most more often than their non-glossolalic controls. Speaking in tongues is certainly not a common practice for most individuals. It is interesting, however, to note that glossolalic individuals saw themselves as attaching more importance to personal religious concerns than other religious individuals. Perhaps they see themselves as more overtly active in their pursuit

of religious activities (i.e. attendance at prayer meetings, Bible studies, etc.) and thereby infer a greater personal concern on their part. Unfortunately, it is unclear from the present study what kind of values or meanings are attached to such perceived differences.

The significant differences found between each of the three religious groups and the non-religious group on item B23 may suggest that religious life has not been without personal or interpersonal conflict. The significant difference between the OT and NT groups, suggesting that more conflict was experienced by the OT subjects, is of some interest, suggesting a possible alienation suffered by the OT individuals as a result of their speaking in tongues. The lack of such difference between the YT group and the NT group indicates that it might not be so much glossolalia per se causing the alienation, as much as long time involvement in the Catholic Charismatic Renewal Movement, which in turn has led to a restructuring of personal attitudes, beliefs, and social relationships. The greater conflict reported by the OT group may also reflect their joining of the CCRM when the movement was in its early development and had not gained the degree of acceptance and support from the institutional church which it now enjoys.

The significant differences between both glossolalic groups and the non-religious group on item B27 ("I have at some point in my life had to critically look at my religious beliefs and upbringing. My present faith/belief is one that

I have struggled with and made my own.") is consistent with the suggestion that speaking in tongues is a practice not adopted without some degree of discomfort or soul-searching. The difference between the YT and the NT group adds further weight to this suggestion. Again, however, it is unclear if these findings are related to glossolalia in and of itself, or rather, the taking up of membership in the Catholic Charismatic Renewal Movement.

Finally, in a somewhat paradoxical finding, both glossolalic groups differed significantly from the NR group in describing their lives as having been significantly more peaceful than the lives of many people they had known (B30), this despite their suggestion of personal or interpersonal conflict and struggle associated with their religious life. Again, it is not clear if this is a function of being religious, glossolalic, or a member of the CCRM. Perhaps the struggle with religious questions is seen by individuals as taking place independently of other troubles or struggles in life, and that somehow being religious gives one a sense of comfort or peace about their life in the face of, or perhaps even because of their religious struggles. However, if such peace were attributable solely to being religious then differences should have been found for all three religious groups. If it is only due to speaking in tongues then subjects in the OT and YT groups should have differed significantly from those in the NT group. Such was not the case. A clear explanation of these findings is not readily



available.

The present discussion would be incomplete without noting the following observations.

First: the exclusive use of Roman Catholic subjects in all three religious groups provided a sound control for denominational differences regarding issues of doctrine and theological emphasis. At the same time, however, such differences between the Roman Catholic and other Christian denominations limit the extent to which the present findings may be generalized beyond a Roman Catholic population.

Second: while it was possible in this study to control for glossolalia, the membership of the glossolalic subjects in a social movement (CCRM) was not controlled for, nor was the fact that many of them had received other gifts of the Holy Spirit. The author is not aware of studies where these difficulties have been specifically identified and controlled. Given that all are so highly correlated, however, the development of effective control measures would be a very difficult undertaking.

Third: regarding the NR group, a group more closely matched to the three religious groups in terms of age, sex, and education would have been more desirable. This may have been achieved had the social network approach been initiated outside the university community.

Fourth: concern may be expressed regarding the disproportionate number of women in the glossolalic groups, most especially in the YT group. A number of authors (Alland, 1961; Harrison, 1974; McGuire, 1975; Westley, 1977; Heirich, 1978) have observed a similar disproportionate representation of women associated both with the Catholic Charismatic Renewal Movement and with other expressions of neo-Pentecostalism, although seldom to the extent reported in the present study. In addition, Harrison (1974) pointed out that there are a number of studies which suggest that women may be more receptive to religion and more active in organized religion. On the other hand, both Lapsley and Simpson (1965) and Samarin (1972b) observed that neo-Pentecostalism seems to have a fairly even balance of men and women. Samarin went on to note that other observers have confirmed his own impressions. Regarding sex differences in glossolalic practice per se, Samarin suggested that "there is little information at the present time on how glossolalia, in whatever function, differs significantly among men and women." (1972b, p. 225). His observation was later reinforced by Lovekin and Malony (1977) who reported that previous research had not considered sex differences, nor were they prepared to do so in their own analysis. Sex differences in glossolalic practice have yet to be fully examined.

Fifth: as discussed, statistical control for the effects of sex, age, and education may be problematic. At the same time, there should be some awareness of the confusing evidence regarding the effects of these variables on the dependent measures employed in this study. With respect to the POI, Schroeder (1973) reported sex differences favouring females on 11 of 12 scales and provided some evidence which could suggest that scores may change with increased levels of education or educational experience. Similar findings of sex differences favouring females were reported by Shostrom (1966) and Wise and Davis (1975). King (1974), for his part, failed to find sex differences on any of the 12 POI scales. Knapp, Shostrom, and Knapp (1977) in turn suggested that self-actualizing may be related to age and educational development. Such findings were also recorded by Knapp (1976). With respect to his original locus of control measure, Rotter (1966) reported only minimal and non-significant sex differences in locus of control. He further described a similar minimal relationship between locus of control and intelligence. However, not all have found the same results. Recently Dudley (1978) discussed sex as a biasing factor in locus of control studies. Somewhat earlier Joe (1971) reviewed studies relating locus of control to sex differences, concluding with an argument against Rotter's assertion that locus of control was unrelated to sex differences. At the same time, however, Joe corroborated Rotter's observations regarding locus of control and intelligence. Finally, Lichtenstein and

Keutzer (1967) looked not only at the relationships between locus of control and sex and education, but also at its relationship with age. While the effects of sex and education were not significant, age was found to be negatively correlated with externality.

Clearly sex, age, and education may have some role in determining scores on both the POI and the SRI. Unfortunately, at this point, the exact nature and extent of their influence has not been determined or agreed upon. This needs to be kept in mind both when viewing the present results and when considering the relative merits and demerits involved in employing analysis of covariance as a method of statistical control in this study.

Sixth: while two groups of glossolalic subjects were identified, it must be remembered that the distinction between the two was statistically achieved. When speaking of Old Tongues and Young Tongues one is not speaking of two independent groups, but of groups that have been arbitrarily set. As noted earlier different definitions of "old" and "young" may yield differing results. The definition of Richardson's (1973) "deeper involvements in glossolalia" appears to be in need of further reconceptualization.

Finally: the present analysis included a large number of univariate analyses. As the number of such analyses increases so does the probability of making a type I error, that is, finding statistically significant differences where

real differences among groups do not actually exist. This observation should be kept in mind when considering the results of the present study. It is possible that some of the significant but uninterpretable findings obtained may be due to type I error.

### Summary

Bearing the above observations and qualifications in mind, the three major findings of the present study are as follow:

1. glossolalics and non-glossolalics did not differ significantly on both major scales of the POI and the majority of subscales; significant differences found on the subscales measuring existential flexibility (Ex), spontaneity (S), self-acceptance (Sa), and nature of man constructive (Nc) had no consistent pattern and suggested no clear theoretical implications; unadjusted group means for all scales fell within one standard deviation of the mean standard score for all groups, suggesting comparable overall levels of mental health or actualizing for all groups;

2. those who speak in tongues failed to differ significantly in locus of control, as measured by Rotter's Social Reaction Inventory, from those who do not speak in tongues; and,

3. Rotter's original inventory was not supported as the most appropriate measure of locus of control for use with notably religious subjects.

Future directions for research may include: similar studies where denominational differences are included as an independent variable; studies where attempts are made to control for group membership and the receipt of other spiritual gifts, both of which are commonly associated with glossolalia; the use of a longitudinal design as recommended by Richardson (1973), together with a strengthened or reconceptualized understanding of "deeper involvements in glossolalia"; the development of an adequate religious locus of control scale; and, assessment using the more recently developed psychometric instruments which form Shostrom's Actualizing Assessment Battery (Shostrom, 1975; Shostrom et al., 1976).

## Reference Notes

1. Lefcourt, H. M. Personal communication, October, 1980.

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Appendix A

Description of the Major and Subscales of the POI

## The Personal Orientation Inventory

The Personal Orientation Inventory (POI) measures the degree to which an individual's attitudes and values compare with those of self-actualizing people. It is interpreted by means of both ratio scores and profile scores. These are discussed below.

### Ratio Scores

#### Time Competence

Two scales of the POI, Time Incompetent (Ti) and Time Competent (Tc), combine to yield a Time Competence ratio of Ti:Tc. This is a measure of the degree to which one is present oriented as opposed to living in the past (with guilts, regrets, resentments) and/or in the future (with idealized or imagined goals, plans, expectations, predictions, and fears). The self-actualizing individual is time competent - he or she lives more fully in the here and now and is able to tie the past and the future to the present in meaningful continuity.

#### Inner Support

Two scales of the POI, Other (O) and Inner (I), combine to yield a Support ratio of O:I. This is a measure of one's reactivity orientation, whether or not one is directed basically towards others or towards the self. Self-actualizing individuals are both, in that they are dependent upon and supported by others' views as well as being independent and self-supportive.

The two ratio scores, Ti:Tc and O:I, are the two major indicators of self-actualizing. Scores on the POI subscales serve to round out the individual profile, yielding a more complete understanding than is available with just the two ratio scores. The subscales, as described in Shostrom (1975), are detailed below.

### Profile Scores

**Self-Actualizing Value (SAV):** measures the extent of an individual's affirmation of the primary values of self-actualizing people.

**Existentiality (Ex):** measures the ability to situationally or existentially react without rigid adherence to principles.

**Feeling Reactivity (Fr):** measures the individual's ability to respond sensitively to his or her own needs and feelings.



Spontaneity (S): measures the freedom one has to react spontaneously or to be oneself.

Self-Regard (Sr): measures affirmation of self because of worth or strength.

Self-Acceptance (Sa): measures affirmation or acceptance of oneself in spite of personal weaknesses or deficiencies.

Nature of Man - Constructive (Nc): measures both the degree to which one sees man as essentially good and the degree to which one is able to resolve the good-evil, masculine-feminine, selfish-unselfish, spiritual-sensual, or other extreme dichotomies in the nature of man.

Synergy (Sy): measures the ability to be synergistic - to transcend dichotomies on a broad basis, to see opposites of life as meaningfully related.

Acceptance of Aggression (A): measures the ability to accept one's natural aggressiveness, as opposed to defensiveness, denial, and repression of aggression.

Capacity for Intimate Contact (C): measures the ability to develop intimate relationships with other human beings, unencumbered by expectations and obligations.

Appendix B

The Eight Original Locus of Control Items  
and Their Modified Counterparts

Original Item - Rotter's Question

- A. Many of the unhappy things in people's lives are partly due to bad luck.
- B. People's misfortunes result from the mistakes they make.

Modified Item

- A. Many of the unhappy things in people's lives are allowed by God as part of his plan.
- B. People's misfortunes result from the mistakes they make.

Original Item - Rotter's Question 9

- A. I have often found that what is going to happen will happen.
- B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

Modified Item

- A. I have often found that what is going to happen is determined by God more than me.
- B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

Original Item - Rotter's Question 11

- A. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
- B. Getting a good job depends mainly on being in the right place at the right time.

Modified Item

- A. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
- B. Getting a good job is in many ways a blessing from God.

Original Item - Rotter's Question 17

- A. As far as world affairs are concerned, most of us are victims of forces we can neither understand nor control.

B. By taking an active part in political and social affairs, the people can control world events.

Modified Item

A. As far as world affairs are concerned, most of us are part of a divine plan we can neither understand nor control.

B. By taking an active part in political and social affairs, the people can control world events.

Original Item - Rotter's Question 18

A. Most people don't realize the extent to which their lives are controlled by accidental happenings.

B. There really is no such thing as "luck".

Modified Item

A. Most people don't realize the extent to which their lives are controlled by Providence.

B. There really is no such thing as "luck".

Original Item - Rotter's Question 21

A. In the long run the bad things that happen to us are balanced by the good ones.

B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

Modified Item

A. In the long run God sees that the bad things and good things that happen to us are balanced.

B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

Original Item - Rotter's Question 25

A. Many times I feel that I have little influence over the things that happen to me.

B. It is impossible for me to believe that chance or luck plays an important role in my life.

Modified Item

A. Many times I feel that God has much influence over the things that happen to me.

B. It is impossible for me to believe that chance or luck plays an important role in my life.

Original Item - Rotter's Question 28

A. What happens to me is my own doing.

B. Sometimes I feel that I don't have enough control over the direction my life is taking.

Modified Item

A. What happens to me is my own doing.

B. Sometimes I feel that God has most of the control over the direction my life is taking.

Appendix C

Introduction to the Study

## INTRODUCTION TO THE STUDY

The present study is designed to look at the relationship between various expressions of religious faith life and personality. While much work has already been done in this area the results, generally speaking, have been less than conclusive. Hopefully the present work will add more by way of clarity than confusion to the research literature.

Following this introduction you will find all of the materials you are asked to complete. Altogether there are three questionnaires - two are recognized personality inventories commonly used in research of this nature, the third has been written specifically for the purposes of this study. Materials have been identified by a code number, thereby assuring your anonymity and the confidentiality of the information you provide. Instructions accompany each of the three questionnaires - please read and follow them carefully. Also, please note that the three questionnaires have been arranged in the order in which you are asked to complete them.

Please answer all items, working on your own and as quickly as possible. There is no time limit; however, try not to spend too much time on any one question. It is best if you complete all materials in one sitting - it should not take much more than an hour to do so. Please remember that these are not tests, there are no right or wrong answers. What is most important is that you respond to all items and do so with the selection which you personally believe is most true for you. When you have completed all three questionnaires please return all materials (both answer sheets and questionnaires) to their original envelope. All materials will be collected at your next meeting. Your early completion and return of these materials is greatly valued.

A short report of this study's findings will be available upon its completion. Should you wish a copy of this report please check off the appropriate response on the "Return of Materials" slip which has been attached to the front of the package envelope. This slip will be detached before any of the test materials are seen, thereby assuring the anonymity of your response.

Finally, let me thank you once again for your participation in this study. It is most sincerely appreciated.

Appendix D

Rotter's Internal-External Locus of Control Scale



SOCIAL REACTION INVENTORYInstructions:

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered A or B. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Your answer, either A or B to each question on this inventory, is to be recorded on the answer sheet.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. For each numbered question place the appropriate letter in the corresponding blank on the answer sheet, either the A or B, whichever you choose as the statement most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choice.

REMEMBER

Select the alternative which you personally believe to be more true.

I more strongly believe that:

- . A. Children get into trouble because their parents punish them too much.
- B. The trouble with most children nowadays is that their parents are too easy with them.
- A. Many of the unhappy things in people's lives are partly due to bad luck.
- B. People's misfortunes result from the mistakes they make.
- A. One of the major reasons why we have wars is because people don't have enough interest in politics.
- B. There will always be wars, no matter how hard people try to prevent them.
- 1. A. In the long run people get the respect they deserve in this world.
- B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
- 2. A. The idea that teachers are unfair to students is nonsense.
- B. Most students don't realize the extent to which their grades are influenced by accidental happenings.
- 3. A. Without the right breaks one cannot be an effective leader.
- B. Capable people who fail to become leaders have not taken advantage of their opportunities.
- . A. No matter how hard you try, some people just don't like you.
- B. People who can't get others to like them don't understand how to get along with others.
- 8. A. Heredity plays the major role in determining one's personality.
- B. It is one's experiences in life which determine what they're like.
- 9. A. I have often found that what is going to happen will happen.
- B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. A. In the case of the well-prepared student, there is rarely if ever such a thing as an unfair test.  
B. Many times exam questions tend to be so unrelated to course work that studying is really useless.
1. A. Becoming a success is a matter of hard work; luck has little or nothing to do with it.  
B. Getting a good job depends mainly on being in the right place at the right time.
12. A. The average citizen can have an influence in government decisions.  
B. This world is run by the few people in power, and there is not much the little guy can do about it.
13. A. When I make plans, I am almost certain that I can make them work.  
B. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. A. There are certain people who are just not good.  
B. There is some good in everybody.
5. A. In my case getting what I want has little or nothing to do with luck.  
B. Many times we might as well decide what to do by flipping a coin.
16. A. Who gets to be the boss often depends on who was lucky enough to be in the first place first.  
B. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.
7. A. As far as world affairs are concerned, most of us are victims of forces we can neither understand nor control.  
B. By taking an active part in political and social affairs, the people can control world events.
18. A. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
B. There really is no such thing as "luck".
19. A. One should always be willing to admit his mistakes.  
B. It is usually best to cover up one's mistakes.

20. A. It is hard to know whether or not a person really likes you.  
B. How many friends you have depends upon how nice a person you are.
1. A. In the long run the bad things that happen to us are balanced by the good ones.  
B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. A. With enough effort we can wipe out political corruption.  
B. It is difficult for people to have much control over the things politicians do in office.
23. A. Sometimes I can't understand how teachers arrive at the grades they give.  
B. There is a direct connection between how hard I study and the grades I get.
24. A. A good leader expects people to decide for themselves what they should do.  
B. A good leader makes it clear to everybody what their jobs are.
25. A. Many times I feel that I have little influence over the things that happen to me.  
B. It is impossible for me to believe that chance or luck plays an important role in my life.
26. A. People are lonely because they don't try to be friendly.  
B. There's not much use in trying too hard to please people; if they like you, they like you.
27. A. There is too much emphasis on athletics in high school.  
B. Team sports are an excellent way to build character.
28. A. What happens to me is my own doing.  
B. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. A. Most of the time I can't understand why politicians behave the way they do.  
B. In the long run the people are responsible for bad government on a national as well as on a local level.

ANSWER SHEET

\_\_\_\_\_

16. \_

18. \_

19. \_\_\_\_

20. \_

- \_\_\_\_

22. \_\_\_\_\_

23. \_

24. \_\_\_\_

10. \_\_\_\_\_

25. \_

26. \_

12. \_

- \_\_\_\_

3 \_

28. \_\_\_\_

14. \_

29. \_

-

Appendix E

The Personal Orientation Inventory

# POI

## PERSONAL ORIENTATION INVENTORY

EVERETT L. SHOSTROM, Ph.D.

### DIRECTIONS

This inventory consists of pairs of numbered statements. Read each statement and decide which of the two paired statements most consistently applies to you.

You are to mark your answers on the answer sheet you have. Look at the example of the answer sheet shown at the right. If the first statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "a". (See Example Item 1 at right.) If the second statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "b". (See Example Item 2 at right.) If neither statement applies to you, or if they refer to something you don't know about, make no answer on the answer sheet. Remember to give YOUR OWN opinion of yourself and do not leave any blank spaces if you can avoid it.

| Section of Answer<br>Column Correctly<br>Marked |  |
|---|--|
|   | a      b   |
| 1.  | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2.  | <input type="checkbox"/> <input checked="" type="checkbox"/> |

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks in this booklet.

Remember, try to make some answer to every statement.

Before you begin the inventory, be sure you put your name, your sex, your age, and the other information called for in the space provided on the answer sheet.

NOW OPEN THE BOOKLET AND START WITH QUESTION 1.

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1. a. I am bound by the principle of fairness.  
b. I am not absolutely bound by the principle of fairness.
2. a. When a friend does me a favor, I feel that I must return it.  
b. When a friend does me a favor, I do not feel that I must return it.
3. a. I feel I must always tell the truth.  
b. I do not always tell the truth.
4. a. No matter how hard I try, my feelings are often hurt.  
b. If I manage the situation right, I can avoid being hurt.
5. a. I feel that I must strive for perfection in everything that I undertake.  
b. I do not feel that I must strive for perfection in everything that I undertake.
6. a. I often make my decisions spontaneously.  
b. I seldom make my decisions spontaneously.
7. a. I am afraid to be myself.  
b. I am not afraid to be myself.
8. a. I feel obligated when a stranger does me a favor.  
b. I do not feel obligated when a stranger does me a favor.
9. a. I feel that I have a right to expect others to do what I want of them.  
b. I do not feel that I have a right to expect others to do what I want of them.
10. a. I live by values which are in agreement with others.  
b. I live by values which are primarily based on my own feelings.
11. a. I am concerned with self-improvement at all times.  
b. I am not concerned with self-improvement at all times.
12. a. I feel guilty when I am selfish.  
b. I don't feel guilty when I am selfish.
13. a. I have no objection to getting angry.  
b. Anger is something I try to avoid.
14. a. For me, anything is possible if I believe in myself.  
b. I have a lot of natural limitations even though I believe in myself.
15. a. I put others' interests before my own.  
b. I do not put others' interests before my own.
16. a. I sometimes feel embarrassed by compliments.  
b. I am not embarrassed by compliments.
17. a. I believe it is important to accept others as they are.  
b. I believe it is important to understand why others are as they are.
18. a. I can put off until tomorrow what I ought to do today.  
b. I don't put off until tomorrow what I ought to do today.
19. a. I can give without requiring the other person to appreciate what I give.  
b. I have a right to expect the other person to appreciate what I give.
20. a. My moral values are dictated by society.  
b. My moral values are self-determined.
21. a. I do what others expect of me.  
b. I feel free to not do what others expect of me.
22. a. I accept my weaknesses.  
b. I don't accept my weaknesses.
23. a. In order to grow emotionally, it is necessary to know why I act as I do.  
b. In order to grow emotionally, it is not necessary to know why I act as I do.
24. a. Sometimes I am cross when I am not feeling well.  
b. I am hardly ever cross.



25. a. It is necessary that others approve of what I do.  
b. It is not always necessary that others approve of what I do.
26. a. I am afraid of making mistakes.  
b. I am not afraid of making mistakes.
27. a. I trust the decisions I make spontaneously.  
b. I do not trust the decisions I make spontaneously.
28. a. My feelings of self-worth depend on how much I accomplish.  
b. My feelings of self-worth do not depend on how much I accomplish.
29. a. I fear failure.  
b. I don't fear failure.
30. a. My moral values are determined, for the most part, by the thoughts, feelings and decisions of others.  
b. My moral values are not determined, for the most part, by the thoughts, feelings and decisions of others.
31. a. It is possible to live life in terms of what I want to do.  
b. It is not possible to live life in terms of what I want to do.
32. a. I can cope with the ups and downs of life.  
b. I cannot cope with the ups and downs of life.
33. a. I believe in saying what I feel in dealing with others.  
b. I do not believe in saying what I feel in dealing with others.
34. a. Children should realize that they do not have the same rights and privileges as adults.  
b. It is not important to make an issue of rights and privileges.
35. a. I can "stick my neck out" in my relations with others.  
b. I avoid "sticking my neck out" in my relations with others.
36. a. I believe the pursuit of self-interest is opposed to interest in others.  
b. I believe the pursuit of self-interest is not opposed to interest in others.
37. a. I find that I have rejected many of the moral values I was taught.  
b. I have not rejected any of the moral values I was taught.
38. a. I live in terms of my wants, likes, dislikes and values.  
b. I do not live in terms of my wants, likes, dislikes and values.
39. a. I trust my ability to size up a situation.  
b. I do not trust my ability to size up a situation.
40. a. I believe I have an innate capacity to cope with life.  
b. I do not believe I have an innate capacity to cope with life.
41. a. I must justify my actions in the pursuit of my own interests.  
b. I need not justify my actions in the pursuit of my own interests.
42. a. I am bothered by fears of being inadequate.  
b. I am not bothered by fears of being inadequate.
43. a. I believe that man is essentially good and can be trusted.  
b. I believe that man is essentially evil and cannot be trusted.
44. a. I live by the rules and standards of society.  
b. I do not always need to live by the rules and standards of society.
45. a. I am bound by my duties and obligations to others.  
b. I am not bound by my duties and obligations to others.
46. a. Reasons are needed to justify my feelings.  
b. Reasons are not needed to justify my feelings.

47. a. There are times when just being silent is the best way I can express my feelings.  
b. I find it difficult to express my feelings by just being silent.
48. a. I often feel it necessary to defend my past actions.  
b. I do not feel it necessary to defend my past actions.
49. a. I like everyone I know.  
b. I do not like everyone I know.
50. a. Criticism threatens my self-esteem.  
b. Criticism does not threaten my self-esteem.
51. a. I believe that knowledge of what is right makes people act right.  
b. I do not believe that knowledge of what is right necessarily makes people act right.
52. a. I am afraid to be angry at those I love.  
b. I feel free to be angry at those I love.
53. a. My basic responsibility is to be aware of my own needs.  
b. My basic responsibility is to be aware of others' needs.
54. a. Impressing others is most important.  
b. Expressing myself is most important.
55. a. To feel right, I need always to please others.  
b. I can feel right without always having to please others.
56. a. I will risk a friendship in order to say or do what I believe is right.  
b. I will not risk a friendship just to say or do what is right.
57. a. I feel bound to keep the promises I make.  
b. I do not always feel bound to keep the promises I make.
58. a. I must avoid sorrow at all costs.  
b. It is not necessary for me to avoid sorrow.
59. a. I strive always to predict what will happen in the future.  
b. I do not feel it necessary always to predict what will happen in the future.
60. a. It is important that others accept my point of view.  
b. It is not necessary for others to accept my point of view.
61. a. I only feel free to express warm feelings to my friends.  
b. I feel free to express both warm and hostile feelings to my friends.
62. a. There are many times when it is more important to express feelings than to carefully evaluate the situation.  
b. There are very few times when it is more important to express feelings than to carefully evaluate the situation.
63. a. I welcome criticism as an opportunity for growth.  
b. I do not welcome criticism as an opportunity for growth.
64. a. Appearances are all-important.  
b. Appearances are not terribly important.
65. a. I hardly ever gossip.  
b. I gossip a little at times.
66. a. I feel free to reveal my weaknesses among friends.  
b. I do not feel free to reveal my weaknesses among friends.
67. a. I should always assume responsibility for other people's feelings.  
b. I need not always assume responsibility for other people's feelings.
68. a. I feel free to be myself and bear the consequences.  
b. I do not feel free to be myself and bear the consequences.

69. a. I already know all I need to know about my feelings.  
b. As life goes on, I continue to know more and more about my feelings.
70. a. I hesitate to show my weaknesses among strangers.  
b. I do not hesitate to show my weaknesses among strangers.
71. a. I will continue to grow only by setting my sights on a high-level, socially approved goal.  
b. I will continue to grow best by being myself.
72. a. I accept inconsistencies within myself.  
b. I cannot accept inconsistencies within myself.
73. a. Man is naturally cooperative.  
b. Man is naturally antagonistic.
74. a. I don't mind laughing at a dirty joke.  
b. I hardly ever laugh at a dirty joke.
75. a. Happiness is a by-product in human relationships.  
b. Happiness is an end in human relationships.
76. a. I only feel free to show friendly feelings to strangers.  
b. I feel free to show both friendly and unfriendly feelings to strangers.
77. a. I try to be sincere but I sometimes fail.  
b. I try to be sincere and I am sincere.
78. a. Self-interest is natural.  
b. Self-interest is unnatural.
79. a. A neutral party can measure a happy relationship by observation.  
b. A neutral party cannot measure a happy relationship by observation.
80. a. For me, work and play are the same.  
b. For me, work and play are opposites.
81. a. Two people will get along best if each concentrates on pleasing the other.  
b. Two people can get along best if each person feels free to express himself.
82. a. I have feelings of resentment about things that are past.  
b. I do not have feelings of resentment about things that are past.
83. a. I like only masculine men and feminine women.  
b. I like men and women who show masculinity as well as femininity.
84. a. I actively attempt to avoid embarrassment whenever I can.  
b. I do not actively attempt to avoid embarrassment.
85. a. I blame my parents for a lot of my troubles.  
b. I do not blame my parents for my troubles.
86. a. I feel that a person should be silly only at the right time and place.  
b. I can be silly when I feel like it.
87. a. People should always repent their wrongdoings.  
b. People need not always repent their wrongdoings.
88. a. I worry about the future.  
b. I do not worry about the future.
89. a. Kindness and ruthlessness must be opposites.  
b. Kindness and ruthlessness need not be opposites.
90. a. I prefer to save good things for future use.  
b. I prefer to use good things now.
91. a. People should always control their anger.  
b. People should express honestly-felt anger.

92. a. The truly spiritual man is sometimes sensual.  
b. The truly spiritual man is never sensual.
93. a. I am able to express my feelings even when they sometimes result in undesirable consequences.  
b. I am unable to express my feelings if they are likely to result in undesirable consequences.
94. a. I am often ashamed of some of the emotions that I feel bubbling up within me.  
b. I do not feel ashamed of my emotions.
95. a. I have had mysterious or ecstatic experiences.  
b. I have never had mysterious or ecstatic experiences.
96. a. I am orthodoxly religious.  
b. I am not orthodoxly religious.
97. a. I am completely free of guilt.  
b. I am not free of guilt.
98. a. I have a problem in fusing sex and love.  
b. I have no problem in fusing sex and love.
99. a. I enjoy detachment and privacy.  
b. I do not enjoy detachment and privacy.
100. a. I feel dedicated to my work.  
b. I do not feel dedicated to my work.
101. a. I can express affection regardless of whether it is returned.  
b. I cannot express affection unless I am sure it will be returned.
102. a. Living for the future is as important as living for the moment.  
b. Only living for the moment is important.
103. a. It is better to be yourself.  
b. It is better to be popular.
104. a. Wishing and imagining can be bad.  
b. Wishing and imagining are always good.
105. a. I spend more time preparing to live.  
b. I spend more time actually living.
106. a. I am loved because I give love.  
b. I am loved because I am lovable.
107. a. When I really love myself, everybody will love me.  
b. When I really love myself, there will still be those who won't love me.
108. a. I can let other people control me.  
b. I can let other people control me if I am sure they will not continue to control me.
109. a. As they are, people sometimes annoy me.  
b. As they are, people do not annoy me.
110. a. Living for the future gives my life its primary meaning.  
b. Only when living for the future ties into living for the present does my life have meaning.
111. a. I follow diligently the motto, "Don't waste your time."  
b. I do not feel bound by the motto, "Don't waste your time."
112. a. What I have been in the past dictates the kind of person I will be.  
b. What I have been in the past does not necessarily dictate the kind of person I will be.
113. a. It is important to me how I live in the here and now.  
b. It is of little importance to me how I live in the here and now.
114. a. I have had an experience where life seemed just perfect.  
b. I have never had an experience where life seemed just perfect.
115. a. Evil is the result of frustration in trying to be good.  
b. Evil is an intrinsic part of human nature which fights good.

116. a. A person can completely change his essential nature.  
b. A person can never change his essential nature.
117. a. I am afraid to be tender.  
b. I am not afraid to be tender.
118. a. I am assertive and affirming.  
b. I am not assertive and affirming.
119. a. Women should be trusting and yielding.  
b. Women should not be trusting and yielding.
120. a. I see myself as others see me.  
b. I do not see myself as others see me.
121. a. It is a good idea to think about your greatest potential.  
b. A person who thinks about his greatest potential gets conceited.
122. a. Men should be assertive and affirming.  
b. Men should not be assertive and affirming.
123. a. I am able to risk being myself.  
b. I am not able to risk being myself.
124. a. I feel the need to be doing something significant all of the time.  
b. I do not feel the need to be doing something significant all of the time.
125. a. I suffer from memories.  
b. I do not suffer from memories.
126. a. Men and women must be both yielding and assertive.  
b. Men and women must not be both yielding and assertive.
127. a. I like to participate actively in intense discussions.  
b. I do not like to participate actively in intense discussions.
128. a. I am self-sufficient.  
b. I am not self-sufficient.
129. a. I like to withdraw from others for extended periods of time.  
b. I do not like to withdraw from others for extended periods of time.
130. a. I always play fair.  
b. Sometimes I cheat a little.
131. a. Sometimes I feel so angry I want to destroy or hurt others.  
b. I never feel so angry that I want to destroy or hurt others.
132. a. I feel certain and secure in my relationships with others.  
b. I feel uncertain and insecure in my relationships with others.
133. a. I like to withdraw temporarily from others.  
b. I do not like to withdraw temporarily from others.
134. a. I can accept my mistakes.  
b. I cannot accept my mistakes.
135. a. I find some people who are stupid and uninteresting.  
b. I never find any people who are stupid and uninteresting.
136. a. I regret my past.  
b. I do not regret my past.
137. a. Being myself is helpful to others.  
b. Just being myself is not helpful to others.
138. a. I have had moments of intense happiness when I felt like I was experiencing a kind of ecstasy or bliss.  
b. I have not had moments of intense happiness when I felt like I was experiencing a kind of bliss.

139. a. People have an instinct for evil.  
b. People do not have an instinct for evil.
140. a. For me, the future usually seems hopeful.  
b. For me, the future often seems hopeless.
41. a. People are both good and evil.  
b. People are not both good and evil.
142. a. My past is a stepping stone for the future.  
b. My past is a handicap to my future.
143. a. "Killing time" is a problem for me.  
b. "Killing time" is not a problem for me.
144. a. For me, past, present and future is in meaningful continuity.  
b. For me, the present is an island, unrelated to the past and future.
145. a. My hope for the future depends on having friends.  
b. My hope for the future does not depend on having friends.
146. a. I can like people without having to approve of them.  
b. I cannot like people unless I also approve of them.
147. a. People are basically good.  
b. People are not basically good.
148. a. Honesty is always the best policy.  
b. There are times when honesty is not the best policy.
149. a. I can feel comfortable with less than a perfect performance.  
b. I feel uncomfortable with anything less than a perfect performance.
150. a. I can overcome any obstacles as long as I believe in myself.  
b. I cannot overcome every obstacle even if I believe in myself.

# PERSONAL ORIENTATION INVENTORY

By  
**EVERETT L. SHOSTROM**



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## SCORES

- 0. NA \_\_\_\_\_
- 1. TI \_\_\_\_\_
- 2. TC \_\_\_\_\_
- 3. O \_\_\_\_\_
- 4. I \_\_\_\_\_
- 5. SAV \_\_\_\_\_
- 6. Ex \_\_\_\_\_
- 7. Fr \_\_\_\_\_
- 8. S \_\_\_\_\_
- 9. Sr \_\_\_\_\_
- 10. Sa \_\_\_\_\_
- 11. Nc \_\_\_\_\_
- 12. Sy \_\_\_\_\_
- 13. A \_\_\_\_\_
- 14. C \_\_\_\_\_

Name \_\_\_\_\_ Last \_\_\_\_\_ First \_\_\_\_\_ Middle \_\_\_\_\_

Age \_\_\_\_\_ Date \_\_\_\_\_ Sex  M  F

Married  Single  Divorced  Widowed

Number of years of school completed \_\_\_\_\_

Religious preference \_\_\_\_\_

Occupation \_\_\_\_\_

|    |   |   |    |   |   |    |   |   |     |   |   |     |   |   |     |   |   |
|----|---|---|----|---|---|----|---|---|-----|---|---|-----|---|---|-----|---|---|
| 1  | A | B | 26 | A | B | 51 | A | B | 76  | A | B | 101 | A | B | 126 | A | B |
| 2  |   |   | 27 |   |   | 52 |   |   | 77  |   |   | 102 |   |   | 127 |   |   |
| 3  |   |   | 28 |   |   | 53 |   |   | 78  |   |   | 103 |   |   | 128 |   |   |
| 4  |   |   | 29 |   |   | 54 |   |   | 79  |   |   | 104 |   |   | 129 |   |   |
| 5  | A | B | 30 | A | B | 55 | A | B | 80  | A | B | 105 | A | B | 130 | A | B |
| 6  |   |   | 31 |   |   | 56 |   |   | 81  |   |   | 106 |   |   | 131 |   |   |
| 7  |   |   | 32 |   |   | 57 |   |   | 82  |   |   | 107 |   |   | 132 |   |   |
| 8  |   |   | 33 |   |   | 58 |   |   | 83  |   |   | 108 |   |   | 133 |   |   |
| 9  |   |   | 34 |   |   | 59 |   |   | 84  |   |   | 109 |   |   | 134 |   |   |
| 10 | A | B | 35 | A | B | 60 | A | B | 85  | A | B | 110 | A | B | 135 | A | B |
| 11 |   |   | 36 |   |   | 61 |   |   | 86  |   |   | 111 |   |   | 136 |   |   |
| 12 |   |   | 37 |   |   | 62 |   |   | 87  |   |   | 112 |   |   | 137 |   |   |
| 13 |   |   | 38 |   |   | 63 |   |   | 88  |   |   | 113 |   |   | 138 |   |   |
| 14 |   |   | 39 |   |   | 64 |   |   | 89  |   |   | 114 |   |   | 139 |   |   |
| 15 | A | B | 40 | A | B | 65 | A | B | 90  | A | B | 115 | A | B | 140 | A | B |
| 16 |   |   | 41 |   |   | 66 |   |   | 91  |   |   | 116 |   |   | 141 |   |   |
| 17 |   |   | 42 |   |   | 67 |   |   | 92  |   |   | 117 |   |   | 142 |   |   |
| 18 |   |   | 43 |   |   | 68 |   |   | 93  |   |   | 118 |   |   | 143 |   |   |
| 19 |   |   | 44 |   |   | 69 |   |   | 94  |   |   | 119 |   |   | 144 |   |   |
| 20 | A | B | 45 | A | B | 70 | A | B | 95  | A | B | 120 | A | B | 145 | A | B |
| 21 |   |   | 46 |   |   | 71 |   |   | 96  |   |   | 121 |   |   | 146 |   |   |
| 22 |   |   | 47 |   |   | 72 |   |   | 97  |   |   | 122 |   |   | 147 |   |   |
| 23 |   |   | 48 |   |   | 73 |   |   | 98  |   |   | 123 |   |   | 148 |   |   |
| 24 |   |   | 49 |   |   | 74 |   |   | 99  |   |   | 124 |   |   | 149 |   |   |
| 25 |   |   | 50 |   |   | 75 |   |   | 100 |   |   | 125 |   |   | 150 |   |   |

NAME \_\_\_\_\_ DATE TESTED \_\_\_\_\_

AGE \_\_\_\_\_ SEX \_\_\_\_\_

OCCUPATION \_\_\_\_\_

I T<sub>1</sub> - T<sub>C</sub> (Time) Ratio:  
 Self-Actualizing Average: T<sub>1</sub>:T<sub>C</sub> = 1:8  
 Your Ratio: T<sub>1</sub>:T<sub>C</sub> = 1: \_\_\_\_\_

|                      |
|----------------------|
| 1                    |
| 1 2 3 4 5 6 7 8 9 10 |

II O - I (Support) Ratio:  
 Self-Actualizing Average: O:I = 1:3  
 Your Ratio: O:I = 1: \_\_\_\_\_

|                      |
|----------------------|
| 1                    |
| 1 2 3 4 5 6 7 8 9 10 |

| TIME COMPETENT<br>Lives in the present          | INNER-DIRECTED<br>Independent, self-supportive              | VALUING   |   | FEELING   |   | SELF-PERCEPTION                    |   | SYNERGISTIC   | AWARENESS   | INTERPERSONAL SENSITIVITY   |   |    |
|---|---|---|---|---|---|------------------------------------|---|---|---|---|---|----|
|   |   | SELF-ACTUALIZING VALUE<br>Holds values of self-actualizing people | EXISTENTIALITY<br>Flexible in application of values | FEELING REACTIVITY<br>Sensitive to own needs and feelings | SPONTANEITY<br>Freely expresses feelings behaviorally | SELF-REGARD<br>Has high self-worth | SELF-ACCEPTANCE<br>Accepting of self in spite of weaknesses | NATURE OF MAN, CONSTRUCTIVE<br>Sees man as essentially good | SYNERGY<br>Sees opposites of life as meaningfully related | ACCEPTANCE OF AGGRESSION<br>Accepts feelings of anger or aggression | CAPACITY FOR INTIMATE CONTACT<br>Has warm interpersonal relationships |    |
| T <sub>C</sub>                                  | I   | SAV   | Ex  | Fr  | S   | Sr                                 | Sa  | Nc  | Sy  | A   | C   |    |
| 80  | -125  |   |   |   |   |                                    |   |   |   |   |   | 80 |
|   | 120   |   |   |   |   |                                    |   |   |   |   |   |    |
| 70  | -115  |   |   |   |   |                                    |   |   |   |   |   | 70 |
|   | -110  |   |   |   |   |                                    |   |   |   |   |   |    |
|   | -105  |   |   |   |   |                                    |   |   |   |   |   |    |
| 60  | -100  |   |   |   |   |                                    |   |   |   |   |   | 60 |
|   | 75  |   |   |   |   |                                    |   |   |   |   |   |    |
|   | -90   |   |   |   |   |                                    |   |   |   |   |   |    |
| 50  | -85   |   |   |   |   |                                    |   |   |   |   |   | 50 |
|   | 80  |   |   |   |   |                                    |   |   |   |   |   |    |
|   | -75   |   |   |   |   |                                    |   |   |   |   |   |    |
| 40  | -70   |   |   |   |   |                                    |   |   |   |   |   | 40 |
|   | 5   |   |   |   |   |                                    |   |   |   |   |   |    |
|   | -60   |   |   |   |   |                                    |   |   |   |   |   |    |
|   | 15  |   |   |   |   |                                    |   |   |   |   |   |    |
| 30  | -10   |   |   |   |   |                                    |   |   |   |   |   | 30 |
|   | 45  |   |   |   |   |                                    |   |   |   |   |   |    |
|   | -45   |   |   |   |   |                                    |   |   |   |   |   |    |
|   | 10  |   |   |   |   |                                    |   |   |   |   |   |    |
|   | -10   |   |   |   |   |                                    |   |   |   |   |   |    |
|   | 30  |   |   |   |   |                                    |   |   |   |   |   |    |
|   | 5   |   |   |   |   |                                    |   |   |   |   |   |    |
|   | 3   |   |   |   |   |                                    |   |   |   |   |   |    |
| TIME INCOMPETENT<br>Lives in the past or future | OTHER DIRECTED<br>Dependent, seeks support of others' views | Rejects values of self-actualizing people                         | Rigid in application of values                      | Insensitive to own needs and feelings                     | Fearful of expressing feelings behaviorally           | Has low self-worth                 | Unable to accept self with weaknesses                       | Sees man as essentially evil                                | Sees opposites of life as antagonistic                    | Denies feelings of anger or aggression                              | Has difficulty with warm interpersonal relations                      |    |

Row Scores



## BRIEF DESCRIPTION OF WHAT THE POI MEASURES

Your profile on the *Personal Orientation Inventory (POI)* shows the degree to which your attitudes and values compare with those of self-actualizing people. A self-actualizing person is one who is more fully functioning and who lives a more enriched life than does the average person. Such a person is developing and utilizing his unique talents to the fullest extent. It is generally agreed that a self-actualizing person might be seen as the desired result of the process of counseling or psychotherapy.

The interpretation of your scores falls into two general categories, the ratio scores and the profile scores. If your ratio scores are close to the scores that self-actualizing persons make, you may consider your values and attitudes, as measured by the POI, to be similar to these people. Your profile scores will further help you to compare yourself with self-actualizing people.

### RATIO SCORES

#### Interpretation of the $T_I - T_C$ Ratio

In order to understand the Time Incompetent - Time Competent ( $T_I - T_C$ ) ratio, it is of help to consider time in its three basic components -- Past, Present, and Future.

The  $T_I$  (Time Incompetent) person is one who lives primarily in the Past, with guilts, regrets, and resentments, and/or in the future, with idealized goals, plans, expectations, predictions, and fears.

In contrast to the  $T_I$  person, the  $T_C$  (Time Competent) person lives primarily in the Present with full awareness, contact, and full feeling reactivity. Because it is known that the self-actualizing person is not perfect, he is understood to be partly  $T_I$  and partly  $T_C$ . His  $T_I - T_C$  ratio is, on the average, 1 to 8. His ratio shows that he therefore lives primarily in the Present and only secondarily in the Past or Future.

If your score is significantly lower than 1 to 8, for example 1 to 3, this suggests that you are more time incompetent than the self-actualizing person. If your score is above 1 to 8, for example 1 to 10, this suggests that you are excessively time competent and this may perhaps reflect a need to appear more self-actualized than you really are.

#### Interpretation of the $O - I$ Ratio

In order to understand your score on the Support (Other - Inner) ratio, one should first understand that the self-actualizing person is both "other-directed" in that he is dependent upon and supported by other persons' views, and he is also "inner-directed" in that he is independent and self-supportive. The degree to which he is each of these can be expressed in a ratio. The  $O - I$  ratio of a self-actualizing person is, on the average, 1 to 3, which means that he depends primarily on his own feelings and secondarily on the feelings of others in his life decisions.

If your score is significantly higher than 1 to 3, that is 1 to 4 or above, it may be that this indicates an exaggerated independence and reflects a need to appear "too self-actualized" in responding to the POI. On the other hand, if your score is lower than 1 to 3, for example 1 to 1, it would suggest that you are in the dilemma of finding it difficult to trust either your own or others' feelings in making important decisions.

### PROFILE SCORES

On the Profile Sheet, short descriptions of each of the sub-scales are shown which describe high and low scores. In general, scores above the average on these scales, that is, above the mid-line shown by a standard score of 50, but below a standard score of 60 are considered to be most characteristic of self-actualizing adults. The closer your scores are to this range, the more similar are your responses to the POI responses given by self-actualizing people. The further below the score 50 your scores are, the more they represent areas in which your responses are not like those of self-actualizing people. If most of your scores on the profile are considerably above 60, you may be presenting a picture of yourself which is "too" healthy or which overemphasizes your freedom and self-actualization. Your counselor can discuss the psychological rationale of each scale in greater detail with you.

The ratings from this inventory should not be viewed as fixed or conclusive. Instead they should be viewed as merely suggestive and to be considered in the light of all other information. The *Personal Orientation Inventory* is intended to stimulate thought and discussion of your particular attitudes and values. Your profile will provide a starting point for further consideration of how you can achieve greater personal development.

Appendix F

The "Family and Personal Background -  
Religious Experiences and Beliefs" Survey Questionnaire

## INSTRUCTIONS

1. The following questionnaire is designed as a general survey of both your family and personal background and your religious experiences and beliefs.
2. The items in Section A are to be completed with the appropriate information. Where applicable please circle either the Yes or No response.
3. The items in Section B are to be rated on a 7-point scale indicating the strength of your agreement or disagreement with each particular item. The top end of the scale is numbered "1" and reflects a position of strong disagreement. The bottom end of the scale is numbered "7", reflecting a position of strong agreement. Intermediate scale points reflect varying positions ranging between strong disagreement and strong agreement. Position "4" represents a neutral position, indicating neither agreement or disagreement. Notice that there are answer spaces corresponding to each particular item in Section B. Please place the position number reflecting the strength of your agreement or disagreement with a particular item in the appropriate answer space. As much as possible try to avoid using the "4" position or neutral response. If a particular item cannot be answered because it is not applicable please enter the letters N/A in the corresponding answer space. A copy of the 7-point scale appears on the following page.
4. Each item in Section C consists of a pair of alternatives lettered A or B. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. For each item place the appropriate letter in the corresponding answer space, either A or B, the letter which you choose as the statement most true. In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice, do not be influenced by your previous choices.

RATING SCALE

- 1. Strong Disagreement
- 2. Disagreement
- 3. Slight Disagreement
- 4. Neither Agreement nor Disagreement
- 5. Slight Agreement
- 6. Agreement
- 7. Strong Agreement

Please feel free to detach this page and position it for ready reference when answering the questions in Section B.



I am familiar with the:

|                                |     |    |
|--------------------------------|-----|----|
| Life in the Spirit Seminars    | Yes | No |
| Baptism of the Holy Spirit     | Yes | No |
| Charismatic Renewal Movement   | Yes | No |
| gift of speaking in tongues    | Yes | No |
| other gifts of the Holy Spirit | Yes | No |

I have taken the Life in the Spirit Seminars.

Yes No

I have received the Baptism of the Holy Spirit. (Please note, this is not meant to refer to the Baptism with water commonly received in infancy.)

Yes

I would now describe myself as being a member of the Charismatic Renewal Movement.

Yes

I have been a member of the Charismatic Renewal Movement for \_\_\_\_\_ months, \_\_\_\_\_ years.

I used to be a member of the Charismatic Renewal Movement.

Yes No

It has been \_\_\_\_\_ months, \_\_\_\_\_ years since I left the movement.

I have received the gift of speaking in tongues, a gift which is now part of my present spiritual life.

Yes

I have been speaking in tongues for \_\_\_\_\_ months, \_\_\_\_\_ years.

I used to speak in tongues.                      Yes

It has been \_\_\_\_\_ months, \_\_\_\_\_ years since I last spoke  
in tongues.

I have received other gifts of the Holy Spirit which are now part  
of my present spiritual life.

Yes

These include:

I have exercised such gifts for \_\_\_\_\_ months, \_\_\_\_\_ years.

I used to exercise such gifts of the Holy Spirit.

Yes              No

It has been \_\_\_\_\_ months, \_\_\_\_\_ years since I last did so.

SECTION B

Please rate the following items on the 7-point scale described in the initial instruction, thus indicating the strength of your agreement or disagreement with each particular item. Ratings should be placed in the appropriate answer spaces.

I would describe my mother as being a notably religious woman. \_\_\_\_\_

I would describe my father as being a notably religious man.

- . My parents were actively involved in my religious instruction and development. \_\_\_\_\_

Mother

Father

- . Religious education offered through the school system or local parish church was a significant part of my childhood. \_\_\_\_\_

- . There was little conflict in the family of my childhood over religious issues. \_\_\_\_\_

- . Much of our social activity was linked to the life of the local parish or church.

- . My parents' marriage has been a consistently strong, stable, and committed relationship.

3. Generally speaking, my relationships with my parents have been positive. \_\_\_\_\_

Mother

Father

4. Generally speaking, my relationships with my brothers and sisters have been positive.



- 0. I would describe my childhood and adolescence as taking place in a stable and secure family environment. \_\_\_\_\_
  
- 1. Looking back, my years in public and high school seem fairly average -- I don't believe that my childhood or adolescent experiences were significantly different than others I witnessed.
  
- 2. Again, as I look back, I don't think that my life has been significantly more disrupted or stressful than might be expected by most. \_\_\_\_\_
  
- 3. I would describe myself as being a notably religious person. ..
  
- 14. I would describe my spouse as being a notably religious person.
  
- 5. I am actively involved in the religious instruction and development of my children.
  
- 6. Religious education offered through the school system or local parish church is a significant part of my children's experience. \_\_\_\_\_
  
- . There is little conflict in my present family over religious issues. \_\_\_\_\_
  
- 18. Much of our social activity is linked to the life of the local parish or church.
  
- 9. My marriage has been a consistently strong, stable, and committed relationship.
  
- 20. Generally speaking, my relationships with my children have been positive. \_\_\_\_\_

Sons \_\_\_\_\_

Daughters \_\_\_\_\_

1. My present family environment can be described as stable and secure. \_\_\_\_\_
2. Right now my life is no more stressful or unsettled than the lives around me. \_\_\_\_\_
23. My own religious life has caused me little personal or interpersonal conflict.
4. My relationship with God has been continual and without interruption.
5. There was never a significant time in my life when I left the Church.
26. I have had a significant "religious experience" in my life -- an experience that differs from the experience of most people that one comes into contact with in the course of one's day-to-day life. \_\_\_\_\_
7. I have at some point in my life had to critically look at my religious beliefs and upbringing. My present faith/belief is one that I have struggled with and made my own.
28. The majority of friends and important people in my life are actively involved in developing and living out their Christian faith. \_\_\_\_\_
29. Generally speaking, I seem to have attached more importance to personal religious concerns than the majority of those around me. \_\_\_\_\_
30. As I look back it seems to me that my life has been significantly more peaceful than the lives of many people I know. \_\_\_\_\_

SECTION C

Please select the one statement of each pair which you more strongly believe to be the case as far as you're concerned. For each item place the appropriate letter in the corresponding answer space.

- . Many of the unhappy things in people's lives are allowed by God as part of His plan.
- 3. People's misfortunes result from the mistakes they make
- 1. I have often found that what is going to happen is determined by God more than me.
- 3. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. \_\_\_\_\_
- 1. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
- 3. Getting a good job is in many ways a blessing from God. \_\_\_\_\_
- 1. As far as world affairs are concerned, most of us are part of a divine plan we can neither understand nor control.
- 3. By taking an active part in political and social affairs, the people can control world events.
- 1. Most people don't realize the extent to which their lives are controlled by Providence.
- 3. There really is no such thing as "luck".
- 1. In the long run God sees that the bad things and good things that happen to us are balanced.
- 3. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three. \_\_\_\_\_

- . Many times I feel that God has much influence over the things that happen to me.
- . It is impossible for me to believe that chance or luck plays an important role in my life.
- . A. What happens to me is my own doing.
- . B. Sometimes I feel that God has most of the control over the direction my life is taking.

Appendix G

Adjusted Means, Unadjusted Means, Standard Deviations,  
and N of Cases for POI Variables by Group

Table A

Adjusted Means, Unadjusted Means, Standard Deviations,  
and N of Cases for POI Variables by Group

| Variable | OT    | YT    | NT    | NR       |
|----------|-------|-------|-------|----------|
| Ti       | 5.11  | 5.52  | 6.20  | 4.88     |
|          | 5.25  | 5.81  | 6.14  | 4.52     |
|          | 2.57  | 2.04  | 2.58  | 2.94     |
|          | 20    | 21    | 28    | 21       |
| Tc       | 17.51 | 17.32 | 16.67 | 18.26    |
|          | 17.40 | 17.14 | 16.75 | 18.43    |
|          | 2.74  | 2.10  | 2.59  | 3.01     |
|          | 20    | 21    | 28    | 21       |
|          | 39.01 | 43.06 | 44.16 | 37.39    |
|          | 40.95 | 45.52 | 44.50 | 32.62    |
|          | 12.46 | 10.73 | 10.70 | 5.67     |
|          | 20    | 21    | 28    | 21       |
|          | 86.20 | 83.38 | 81.93 | 89.48    |
|          | 84.40 | 81.33 | 81.68 | 93.57    |
|          | 12.80 | 10.78 | 10.82 | 6.16     |
|          | 20    | 21    | 28    | 21       |
| SAV      | 19.02 | 19.79 | 19.37 | 20.75    |
|          | 18.65 | 19.29 | 19.25 | 21.76    |
|          | 2.54  | 2.97  | 2.59  | 1.64     |
|          | 20    | 21    | 28    | 21       |
| Ex       | 20.53 | 18.30 | 18.19 | 22.62 ** |
|          | 20.05 | 17.91 | 18.14 | 23.52    |
|          | 5.18  | 4.00  | 4.01  | 4.00     |
|          | 20    | 21    | 28    | 21       |
| Fr       | 15.71 | 15.56 | 15.23 | 17.05    |
|          | 15.40 | 15.19 | 15.18 | 17.81    |
|          | 2.56  | 1.99  | 3.16  | 2.06     |
|          | 20    | 21    | 28    | 21       |
|          | 12.46 | 11.35 | 11.36 | 13.63 *  |
|          | 12.20 | 11.05 | 11.29 | 14.29    |
|          | 2.88  | 2.13  | 2.68  | 1.71     |
|          | 20    | 21    | 28    | 21       |

Table A (Continued)

|    |       |       |       |         |
|----|-------|-------|-------|---------|
| Sr | 11.41 | 12.38 | 12.79 | 12.84   |
|    | 11.20 | 12.00 | 12.82 | 13.38   |
|    | 2.67  | 2.15  | 1.89  | 2.06    |
|    | 20    | 21    | 28    | 21      |
| Sa | 17.24 | 16.14 | 14.91 | 17.38 * |
|    | 17.10 | 16.14 | 14.93 | 17.48   |
|    | 3.29  | 3.20  | 3.13  | 3.30    |
|    | 20    | 21    | 28    | 21      |
| Nc | 11.23 | 12.52 | 11.45 | 12.35 * |
|    | 11.00 | 12.29 | 11.39 | 12.86   |
|    | 2.13  | 1.38  | 2.01  | 1.28    |
|    | 20    | 21    | 28    | 21      |
| Sy | 6.87  | 6.85  | 6.47  | 7.20    |
|    | 6.75  | 6.71  | 6.46  | 7.48    |
|    | .97   | 1.15  | 1.37  | 1.17    |
|    | 20    | 21    | 28    | 21      |
|    | 16.63 | 15.59 | 15.49 | 16.56   |
|    | 16.20 | 15.00 | 15.43 | 17.67   |
|    | 3.46  | 3.56  | 3.49  | 2.06    |
|    | 20    | 21    | 28    | 21      |
|    | 19.74 | 17.61 | 17.94 | 19.34   |
|    | 19.35 | 17.19 | 17.89 | 20.19   |
|    | 4.27  | 2.70  | 3.25  | 2.71    |
|    | 20    | 21    | 28    | 21      |

\* p &lt; .05

\*\* p &lt; .01

Appendix H

Adjusted Means, Unadjusted Means, Standard Deviations,  
and N of Cases for LOC Variables by Group



Table B

Adjusted Means, Unadjusted Means, Standard Deviations,  
and N of Cases for LOC Variables by Group

| Variable | OT   | YT   | NT   | NR       |
|----------|------|------|------|----------|
| ORSCORE  | 8.16 | 6.15 | 7.93 | 6.91     |
|          | 8.05 | 6.24 | 7.68 | 7.29     |
|          | 2.72 | 3.22 | 3.55 | 4.40     |
|          | 20   | 21   | 28   | 21       |
| OR8      | 2.48 | 2.15 | 2.91 | 2.75     |
|          | 2.50 | 2.38 | 2.86 | 2.57     |
|          | 1.19 | 1.24 | 1.63 | 1.91     |
|          | 20   | 21   | 28   | 21       |
| MR8      | 5.07 | 5.07 | 4.20 | 1.05 *** |
|          | 5.10 | 5.14 | 4.21 | .91      |
|          | 2.45 | 2.27 | 2.35 | 1.26     |
|          | 20   | 21   | 28   | 21       |

\*\*\* p < .001

Appendix I

Adjusted Means, Unadjusted Means, Standard Deviations,  
and N of Cases for Section B Variables by Group

Table C

Adjusted Means, Unadjusted Means, Standard Deviations,  
and N of Cases for Section B Variables by Group

| Variable | OT   | YT   | NT   | NR   |
|----------|------|------|------|------|
| B1       | 5.49 | 5.73 | 5.51 | 4.24 |
|          | 5.50 | 5.76 | 5.61 | 4.05 |
|          | 1.88 | 1.58 | 1.95 | 2.04 |
|          | 20   | 21   | 28   | 21   |
| B2       | 4.67 | 4.30 | 5.11 | 4.25 |
|          | 4.83 | 4.60 | 5.19 | 3.71 |
|          | 1.58 | 2.23 | 1.67 | 2.05 |
|          | 20   | 21   | 28   | 21   |
| B3       | 5.21 | 4.74 | 5.64 | 4.67 |
|          | 5.33 | 5.20 | 5.83 | 4.05 |
|          | 2.10 | 2.15 | 1.62 | 1.84 |
|          | 12   | 15   | 18   | 19   |
| B3A      | 4.96 | 4.86 | 5.59 | 4.69 |
|          | 5.20 | 5.25 | 5.75 | 3.86 |
|          | 2.26 | 2.12 | 1.76 | 2.03 |
|          | 20   | 20   | 28   | 21   |
| B3B      | 3.98 | 3.68 | 4.73 | 4.01 |
|          | 4.17 | 3.90 | 4.85 | 3.52 |
|          | 2.09 | 2.18 | 1.92 | 1.91 |
|          | 18   | 19   | 27   | 21   |
| B4       | 5.55 | 5.22 | 5.81 | 4.90 |
|          | 5.70 | 5.71 | 5.93 | 4.10 |
|          | 1.90 | 2.00 | 1.84 | 1.70 |
|          | 20   | 21   | 28   | 21   |
| B5       | 5.79 | 5.57 | 6.02 | 5.53 |
|          | 5.84 | 5.67 | 6.11 | 5.29 |
|          | 1.95 | 1.85 | 1.57 | 1.55 |
|          | 19   | 21   | 28   | 21   |
| B6       | 4.11 | 3.70 | 4.08 | 3.10 |
|          | 4.28 | 4.05 | 4.21 | 2.43 |
|          | 2.11 | 2.20 | 1.87 | 1.69 |
|          | 18   | 21   | 28   | 21   |

Table C (Continued)

|     |      |      |      |      |
|-----|------|------|------|------|
| B7  | 4.78 | 3.70 | 5.10 | 5.63 |
|     | 4.84 | 4.00 | 5.29 | 5.00 |
|     | 2.24 | 2.34 | 2.28 | 1.81 |
|     | 19   | 20   | 28   | 20   |
| B8  | 5.31 | 5.87 | 6.20 | 5.98 |
|     | 5.29 | 6.00 | 6.30 | 5.78 |
|     | 1.68 | .94  | 1.03 | 1.11 |
|     | 14   | 17   | 20   | 18   |
| B8A | 5.55 | 6.34 | 6.05 | 5.55 |
|     | 5.55 | 6.30 | 6.14 | 5.45 |
|     | 1.36 | .66  | 1.21 | 1.57 |
|     | 20   | 20   | 28   | 20   |
| B8B | 5.82 | 5.23 | 5.77 | 5.76 |
|     | 5.88 | 5.47 | 5.85 | 5.35 |
|     | .96  | 1.54 | 1.63 | 1.63 |
|     | 16   | 19   | 27   | 20   |
| B9  | 5.48 | 5.98 | 6.19 | 6.08 |
|     | 5.56 | 6.10 | 6.21 | 5.85 |
|     | 1.34 | .70  | 1.03 | 1.18 |
|     | 18   | 21   | 28   | 20   |
| B10 | 5.11 | 4.77 | 5.49 | 5.24 |
|     | 5.15 | 4.76 | 5.54 | 5.14 |
|     | 1.81 | 2.17 | 2.08 | 1.93 |
|     | 20   | 21   | 28   | 21   |
| B11 | 4.77 | 5.07 | 5.13 | 4.63 |
|     | 4.80 | 5.05 | 5.25 | 4.48 |
|     | 1.88 | 1.66 | 1.82 | 2.02 |
|     | 20   | 21   | 28   | 21   |
| B12 | 5.08 | 4.21 | 5.08 | 4.46 |
|     | 5.05 | 4.19 | 5.25 | 4.29 |
|     | 1.84 | 1.89 | 1.99 | 1.90 |
|     | 19   | 21   | 28   | 21   |

Table C (Continued)

|     |      |      |      |          |
|-----|------|------|------|----------|
| B13 | 6.12 | 5.94 | 5.91 | 1.95 *** |
|     | 6.20 | 6.10 | 5.93 | 1.71     |
|     | .77  | .77  | .90  | .78      |
|     | 20   | 21   | 28   | 21       |
| B14 | 5.80 | 5.37 | 4.47 | 1.20 *** |
|     | 5.46 | 4.56 | 4.69 | 2.39     |
|     | 1.81 | 2.23 | 1.85 | 1.66     |
|     | 13   | 18   | 16   | 13       |
| B15 | 5.90 | 5.85 | 6.12 | 2.02 *** |
|     | 5.86 | 5.89 | 6.06 | 2.10     |
|     | .95  | .76  | .57  | 1.60     |
|     | 14   | 18   | 16   | 10       |
| B16 | 6.08 | 5.47 | 6.22 | 2.20 *** |
|     | 6.17 | 5.63 | 6.12 | 2.00     |
|     | .94  | 1.46 | .93  | 1.41     |
|     | 12   | 16   | 17   | 10       |
| B17 | 4.65 | 5.24 | 5.64 | 5.58     |
|     | 4.69 | 5.11 | 5.68 | 5.65     |
|     | 2.02 | 1.88 | 1.39 | 1.98     |
|     | 16   | 19   | 22   | 20       |
| B18 | 5.02 | 4.17 | 4.53 | 1.38 *** |
|     | 5.05 | 4.25 | 4.55 | 1.25     |
|     | 1.87 | 1.80 | 1.77 | .44      |
|     | 19   | 20   | 22   | 20       |
| B19 | 5.78 | 4.63 | 5.66 | 5.80     |
|     | 5.87 | 4.45 | 5.77 | 5.85     |
|     | 1.51 | 2.40 | 1.86 | 1.46     |
|     | 15   | 20   | 17   | 13       |
| B20 | 5.95 | 6.22 | 6.65 | 5.22     |
|     | 6.00 | 6.29 | 6.46 | 5.29     |
|     | .71  | .61  | .52  | 2.14     |
|     | 13   | 14   | 11   | 7        |

Table C (Continued)

|      |      |      |      |          |
|------|------|------|------|----------|
| B20A | 5.63 | 5.87 | 6.34 | 4.89     |
|      | 5.62 | 5.94 | 6.29 | 4.83     |
|      | 1.45 | .68  | .61  | 2.14     |
|      | 13   | 16   | 14   | 6        |
| B20B | 5.67 | 6.26 | 6.47 | 5.15     |
|      | 5.64 | 6.35 | 6.39 | 5.17     |
|      | 1.57 | .61  | .87  | 2.32     |
|      | 11   | 17   | 13   | 6        |
| B21  | 6.08 | 5.72 | 6.29 | 6.00     |
|      | 6.12 | 5.68 | 6.38 | 5.91     |
|      | 1.05 | 1.92 | 1.10 | 1.04     |
|      | 17   | 19   | 24   | 21       |
| B22  | 5.74 | 4.85 | 4.48 | 5.56     |
|      | 5.90 | 5.24 | 4.64 | 4.81     |
|      | 1.29 | 1.90 | 2.02 | 1.86     |
|      | 20   | 21   | 28   | 21       |
| B23  | 3.71 | 4.25 | 5.02 | 6.33 *** |
|      | 3.90 | 4.52 | 5.14 | 5.71     |
|      | 2.26 | 2.02 | 1.60 | 1.27     |
|      | 19   | 21   | 28   | 21       |
| B24  | 4.76 | 4.91 | 4.96 | 2.76 **  |
|      | 4.90 | 5.10 | 5.11 | 2.24     |
|      | 1.86 | 1.73 | 1.77 | 1.67     |
|      | 20   | 21   | 28   | 21       |
| B25  | 5.61 | 4.86 | 5.29 | 3.30 **  |
|      | 5.90 | 5.24 | 5.46 | 2.43     |
|      | 1.94 | 2.12 | 2.12 | 2.01     |
|      | 19   | 21   | 28   | 21       |
| B26  | 6.54 | 5.98 | 4.65 | 1.90 *** |
|      | 6.45 | 5.86 | 4.71 | 2.05     |
|      | .95  | 1.35 | 1.88 | 1.60     |
|      | 20   | 21   | 28   | 21       |

Table C (Continued)

|     |      |      |      |          |
|-----|------|------|------|----------|
| B27 | 5.51 | 6.22 | 4.54 | 3.61 **  |
|     | 5.20 | 5.81 | 4.50 | 4.38     |
|     | 2.12 | 1.03 | 2.43 | 2.38     |
|     | 20   | 21   | 28   | 21       |
| B28 | 6.23 | 5.40 | 5.43 | 2.89 *** |
|     | 6.25 | 5.52 | 5.46 | 2.71     |
|     | .72  | 1.17 | 1.45 | 1.79     |
|     | 20   | 21   | 28   | 21       |
| B29 | 5.99 | 5.88 | 5.01 | 1.95 *** |
|     | 6.00 | 5.91 | 5.04 | 1.91     |
|     | .97  | .89  | 1.53 | 1.26     |
|     | 20   | 21   | 28   | 21       |
| B30 | 5.30 | 5.05 | 4.31 | 3.40 *   |
|     | 5.30 | 4.81 | 4.39 | 3.52     |
|     | 1.95 | 1.86 | 1.81 | 1.47     |
|     | 20   | 21   | 28   | 21       |

\* p < .05  
 \*\* p < .01  
 \*\*\* p < .001