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INTER-RELATIONSHIPS BETWEEN LONELINESS AND RELIGIOSITY

by

Brian D. Dufton

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in partial fulfillment for the degree

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> It is not good for a person to be alone. I will create another person to share life with the first (paraphrased from Genesis 2: 18).

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Abstract

Religiosity has been found to be inversely associated with the intensity of loneliness although results are mixed. This study focused on how different aspects of religiosity (belief content, belief rigidity, belief saliency, religious group involvement and private devotional practices) might be associated with loneliness by way of mediating variables. The latter included one's sense of purpose in life, coping skills, attributions and networks. The sample was composed of 76 nonbelievers, 76 conservative believers and 80 nonconservative believers as defined by a measure of belief commitment and the Literal, Anti-literal and Mythological scales of religious meaning commitment. Loneliness was found to be associated with a number of nonreligious variables. Loneliness was not found to be related to aspects of religiosity. The three groups did differ, on the other hand, in a number of ways. In contrast to the other two groups, the conservative group tended to express the most life purpose and satisfaction, more opportunities for nurturance (more social provisions overall) and greater effectiveness of problem redefinition as well as be more religious as assessed by variables of religious faith and religiosity-related variables (religiousness of networks, religious coping skills and cognitions). It was concluded that although religiosity did not influence loneliness directly, the former did appear to interact with the latter in three ways; that is, through antecedents of loneliness, through the ways that people think about and cope with loneliness and through the ways that people come to see themselves as lonely.

INTER-RELATIONSHIPS BETWEEN LONELINESS AND RELIGIOSITY

Loneliness has been described as a "pervasive contemporary personal and social problem" (Ellison, 1978, p. 3). Bradburn (1969) reported that 26% of people questioned in a survey had felt either very lonely or socially remote during the preceding weeks.

Perlman and Peplau (1982) have noted, moreover, that loneliness has been consistently linked with aversive emotional states ranging from depression (Leiderman, 1969; Ortega, 1969), dissatisfaction (Rubenstein, Shaver and Peplau, 1979), anxiety (Moustakas, 1961), boredom (Weiss, 1973) and marginality (Gordon, 1976) to hostility (Zilboorg, 1938). Rubenstein and Shaver (1982) have found that lonely individuals tend to be characterized by desperation, depression, impatient boredom and self-depreciation.

Despite the pervasiveness of this largely negative condition, professional attention has only recently been directed towards helping individuals cope with loneliness (Young, 1982). For at least two reasons it is unlikely, moreover, that increased professional attention and aid will serve to alleviate loneliness in the bulk of the population. First, lonely individuals often fail to utilize professional resources. For instance, among a sample of widows, very few turned to professionals (Lopata, 1978). Lopata, Baum and Heinemann (1982) have speculated that widows may not seek professional help in coping with widowhood (including feelings of loneliness) due to lack of familiarity with and willingness to use such resources, lack of connecting links, financial and

time costs and fear of admitting to mental problems. Participation in less formal but organized groups such as Widow to Widow may even be avoided for fear of being stigmatized, or of becoming more distressed by being involved with other lonely people (Lopata et al., 1982). As well, Lopata et al. (1982) have noted that neither professionals nor organized groups provide sufficient contact and activities to completely fill a lonely schedule.

Second, even if lonely individuals were eager to come for professional help, it is unlikely that professional resources would be sufficient to meet the demand. Bloom (1977), as well as Rappaport (1977), has noted that professional resources cannot adequately meet the needs of the severely mentally ill, much less the needs of those afflicted with the common social maladies of loneliness and interpersonal alienation (Yalom, 1975).

In addition to increasing professional aid, then, it will be important to determine how people cope "naturally" with loneliness so that increased coping of the latter sort might take place. This study, therefore, is concerned with how people both prevent and cope with loneliness in the absence of professional help. In particular, the relationship of religiosity to loneliness will be explored. This chapter will survey common responses to loneliness, how loneliness has been found to be associated with religiosity, the need to think of religiosity in a multidimensional way and lastly how a number of nonreligious variables might mediate the relationship between religiosity and loneliness.

Responses to Loneliness

Responses to loneliness differ widely. A factor analytic study of reactions to loneliness suggested that individuals may respond with sad passivity (sleeping, crying, over-eating), active solitude (writing, reading, listening to music), spending money (going shopping), social contact (calling a friend, going to see someone) or any combination of the above (Rubenstein et al., 1982). Paloutzian and Ellison (1982) have suggested a list of coping factors which only partially overlaps with that of Rubenstein et al., (1982): sensually-oriented responses (drinking, taking drugs, sexual involvement), searching responses (going to a dance, play or movie), nonsocial diversion (eating, studying), reflective solitude (getting alone to think), intimacy contact responses (talking to a close friend about one's feelings, spending time with a close friend), passivity (sleep) and religiously-oriented responses (praying, reading the Bible). When asked to rate the effectiveness of these responses, subjects perceived the most effective to be talking to or spending time with a friend, thinking alone, listening to music and praying (for a highly religious group).

Clearly, some responses to loneliness are likely to be more effective than others. It is important, then, to isolate the determinants of effective natural coping. Cutrona (1982) has suggested that the nature of one's attributions, degree of assertiveness, the nature of one's environment and chronicity of loneliness are associated with particular coping responses. Religiosity would also appear

to be associated with particular responses to loneliness.

Religiosity

Over 2,000,000,000 people in the world have religious commitments. For many of these people, their religiosity will determine, at least in part, how life in general is lived and experienced (Paloutzian, 1983; Batson and Ventis, 1982). Religious committment may also determine both how often and in what ways loneliness is encountered and dealt with. Religiosity may be a large natural resource, therefore, to aid in the prevention and alleviation of loneliness. Certainly, a number of religious writers have described their faith as an effective deterrent against loneliness. Billy Graham (1982), for example, in an article entitled "Never be lonely again" exhorted lonely individuals, in addition to learning to enjoy one's own company and to reaching out to other people in general, to reach out both to God and to fellow believers. Applewhite (1980), similarly, enjoined lonely people to seek help in God, in others and in professional counseling. Wittman and Bollman (1977), furthermore, suggested that the only true answer to loneliness was a reaching out to God for comfort. Regardless of the scope of coping responses suggested, nonetheless, religion has often been presented as an aid against loneliness.

Studies of religiosity and loneliness, however, have not shown consistent results. Instead, results seem to be dependent on three factors. First, particular forms of religiosity seem to be more clearly associated with less loneliness than other forms. For example, Paloutzian and Ellison (1977) reported that "born again" Christians (those

who agree to the statement that they have received Jesus Christ as personal Saviour and Lord) scored lower on loneliness ($p < .06$) than "ethical believers" (those who agree to the statement that they try to follow the ethical and moral teachings of Christ).

Second, the degree of religiosity may influence the latter's relationship with loneliness. Jones, Carpenter and Quintana (1982) reported that although religiosity was inversely related to loneliness in a sample for Tulsa ($r = =.23$), religiosity was not correlated with loneliness in a sample from Peurto Rico ($r = -.06$). While the two samples would obviously differ on a number of variables, they differed, in particular, in their degree of religiosity. The sample from Tulsa was significantly more religious than the sample from Puerto Rico. One may need to be highly religious for religiosity to affect loneliness. Further evidence of the importance of the degree of religiosity is given by a finding that loneliness was inversely related to an orientation to religion that was integrative, that is, one in which an individual seeks to make religion a central factor in his or her life, ($r = -.53$) but was unrelated to an approach that was more casual (Ellison and Paloutzian, 1978).

Third, results vary from study to study, In contrast to the studies reported by Paloutzian et al. (1977) and Jones et al. (1982), for example, preliminary results from a survey of the cities of Winnipeg and Edmonton showed that the self-rated importance of religion in one's life was not related to loneliness as measured by either a global loneliness

item or a subset of items from the UCLA Loneliness Scale. Such discrepancies in results may be due to differences in the ways that studies have conceptualized religiosity (Paloutzian, 1983; Batson and Ventis, 1982). Whitam (1962) has suggested that researchers in religion have tended to oversimplify the construct of religiosity by (1) glossing over between (and within) group and denominational differences (2) identifying religiosity with particular religious orientations and, thus, failing to regard an individual who holds liberal, intellectual views about religion to be as "religious" as a person who holds conservative, emotional views and (3) equating religiosity with religious affiliation or church attendance.

Both greater complexity (Finner, 1970; Mindell and Vaughan, 1978; Gray, 1970) and specificity (Ajzen and Fishbein, 1977) in the study of religiosity are likely to be necessary if the relationship between religiosity and loneliness is to be more clearly understood. Glock (1962) has attempted to gain complexity and specificity by conceptualizing religiosity as a multidimensional construct. Religiosity, hence, may be thought of as consisting of a number of inter-related components such as beliefs and behaviors. The following section surveys various aspects of religiosity.

Dimensions of Religiosity

Belief content. Religious beliefs vary in content; some individuals may believe that their self-worth comes only from God while others may feel that there are other sources of self-worth. As noted earlier, Ellison et al. (1977)

distinguished between Christians whose beliefs differed on the nature of religious commitment. The content of beliefs has often been examined on a dimension of orthodoxy or conservatism (Feagin, 1964). Conservative Christians are more likely to assent to the orthodox creeds of the church such as the diety of Christ or the veracity of reported miracles (Salisbury, 1962). Less conservative believers, on the other hand, may hold that although the miracles may not be factually true as reported in the Bible they nonetheless point to an eternal truth (Hunt, 1972). Hunt (1972) has suggested that such an approach to belief content may be defined as symbolic or mythological rather than literal. Unbelievers, in contrast, accept neither a literal nor a symbolic interpretation of religious belief content.

Belief rigidity. Beliefs may also vary in flexibility (Allen and Spilka, 1967). They may allow for a diversity of approaches and beliefs or be rigid and closed. Rokeach (1960) has suggested religious beliefs may often be dogmatically adhered to with either little question or personal integration. In particular, conservative religious beliefs have been found to be positively related to dogmatism (Swindell and L'Abate, 1970). Rokeach (1960) has suggested that dogmatism is made up of a number of components such as (a) accentuation of differences between belief and disbelief systems (b) co-existence of contradictions within the belief system (c) greater differentiation of the belief system than the disbelief system (d) trust in authority (e) belief in the

cause (f) intolerance toward the disbeliever (g) increased association with like-minded believers and (h) self-proselytization.

Belief saliency. Finally, beliefs may also vary in saliency (how important they are in the individual's life) (Glock, 1962; King and Hunt, 1972). For "committed" believers, beliefs are a matter of personal concern and central attention while for "consensual" believers, beliefs are detached and compartmentalized (Allen et al., 1967). Allport and Ross (1967) have suggested, similarly, that those who are "intrinsically" religious view their religion and its beliefs as the master motive of their lives; they endeavour to internalize their religion so that they will be guided by it. Such individuals are also frequent attenders of church services. In contrast stand the "extrinsically" religious who Allport et al. (1967) have noted are often irregular and casual church attenders who view their religious contacts as less important and integrated in their lives.

Religious group involvement. Religious behavior may consist of organized group activities; that is, attending worship services and committee meetings (King et al., 1972). Churches and denominations differ in the frequency and in the content of such meetings. Individuals within churches, furthermore, differ in the degree to which they both attend and participate in such events as well as in the reasons for attending. Monaghan (1967), for example, suggested that individuals attended one conservative church for largely

three reasons; that is, either to reduce fears of damnation, to participate socially or to be given clear guidance about how life should be lived. Allport et al. (1967) have also examined various reasons for church attendance. While the intrinsically religious attended to grow "spiritually" the extrinsically religious sought to use religious attendance to serve other interests; that is, either to gain a sense of security and solace or to make social contacts (for business purposes or to be with the "right" people).

Private devotional practices. Religious behavior also consists of private devotional practices such as prayer, Bible study and meditation (King et al., 1972). This aspect of religious behavior has been frequently tied to experiential and emotional aspects of religiosity (Glock, 1962; Paloutzian et al., 1982).

Religiosity and Loneliness

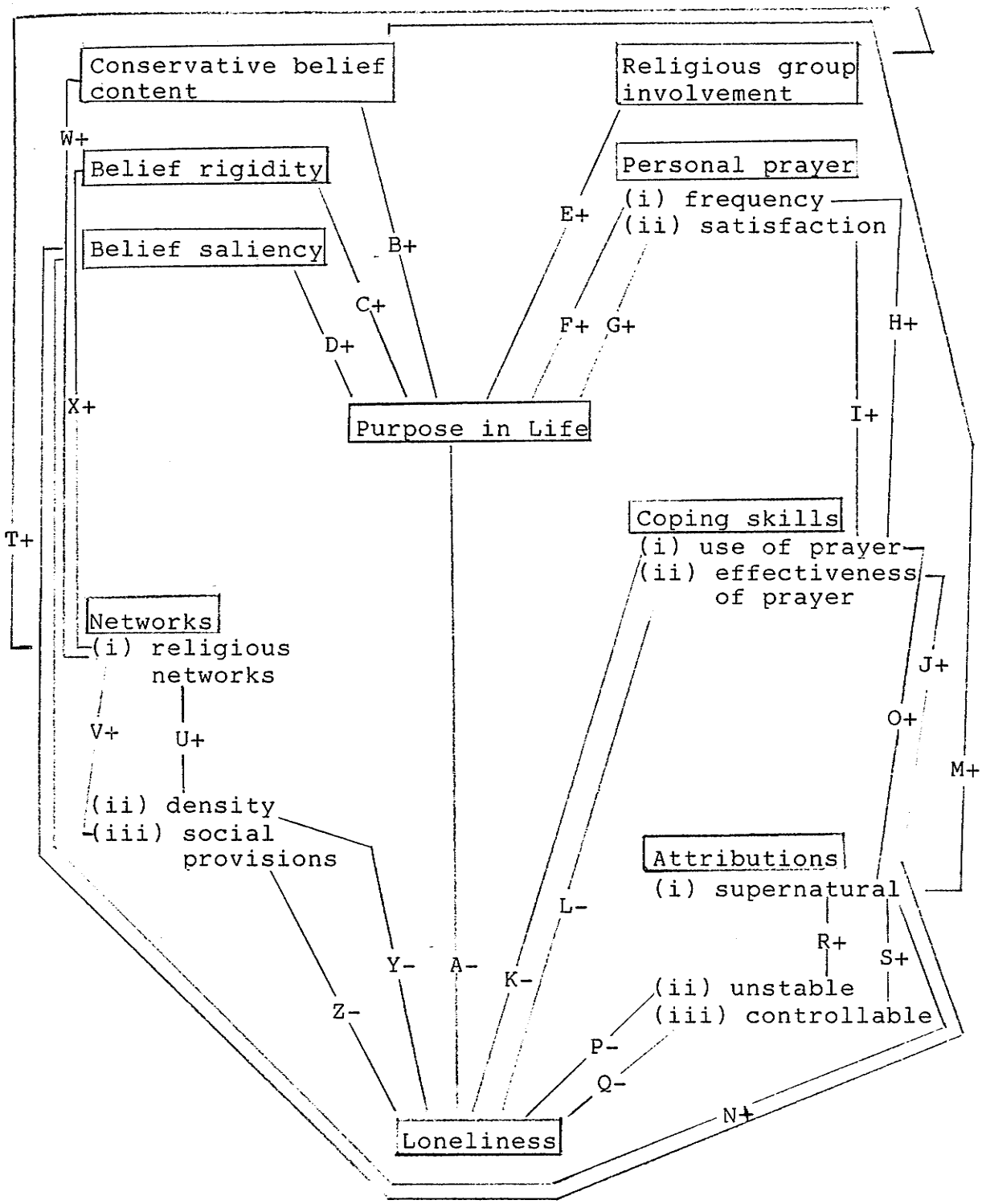
Table 1 is a diagrammatic representation of hypothesized inter-relationships between aspects of religiosity and nonreligious variables, all of which have been found to be related to loneliness in past research.

Insert Table 1 about here.

Religious beliefs (their content, their rigidity and their importance) and religious behaviors (group involvement and personal prayer) both influence (and are probably influenced by) one's sense of purpose in life, coping skills,

Table 1

Inter-relationships between variables



attributions about loneliness and networks. The latter variables, in turn, influence (or, at least, are associated with) one's experience of loneliness. Religiosity is not associated with loneliness directly, then, but instead religious variables and loneliness are both correlated with other variables such as networks and life purpose. The following sections explore these relationships more fully.

Purpose in Life

Individuals who are lonely often express attitudes suggestive of meaninglessness and powerlessness (Jones, 1982; Rubenstein et al., 1982). Although a sense of meaning and control may be acquired in many ways; that is, through a sense of possessing solutions to ultimate life questions or by the process itself of seeking for answers to ultimate questions or merely by having an interest in life problems (Currie, 1974), most research on meaning and purpose has focused on the sense of life purpose which is gained from a sense of possessing solutions. A sense of attained life purpose and loneliness have been found to be consistently related in an inverse manner. Jones et al. (1982) have reported correlations of -.38 and -.37 while Ellison et al. (1978) have reported a correlation of -.51. Correlations between loneliness and existential well-being, which measures both life direction and satisfaction, furthermore, have ranged from -.51 to -.65 (Ellison et al., 1978; Paloutzian and Ellison, 1979; Ellison and Campise, 1978; Paloutzian et al., 1982). When the UCLA Loneliness Scale has been divided into

components, moreover, some of the latter are closely associated with existential well-being. For example, "a sense of belonging" and "a feeling of being understood" were correlated respectively with existential well-being .54 and .59 (Ellison et al., 1978). As well, anomie or normlessness and alienation from societal values have been shown to be correlated .30 and .44 respectively with loneliness as measured by a global loneliness item (Solano, 1980). While such attitudes are found among many lonely people, for some the sense of purposelessness is so pervasive that the "spiritually lonely" may represent a separate type of loneliness (Brennan, 1982) which can be discriminated from emotional and social forms (Weiss, 1973). The Belcher Extended Loneliness Scale explicitly measures both anomie and alienation as identified subtypes of loneliness (Belcher, 1973; Solano, 1980). Regardless of the validity of such subtypes, it is predicted that greater perceived purpose, that is, a sense of attained meaning and direction in life, will be associated with less loneliness (See relationship A, Table 1).

At the same time, it is unclear as to why less loneliness and life purpose are related. It may be that when one is lonely that all of life seems to be empty and without meaning. On the other hand, a lack of purpose in life may cause one to feel alone and helpless. Feeling that one has a meaning may allow for greater predictability of life events as well as a way in which to interpret past events. Thompson (1981)

has suggested that the possession of such perspectives allows an individual to cope more effectively with stressful events. Frankl (1959) has suggested that a life purpose allows one to cope with extremely severe problems. Life meaning and purpose as measured by the Purpose-in-Life test (PIL) has been found to discriminate between psychiatric and nonpsychiatric patients as well as between the latter and businessmen (Crumbaugh, 1968). Crumbaugh and Maholick (1964) reported that purpose seems to be an aspect of normal functioning which is less frequently found among psychiatric patients.

A final reason why those individuals with purpose may be less lonely is that, aside from explanatory or motivating power, purpose may provide an inseparable "companion". Indications of how life purpose might influence loneliness may be provided by an examination of how the former might be related to various aspects of religiosity.

Belief content. Glock (1965) has suggested that, by definition, believers are those who have found solutions to problems of life meaning and purpose. Kelley (1972), moreover, has speculated that the primary function of religion is to explain the meaning of life. A religious meaning system may aid individuals by giving them perspectives on problems beyond the immediate experience of here-and-now reality (Wuthnow, 1976) or by simply granting them an integrative structure with which to make sense of life stresses (Schweiker, 1969; Glock, 1962) including loneliness.

There is evidence that religious beliefs do provide a

sense of meaning and purpose. Nonbelievers, for example, have been found to exhibit less life purpose than those holding religious beliefs (Ellison and Paloutzian, 1979). In particular, beliefs most typical of a conservative or born again orientation, in contrast to an ethical orientation, have been found to be most often positively associated with a sense of life purpose. Kelley (1972) has suggested that conservative believers tend to subordinate personal desires and ambitions to the shared goals of the group, are willing to put in more time and effort for the cause and have an assurance or conviction of doing right. Beliefs that emphasize individual gifts, a sense of personal acceptance and communion with God and that God's evaluation is more important than that of people have been found to be correlated at least .59 with existential well-being (Ellison and Economos, 1981). Crandall and Rasmussen (1975), furthermore, reported that those subjects who attributed more importance to the values of salvation and eternal life and less importance to pleasure and comfort than others also exhibited more purpose in life.

It is predicted, therefore, that although believers may tend to feel a greater sense of life purpose than nonbelievers, those with more religiously conservative beliefs, in particular, will feel a greater sense of life purpose than those with less conservative beliefs (relationship B).

Belief rigidity. Individuals who hold beliefs dogmatically may be more likely to feel purpose and meaning

in their lives than those who do not hold beliefs dogmatically (relationship C); a rigid interpretation of events may give greater structure (Kelley, 1972). Faunce and Fulton (1958), for example, reported that Catholics and fundamentalist Protestants were able to respond to questions about death more readily due to the possession of "ready-made" answers. It is possible that the sureness with which beliefs are held may play a larger role in strengthening a sense of purpose than the content of beliefs. Alexander and Adlerstein (1958) reported that the degree of certitude of beliefs about death was more crucial than the content of the beliefs in lowering death anxiety. Greater rigidity of beliefs, then, may be associated with greater purpose in life.

Belief saliency. Those religious individuals whose religious beliefs are more important to them than to other religious individuals are likely to experience greater purpose (relationship D). King et al. (1972) reported that a sense of purpose in life was correlated with the salience of religious beliefs (r = .35). Similarly, although Allen et al. (1967) did not find religiosity and meaning to be consistently related, committed religious individuals were more likely than the consensually religious to feel life was meaningful. Soderstrom and Wright (1977) also found that committed religious individuals had more meaning in life than the uncommitted. Although the literature is not completely consistent (See Ellison et al., 1979), an integrative instrinsic approach to religiosity has also been

associated with higher life purpose. Crandall et al. (1975) reported that PIL scores and an intrinsic orientation to religion were correlated .31 while PIL scores and an extrinsic orientation to religion were not correlated. Similar findings have been reported by King et al. (1972) and Bolt (1975). Finally, Crumbaugh, Raphael and Shrader (1970) found that a group of Dominican sisters (who would likely exhibit highly salient religious thought) scored unusually high on the PIL test compared to other groups. It seems likely that individuals who are firmly committed to one goal or to one way of life would feel a greater sense of purpose. On the other hand, if one feels one has a purpose in life, then that individual may strive to make his or her beliefs a central aspect of his or her life.

Religious group involvement. Individuals who participate more often in organized religious activities may tend to exhibit more life purpose (relationship E). While Bell (1957) found no relationship between church attendance and anomie, Dean (1968) reported that a composite measure of religious participation (including church attendance) was related curvilinearly to anomie; those who attended most and least often reported the most meaning and sense of control in their lives. Ellison et al. (1981) found that the average number of Sunday services attended each month was significantly related to existential well-being (r = .23). King et al. (1972) also found a significant, although weak, relationship between life purpose and a measure of church attendance as

well as with a measure of involvement in church activities.

It is unclear as to why involvement in church activities might, at times, be related to life purpose. Frequent attendance may suggest an approach to religion that is integrative and growing. Certainly, those who devote their free time to church committees and groups would seem to be identifying their life focus with religious concerns. On the other hand, attendance and life purpose may both be reflections of certain beliefs. For example, born agains have been found to attend more Sunday services than ethical believers (Ellison et al., 1978). Alternatively, frequent attendance may provide support for conceptions of life purpose and meaning and, thus, influence purpose in life directly. Gibbons and de Jarnette (1972) reported that in some religiously conservative churches a portion of each worship service was set aside for "existentially oriented suggestions" regarding salvation and its effects. While not all churches allow for multiple formal affirmations of beliefs, endorsement is usually provided by the preacher. Such affirmations may lead to a high degree of certitude about one's beliefs and life meaning.

It is predicted, therefore, that greater involvement (as evidenced by church attendance and activity in religious groups) in the church will be associated with a greater sense of life purpose.

Personal prayer. While less directly related to meaning than other religious variables explored thus far, devotional

practices such as prayer may also influence one's sense of life purpose. Personal prayer may cause religious individuals to feel that they are "in touch" with a transcendent purpose (Andreason, 1972). Ritzema (1975) reported that those who prayed frequently and felt close to God when doing so were more likely to attribute divine causation when explaining incidents than were those who seldom prayed and felt more distant from God. Certainly those who pray regularly have been found to feel better about their religious life as well as about life in general. Ellison et al. (1981) reported that the average amount of time spent per daily devotional period was significantly related to existential well-being (r = .32).

In addition to frequency of prayer, satisfaction with prayer may also be associated with purpose and life satisfaction. A measure of religious well-being (composed of items referring to a sense of divine acceptance as well as a sense of fulfillment in prayer) has been found to correlate .32 (Paloutzian et al., 1982) and .62 (Ellison et al., 1978) with existential well-being. Prayer which is not perceived to be fulfilling may have no association with life purpose or perhaps even be inversely related.

It is predicted, therefore, that personal prayer (both the frequency and satisfaction) will be associated with increased life purpose (relationships F and G).

In summary, then, moving from the top to the bottom of Table 1, it is predicted that belief content (particularly

conservative content), belief rigidity, belief saliency, religious group involvement and the frequency of and satisfaction with personal prayer are all associated with a sense of achieved purpose in life. The latter, in turn, is associated with less loneliness.

Coping Skills

As noted previously, responses to loneliness vary widely. Only recently, however, has attention been directed towards determining which responses are most successful at overcoming loneliness (Cutrona, 1982; Carroll, 1983). In an attempt to answer this question, Cutrona (1982) questioned students who had been lonely and who were either still lonely or who were no longer lonely. Somewhat surprisingly, no differences were found between the two groups in activities such as going to parties, talking to strangers in class, trying to improve one's physical appearance or trying harder to be friendly (Cutrona, 1982). Carroll (1983) has described such strategies as "active". Instead, the two groups differed on their "passive" coping strategies such as trying to lower their desire to have friends and focusing on non-social activities such as work. Such coping strategies were more typical of those who remained lonely and, thus, may be less adaptive.

In contrast to nonreligious individuals, religious individuals are likely to use more religiously oriented coping skills such as reading the Bible, listening to religious music or talking

to a church leader. It is unknown whether religious individuals use religiously oriented responses rather than other responses shared by the nonreligious or whether religiously oriented responses are additional options. It is also unclear how religious coping responses differ from nonreligious coping responses. For example, reading the Bible may not differ essentially from reading a novel. One coping response, on the other hand, which may be viewed as uniquely religious is personal prayer. The following is an exploration of how prayer might be employed as a coping skill.

Personal Prayer. It was noted previously that for religious individuals prayer has been perceived to be a particularly effective coping skill. Religious individuals, thus, have access to coping devices to which the nonreligious would not ordinarily have access (Paloutzian et al., 1982; Lindenthal, Myers, Pepper and Stern, 1970). Such increased availability may help in reducing loneliness. It is important to note, however, that the efficacy of such coping devices may lie in more than in an increased number of options. Rather, for the religious individual, prayer may be a particularly efficacious coping strategy. Prayer may give special "experiential meanings" (Allport et al., 1967; Stark, 1965; Currie, Klug and McCombs, 1982) that enable the religious individual to cope with life and with loneliness in particular. Correlations of a sense of acceptance by God and fulfillment in prayer, that is, religious well-being, with

loneliness have ranged from -.15 to -.48 (Ellison et al., 1978; Paloutzian et al., 1982) A felt relationship with God may not only give meaning but also a sense of "togetherness" and love (Gibbons et al., 1972; Steere, 1981). While such feelings may help cope with feelings of human loneliness, they may be especially effective if the loneliness is one that includes an estrangement from meaning and from God (Sobosan, 1978; Buhler, 1969). It is likely that individuals who, in general, pray frequently and find this meaningful will tend to pray when lonely. It is predicted, then, that the frequency of prayer and the satisfaction felt in praying will be associated with the use of prayer as a response to loneliness (relationships H and I).

Belief saliency. Despite the possible efficacy of prayer, not all religious individuals "feel close" to God when they pray. Most individuals, however, who hold their beliefs saliently have been found to experience more religious feelings than others (Hood, 1970; Allport et al., 1967; King et al., 1972; Ellison et al., 1978).

It is predicted that the effectiveness of prayer as a coping response will be correlated with the saliency of one's religious beliefs. Those individuals having more slaient beliefs will perceive prayer to be more effective (relationship J). Finally, it is predicted that the use of prayer and the perceived effectiveness of prayer as a coping device will be inversely related to loneliness (relationships K and L). It is important to note that the direction of the

relationship may not be unidirectional. Prayer may decrease loneliness but, as well, being lonely may decrease the use of prayer.

Atributions of Loneliness

Various researchers have suggested that lonely people are motivated to explain the causes of their loneliness; doing so may not only help to make sense out of a distressing situation but may also help in alleviating it (Peplau, Russell and Heim, 1980; Peplau and Caldwell, 1978; Michela, Peplau and Weeks, 1979; Cutrona, 1982). Causes have been typically placed along three dimensions; that is, locus or causality (internal, personal versus external, situational), stability (stable versus unstable over time) and controllability (controllable versus uncontrollable) (Weiner, Nirenberg and Goldstein, 1976; Perlman and Peplua, 1979). For example, if an individual feels that he or she is lonely because of bad luck but also feels that this will soon change although it cannot be helped right now, then that individual is making an external, unstable and uncontrollable attribution of cause. To these three may be added a supernatural dimension. Causes may vary in the extent to which they appeal to supernatural (whether they be divine or demonic) or natural events (Ritzema, 1979; Wuthnow, 1976; Glock and Piazza, 1978).

Causal dimensions have been found to be associated with particular affect, expectancies and behavior (Rubenstein et al., 1979; Kelley and Michela, 1980). For example, Michela et al. (1979) reported that depressed affect was more often associated

with internal causes than with external causes. Those who attribute loneliness to external factors more typically feel angry and hostile toward others (Weiner, Russell and Lerman, 1978). Those who perceive causes as stable tend to give up on tasks (Weiner, 1974) and be depressed (Peplau et al., 1979). Unstable causes, on the other hand, have been associated with continued effort and expectations of change (Peplau et al., 1979). While there is less research on controllability, it seems likely that causes which are perceived to be stable as well as uncontrollable would be associated with decreased efforts to reduce loneliness. The effects of attributing supernatural rather than natural causes seem to be largely unexplored.

The determinants of causal attributions appear to be many; they range from the age of the attributor (Peplau et al., 1978), the length of time the individual has been lonely and the degree of choice in initiating interpersonal separation (Peplau et al., 1979) to social comparison processes (Perlman et al., 1979). In addition, attributions may be determined by general ways of perceiving the world. Rotter (1966), for example, has suggested that some individuals tend to view outcomes as being generally the result of internal factors while others view outcomes as being generally the result of external factors. As mentioned earlier, religious individuals are likely to have particular meaning systems which allow them to make sense of life by seeing it religiously. Religious individuals are more likely to spontaneously refer to God in

interpreting ambiguous stimuli (Ludwig and Blank, 1969) and to employ God as a causal agent in explaining life circumstances (Ritzema, 1979). Attributions about the causes of loneliness, therefore, may be influenced by aspects of religious beliefs.

Belief content. Individuals who hold religious beliefs are more likely to ascribe supernatural causes than those who do not have religious beliefs. Ritzema (1979) reported that assent to creeds of the church was correlated .43 with attributions to divine cause. Wuthnow (1976), as well as Glock et al. (1978), similarly, reported that conservative believers tended to use a theistic mode of life interpretation. It is predicted that religious beliefs (particularly conservative religious beliefs) will be associated with attributions to supernatural causes (relationship M).

Belief saliency. Individuals whose beliefs are more salient to them are more likely to ascribe supernatural causes than those who do not have salient beliefs (relationship N). Ritzema (1979) reported that the saliency of beliefs was correlated .39 with attribution to divine causes. It seems likely that those who think more about their beliefs would be more apt to structure the world in terms of their beliefs.

Supernatural causation. Individuals with salient and, in particular, conservative religious beliefs are more likely to make attributions to divine causation. It is important to note, nonetheless, that the believer may see causes on

more than one level; that is, loneliness may be seen as being caused (humanly speaking) by either external or internal natural events but still be "caused ultimately" by God. The perception of divine causation may influence how natural causes are conceptualized. There may be three implications of attributions to an over-riding divine cause. First, natural causes may be seen as unstable. Loneliness may be viewed as temporary and as a lesson; the religious individual may believe that God will remove the cause of the loneliness once its purpose has been accomplished. Second, natural causes may be seen as controllable or, at least, potentially controllable; whether God acts or not, He may be seen as in control. If a benevolent deity is assumed to be in control, the religious individual may gain access to that control through God and his or her relationship with the latter. Third, the individual who attributes his or her loneliness to divine cause will probably be motivated to use prayer as a coping device to decrease loneliness (relationship O). If God is perceived to be the cause, prayer alone may be perceived to be the only effective solution.

In summary, attributions that the causes of loneliness are unstable and controllable are predicted to be associated with less loneliness (relationships P and Q). Furthermore, attributions to supernatural causes are predicted to be associated with attributions to unstable and controllable causes (relationships R and S) and the use of prayer as a coping device.

Networks

Social networks have been found to be consistently related to the life satisfaction of individuals (Caplan, 1974; Weiss, 1974). Because networks may be defined as groups of personally significant individuals, networks are likely to influence loneliness (Hirsch, 1979). Weiss (1974) has speculated that social relationships provide six basic "provisions" which meet different needs of individuals. These provisions are usually found in different relationships rather than in one (Cutrona, 1982). For example, Cutrona (1982) has suggested that "social integration" is provided by relationships with friends in which individuals share activities and interests. "Reassurance of worth", on the other hand, is more likely to be provided by relationships with co-workers who attest to an individual's competence. "Attachment", a sense of security and comfort, is more likely to be derived from close relationships with romantic partners or spouses. "Opportunities for nurturance" are more likely to be found in relationships in which adults care for children. "A sense of reliable alliance" is usually provided by relationships with relatives. Finally, "guidance" may be attained in relationships with people in authority such as teachers or employers. While little empirical work has been carried out on Weiss' typology, Cutrona (1982) reported that the provisions accounted for 66% of the variance in loneliness scores of college students. Networks stocked with social provisions, then, may be associated with

less loneliness.

The density of networks has also been associated with loneliness. Density refers to the degree to which the different members are acquainted with each other (Hirsch, 1980; Wellman, Craven, Whitaker, Stevens, Shorter, DuFort and Bakker, 1973). Typically, about one half to two thirds of the people in an individual's network have relationships with each other (Pattison, DeFrancisco, Wook, Frazier and Crowder, 1975). Increased network density has been associated with greater feelings of intimacy and emotional involvement as well as with a greater number of close friends (Wellman et al., 1973). It is likely that density is also related to a sense of shared activities and interests; if many network members know each other, it is likely that they are from a common source and share much in common.

Religious individuals certainly have opportunities for network construction; an array of social activities of both specifically religious (worship services, prayer meetings) and secular varieties (potlucks, volley ball games) is presented for the choosing. While people attend church for many reasons, one reason appears to be the opportunity to participate socially with others (Monaghan, 1977). More of the formal social participation of individuals of all ages has been found to take place in the church than in all other voluntary community organizations together when measured by either membership or attendance (Moberg, 1965). Cutler (1976), furthermore, reported that among older individuals

that membership in church-affiliated groups alone emerged as a significant predictor of life satisfaction in contrast to membership in other groups. There are many reasons why religiously oriented groups might be uniquely satisfying. For example, networks composed of religious members may be marked by high density and generous supplies of social provisions. In particular, three aspects of religiosity may influence the nature of one's networks.

Religious group involvement. Most religious groups meet at least once a week and often more frequently. There are probably few secular groups which assemble so often. Those who attend frequently are hypothesized to develop networks largely composed of fellow congregants or religious group members in contrast to those who participate less (relationship T). Such networks are likely to be dense because other members will also develop relationships within the religious group (relationship U). A sense of social integration could potentially be high among those whose friends share religious interests in common.

Those who participate in religious activities and develop networks composed of religious individuals are likely to receive multiple informal instructions about how life should be lived. Kelley (1972) has suggested that the meaning which religion provides gains its validity through the shared group experiences. Those having networks in which the majority of members are religious, then, are likely to have a greater sense of guidance than those whose networks

are not made up of religious people. Social provisions, therefore, are predicted to be high among those with largely religious networks (relationship V).

Belief content. Networks composed of religious individuals may be the result of leisure time being taken up by involvement in religious activities (Kelley, 1972). In addition, however, belief content may also influence the nature of one's networks. In particular, conservative belief content is hypothesized to be associated with networks composed of religious members (relationship W).

Although the literature is not completely consistent (See Wilson, 1960 and Gilmore, 1969), the degree of religious conservatism has often been found to be related to prejudice (Swindell et al., 1970; Wilson and Kawamura, 1967; Whitman, 1962; Gregory, 1957; Sales, 1972; Feagin, 1964). Levinson (1954), for example, reported that religious conventionalsim and ethnocentricsm were correlated .50. Similarly, Martin and Westie (1959) found that religious individuals who were prejudiced were also more likely to hold conservative outlooks although they did not differ from the nonprejudiced religious in frequency of attendance, prayer or Bible study. Ethnocentric attitudes may also be extended to other church groups. Kelley (1972) reported that those who held conservative beliefs were less likely than those of less conservative beliefs to accept the validity of other churches' teaching, ordination and sacraments. Conservative believers have been found to be more concerned with marrying within

their own denomination (Salisbury, 1962; Lenski, 1953), less willing to send their children to interfaith schools (Salisbury, 1962) and to be more willing to have fellow congregants as best friends. Richardson, Stewart and Simmonds (1978), similarly, reported that almost two thirds of the members of a religious sect felt more distant from non-sect friends than they did before joining. Conservative beliefs, then, may be associated with close-knit networks composed of individuals with similar beliefs.

Although religious groups composed of conservative believers may tend to shun nonbelievers, they may be particularly supportive of those within the in-group. Richardson et al. (1978), for example, reported that one third of the members of a sect felt that they had been initially attracted by the warmth and closeness shown by the people. Ellison and Cole (1978) found that, in contrast to a nonreligious group, born agains tended to de-emphasize individualistic values and instead emphasized that personal needs and strengths should be shared by the entire Christian community. Religiously conservative believers may, thus, function as "good neighbours". As neighbours have been rated as particularly effective in combatting loneliness (Lopata, 1978), neighbourly networks may also serve this purpose. Indeed, religious networks may be more than neighbourly and may be familial in nature. Richardson et al. (1978) indicated that a familial atmosphere was fostered within a sect by members addressing one another as brother and sister.

The majority of the members felt that most of the persons to whom they were close were fellow members. Such networks may give a member a sense of reliable alliance.

Belief rigidity. Tendencies to form highly religious networks may also be associated with the rigidity of beliefs (relationship X). Rokeach (1960) reported that highly dogmatic individuals were significantly more ethnocentric than individuals scoring low in dogmatism. Those who are dogmatic may tend to accentuate differences between beliefs as well as people. To some degree, then, religious individuals who hold their beliefs dogmatically may tend to divide the world into two camps, the acceptable and the unacceptable. If so, those who share beliefs will likely be favored as members of networks.

In summary, it is predicted that networks which are dense and have more social provisions will be associated with less loneliness (relationship Y and Z). Greater religious involvement, conservative beliefs and rigid beliefs are predicted to be associated with networks composed of religious people. Largely religious networks are predicted to be associated with greater density and more social provisions (in particular, social integration, guidance and a sense of reliable alliance).

Summary of Hypotheses

As seen in Table 1, five aspects of religiosity, (belief content, belief rigidity, belief saliency, religious group involvement and personal prayer) have been hypothesized to

be associated with four variables (purpose in life, coping skills, attributions and networks) which have been found to be associated with loneliness. Three points need to be made about these relationships. First, although past research has examined some of the relationships discussed in this study, the latter differed in a number of ways. For example, past research on loneliness and religiosity does not appear to have conceptualized religiosity as a multidimentional construct. Moreover, past research has not taken a comprehensive approach to this topic; instead, religiosity has often simply been correlated with loneliness. In contrast, this study ought to determine the mediating variables between loneliness and religiosity. Furthermore, some of the relationships discussed here had not been explored previously. In particular, the effects of supernatural attributions and ethnocentricism on loneliness were unknown.

Second, although this study has concerned itself with the relationships of religious beliefs and contacts to loneliness, it is important to note that other types of beliefs and contact (for example, political beliefs and contacts) may serve the same functions. No special role of religious variables is being claimed here over other particular types of beliefs or contacts and, indeed, this study provided no means of testing such a superiority.

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Third, this study has been largely descriptive rather than causal in nature. While some relationships are more likely than others, it is more likely that all of the variables influence each other reciprocally in a continuous manner. This study suggests ways in which religiosity might interact with loneliness but recognizes the complexity of such a relationship. In many cases, inter-relationships have not been explored. For example, aspects of religiosity are undoubtedly related and have been shown to be so (King et al., 1972; Allport et al., 1967; Glock, 1962). The focus here, however, has been more on the relationships between religiosity and loneliness rather than on religiosity itself. The following is a list of hypotheses.

(1) Less loneliness is associated with
    (a) greater purpose in life (relationship A)
    (b) use of prayer as a coping device (relationship K)
    (c) perceived effectiveness of prayer as a coping device (relationship L)
    (d) controllable attributions (relationship Q)
    (e) unstable attributions (relationship P)
    (f) dense networks (relationship Y)
    (g) well-supplied networks (relationship Z).

(2) More purpose in life is associated with
    (a) conservative belief content (relationship B)
    (b) rigid beliefs (relationship C)
    (c) salient beliefs (relationship D)

(d) greater involvement in organized religious activities (relationship E)

(e) more time spent in personal prayer (relationship F)

(f) greater satisfaction with personal prayer (relationship G).

(3) Greater use of prayer as a coping response is associated with

(a) more time spent in personal prayer (relationship H)

(b) satisfaction with personal prayer (relationship I).

(4) Perceived effectiveness of prayer as a coping device is associated with

(a) greater saliency of religious beliefs (relationship J).

(5) Unstable and controllable attributions are associated with

(a) attributions to supernatural causes (relationship R) which are associated with

(i) conservative belief content (relationship M)

(ii) salient beliefs (relationship N)

(iii) prayer as a coping response (relationship O).

(6) Dense and well-supplied networks are associated with

(a) largely religious networks (relationship U) which are associated with

(i) more involvement in religious activities (relationship T)

(ii) conservative belief content (relationship W).

(iii) rigid beliefs (relationship X).

Method

Subjects

Group categories. Introductory psychology students who had lived in Winnipeg or within 50 miles of Winnipeg for at least one year were screened using two measures of belief content; that is; the questions asked by Paloutzian et al. (1982) regarding the nature of one's personal religious commitment and the Literal, Anti-Literal and Mythological (LAM) scales of religious meaning commitment (Appendix A). Four hundred and sixty subjects were screened. Subjects participated in the study as a way of fulfilling course requirements to take part in experiments.

A final sample of 232 was comprised of 76 nonbelievers and 156 believers. The latter was further subdivided into 76 conservative believers and 80 non-conservative believers. Nonbelievers were defined as those who said that they were not religious and who also scored higher on the Anti-literal scale than on the Literal and Mythological scales together ($L + M < A$). Believers were defined as those who said they were religious and who also scored higher on the Literal and Mythological scales together than on the Anti-literal scale ($L + M > A$). Conservative believers were defined as those who said that they had received Jesus Christ as their personal Saviour and Lord and who also scored higher on the Literal scale than on the Mythological scale ($L > M$). Nonconservative believers were defined as those who said they respected and tried to follow the moral and ethical

teachings of Christ and who also scored higher on the Mythological scale than on the Literal scale.

An equal number of males and females were used in the study with males and females not differing significantly on any of the LAM scales.

The study was restricted to the Christian faith as an exemplar of religion. No special status for Christianity over other faiths was either claimed or investigated in this study.

Subject characteristics. Subjects ranged in age from 16 to 25 with an average of 19.23 years. The majority of the sample were single (97.4%) with the remainder either married (1.7%) or living with someone of the opposite sex (.9%).

Subjects had lived in their present residence from one to 22 years with an average of 9.76 years. Most of the sample (71.7%) lived with parents although 20.3% lived in their own residence. The remainder were either living in university residence (5.2%), with relatives (2.6%) or did not specify their living arrangements (.4%). Of the sample, 92.7% lived in Winnipeg while 7.3% lived within 50 miles of Winnipeg.

The sample was drawn from the 2989 students taking the introductory course. This figure represents 16.2% of undergraduate students. During the past year, the subject pool was composed of students from 17 faculties, In order of representation, Arts was most heavily represented (46.70%)

followed by Science (21.38%), Administrative Studies (9.97%), Education (5.92%), Human Ecology (3.68%), Physical Education/ Recreational Studies (3.01%) and Nursing (2.34%). The remaining faculties (Agriculture, Continuing Education, Dental Hygiene, Engineering, Environmental Studies, Fine Arts, Interior Design, Music, Pharmacy and Social Work) contributed less than two per cent each. There is no data available on the actual composition of the sample used in the study by faculty.

Group membership. No religious preference was indicated by 69.7%, 5.1% and 2.6% of the nonreligious, nonconservative and conservative groups respectively. Denomination was unspecified by .9% while 2.2% used "Protestant" to describe their religious preference and 2.2% used "Christian". Fourteen denominations were represented by the sample. Table 2 shows the percentage who indicated a preference for each denomination both overall and by group.

Insert Table 2 about here.

As seen in Table 2, the largest percentage of the sample (25.5%) and of the nonreligious group (69.7%) chose no religious preference. Of the nonconservative group, the Roman Catholic and United Churches were most popular (39.2% and 19.0% respectively). Of the conservative group, the Mennonite and Baptist Churches were most popular (40.8% and 11.8% respectively). Table 3 presents the percentage of the

Table 2

The Percentage of Subjects (Both Overall and by Group) Selecting Various Religious Preferences

Preference	N	Overall (N = 232)	Group		
			Nonrel. (N = 76)	Noncon. (N = 80)	Cons. (N = 76)
None	58	25.5	69.7	5.1	2.6
Unspecified	4	1.7	3.9	0.0	1.3
Protestant	3	1.3	0.0	1.3	2.6
Christian	5	2.2	1.3	0.0	5.3
Lutheran	13	5.6	2.6	8.9	5.3
Mennonite	34	14.7	0.0	3.8	40.8
Roman Catholic	39	16.9	5.3	39.2	5.3
Anglican	12	5.2	3.9	11.4	0.0
Ukranian Orthodox	2	0.9	0.0	1.3	1.3
Pentecostal	6	2.6	0.0	0.0	7.9
Ukrainian Catholic	8	3.5	2.6	7.6	0.0
Baptist	12	5.2	1.3	2.5	11.8
United	28	12.1	10.5	19.0	6.6
Alliance	3	1.3	0.0	0.0	3.9
Presbyterian	2	0.9	0.0	0.0	2.6
Evangelical Free	1	0.4	0.0	0.0	1.3
Christian Reformed	1	0.4	0.0	0.0	1.3
Church of Christ	1	0.4	1.3	0.0	0.0

sample (both overall and by group) who were involved in non-church groups.

Insert Table 3 about here.

As seen in Table 3, only 4.1% of the sample belonged to a non-church religious group with the majority of these coming from the conservative group. Twenty-two per cent of the sample belonged to a nonreligious university group with 3.1% belonging to more than one such group. Only 5.5% of the sample belonged to a political group. With regard to nonreligious community groups, 31.5% belonged to at least one group with 4.6% belonging to two groups. Although there appeared to be a tendency for the nonreligious and nonconservative groups to participate more often than the conservative group in nonreligious groups, these differences were not significant.

Measures

Demographics. Respondents were asked to fill out an 11-item questionnaire in order to determine their background characteristics (See Appendix A for a guide to all measures).

Belief content. Belief content was measured by two scales. One scale was adapted from the questions used by Paloutzian et al. (1982). Subjects were asked to select one statement that best reflected their form of religious commitment:

(1) I do not consider myself to be religious.

Table 3

The Percentage of Subjects (Both Overall and by Group) Involved in Nonchurch Related Groups

Type of Group	N	Overall (N = 232)	Group: Nonrel. (N = 76)	Group: Noncon. (N = 80)	Group: Cons. (N = 76)
Nonchurch religious					
none	211	95.9	100.0	98.7	88.2
one or more	9	4.1	0.0	1.3	11.8
Nonreligious university					
none	167	74.9	73.7	67.5	84.3
one or more	56	25.1	26.3	32.5	15.7
Political					
none	208	94.5	93.3	92.2	98.5
one or more	12	5.5	6.7	7.8	1.5
Nonreligious community					
none	140	63.9	61.3	63.2	67.6
one or more	79	36.1	38.7	36.8	32.4

(2) I consider myself to be religious and I have received Jesus Christ as my personal Saviour and Lord.

(3) I consider myself to be religious and I respect and attempt to follow the moral and ethical teachings of Christ.

(4) I consider myself to be religious but I do not consider myself to be a Christian. I am a member of some other religious faith.

Those who selected the last statement were excluded from the study.

Those who affirm the second statement, in contrast to those who affirm the third statement, have been found to attend church more frequently, to have more meaningful devotions, to express beliefs about God's love (Ellison et al., 1981), to be more intrinsic in their religiosity (Ellison et al., 1978) and, in general, to be more religiously conservative.

The second measure was the 17-item Literal, Anti-Literal and Mythological (LAM) scales of religious meaning commitment (Hunt, 1972). Hunt (1972) has suggested that the L scale measures a literal interpretation of religion in which religious statements are accepted at face value with little question. Such an approach may be seen as conservative. The A scale again purports to measure a literal unexamined interpretation of religion but is one in which religious statements are rejected out of hand (Hunt, 1972). Finally,

the M scale measures an approach to religion in which religious statements are accepted but are re-interpreted in terms in deeper symbolic meanings. Such an approach is less conservative.

To measure these three orientations, subjects were asked to pick which statement best reflected his or her personal opinion. An example item is:

I believe in the guidance of the Holy Spirit.

(a) Agree, since God has said that He will be with us always. Prayer thus is an effective way of listening to God's guidance.

(b) Disagree, since the supernatural, if it exists at all, is in no way directly involved in telling people what to do.

(c) Agree, because this is one way of describing the involvement of God with his creation and people.

These statements are respectively literal, anti-literal and mythological.

Initially the LAM scales were composed of 25 items. Seventeen items were selected for the final scales on the basis of item-scale correlations. While no test-retest data appears to be available for the LAM scales, the internal consistency of the three 25-item scales has been found to be .87 for the L scale, .92 for the A scale and .77 for the M scale (Hunt, 1970). These values were calculated using Gulliksen's variance-covariance procedure (Hunt, 1970). Item-scale correlations range from .28 to .71 with median

figures of .77 and .79 reported for the A scale, and from .19 to .67 with median figures of .58 and .67 for the M scale.

The concurrent validity of the LAM scales has been suggested by correlations with the Religious World Views Scale (RWV) (McLean, 1952). The latter measures a literal approach to religious beliefs as shown by a correlation of .91 with the Scriptural Literalism Scale (Jennings, 1972). As expected the RWV scale correlated .73 with the L scale and -.74 with the A scale (Hunt, 1972). The M scale was not correlated with the RWV scale suggesting that those who espouse a symbolic approach to religion may be typified as neither accepting nor rejecting of religion but as religious in a different way.

Males and females have not been found to differ significantly on any of the LAM scales (Hunt, 1972).

Items have been altered to remove sexist wording. No data are available on the reworded items.

Belief rigidity. The rigidity of beliefs was measured by one item adapted from Currie (1974) and nine items from the Rokeach Dogmatism scale (Rokeach, 1960). Items were in a four-point "strongly disagree" to "strongly agree" format. The item adapted from Currie (1974) refers to doubts about beliefs; that is, "I don't really have doubts about what I believe". Belief rigidity was measured in both ways as it seemed likely that an individual could be quite sure about his or her beliefs without exhibiting the personality of

dogmatism as posited by Rokeach (1960).

Nine items from the 40-item Rokeach scale were used. This scale has a test-retest reliability ranging from .68 to .93 depending on the sample and the time period (from one to six months) (Rokeach, 1960). Since a subset of items was used here, reliability data on these items is unavailable.

The validity of this measure has been indicated by its ability to discriminate between individuals nominated by peers to be high or low in dogmatism and its association with a scale measuring both left- and right-leaning political attitudes; regardless of orientation, strength of opinion was related to dogmatism (Rokeach, 1960). Furthermore, certain groups, as predicted, were higher than others in dogmatism. In particular, a communist group scored higher than other political groups. This group was most intolerant toward others who disagreed with their views. Less educated individuals (laborers) have been found to be more dogmatic than more educated individuals (college students).

A sample item is "There are two kinds of people in the world: Those who are for the truth and those who are against the truth". Nine items were selected to represent the various components of dogmatism suggested by Rokeach (1960). The sample item, for example, is a measure of intolerance toward disbelievers.

Belief saliency. The importance of beliefs was measured by the seven-item Cognitive Salience Scale (King et al., 1972). Items were in four-point "strongly disagree" to "strongly

agree" format. A sample item is "My religious beliefs are what really lie behind my whole approach to life."

The homogeneity of the Cognitive Salience Scale is suggested by a coefficient alpha of .81 (King et al., 1972), mean inter-item correlation of .56 and Spearman-Brown correlation of .74 (Jennings, 1972).

The validity of the Cognitive Salience Scale is indicated by its correlation with a scale measuring religious growth and striving (r = .78), a scale measuring the salience of religious behavior (r = .50) and purpose in life (r = .35) (King et al., 1972).

Religious group involvement. Participation in organized church group activities was measured by the three-item Church Attendance Scale and the six-item Organizational Activity Scale (King et al., 1972). Sample items are respectively "During the last year, how many Sundays per month on the average have you gone to a worship service? (None, once, twice, three times or more)" and "How would you rate your activity in this congregation? (Very active, active, occasionally active, inactive)".

The internal consistency of these scales is respectively .82 and .83 (King et al., 1972). The validity of the Church Attendance Scale has been suggested by its correlation with the Organizational Activity Scale (r = .64), church financial support (r = .59), an orientation towards religious growth (r = .40) and the salience of religious beliefs and behaviors (r = .39) (King et al., 1972). The validity of the

Organizational Activity Scale has been suggested by its correlation with church financial support (r = .51), orientation to religious growth (r = .43) and the salience of religious behavior (r = .48) (King et al., 1972).

In addition to these scales, two other questions were asked about church involvement. One, subjects were asked to indicate when they started attending their present church. Two, subjects were asked to indicate how many churches they have attended in the past year.

Some religious individuals may not consider the church which they attend to be their primary religious group. In particular, students may participate more fully in other groups. Participation in other groups was assessed by adaptations of the Church Attendance Scale and Organizational Activity Scale. Those individuals who state that they participate in religious groups unrelated to the church were asked to identify these groups, rate their importance relative to the church and then to respond to the nine items for the group felt to be most important. A sample attendance item is "During the past year, how many times per month on the average have you gone to a meeting of this group? (none, once, twice, three times or more)". A sample activity item is "How would you rate your activity in this group? (very active, active, occasionally active, inactive)".

Personal prayer. Frequency of and satisfaction with prayer was measured by the five-item Devotionalism Scale (King et al., 1972) with the addition of one item. Items

are in a four-point format (either "never" to "often" or "strongly disagree" to "strongly agree"). Sample items are "How often do you pray privately in places other than at church?" and "Private prayer is one of the most important and satisfying aspects of my religious experience."

Since satisfaction and frequency were examined separately, a satisfaction item was added so that there were three items for each facet of prayer. There is no data available on the reliability and validity of the subscales as separate scales. The five-item scale has been previously noted to be homogeneous (coefficient alpha = .85) as well as to possess some validity as suggested by its correlations with an orientation toward religious growth (r = .71), financial donations (r = .31) and the salience of religious beliefs (r = .71) (King et al., 1972)

Purpose in life. Purpose in life was assessed by the Purpose-in-Life (PIL) test, a scale designed to measure the degree to which an individual experiences a sense of meaning and purpose (Crumbaugh, 1968). The PIL test consists of 20 items which are rated from one to seven.

A sample item is:

I am usually

1	2	3	4	5	6	7
completely bored			neutral			exuberant, enthusiastic

Crumbaugh (1968) reported that a split-half correlation of the PIL test was .85 which was further corrected to .92

by the Spearman-Brown formula.

Evidence of construct validity has been provided in that nonpatient groups score higher and are less variable on the PIL test than patient groups (Crumbaugh et al., 1964). Moreover, PIL scores were correlated .48 with ratings of proficiency in a training program (Crumbaugh et al., 1970). Concurrent validity has been shown in that the PIL test has been correlated with (a) a scale developed by Frankl (1960) to measure an individual's sense of existential meaning (r = .68) (Crumbaugh et al., 1964) (b) ratings of patients by their therapists on purposiveness (Crumbaugh et al., 1964; Crumbaugh, 1968) (c) a measure of depression on the MMPI and with (d) a measure of anomie (r = .32; r = .48) (Crumbaugh, 1968). Finally, discriminant validity has also been evidenced as the PIL test has not been found to be correlated with values in general as measured by the Allport-Vernon-Lindzey Scale of Values or with the majority of the MMPI scales (Crumbaugh et al., 1964). Consistent relationships between the PIL test and sex of subject, income and educational level have not been reported (Crumbaugh, 1968).

An examination of the items of the PIL test suggest that the scale measures two factors; that is, a sense of achieved meaning and an affective (depressed to enthusiastic) dimension. In fact, Yalom (1980) has suggested that the scale measures several different concepts such as life meaning, life satisfaction, views on freedom, fear of death, contemplation of suicide and the worthwhileness of life.

As relationships between the PIL test and other variables may be due more to one dimension than the other, the measure was factor analyzed to determine whether it is unidimensional.

Coping responses. The frequency of coping responses was assessed by a 35-item measure adapted from Russell, Cutrona, Rose and Yurko (1982). Subjects were asked to rate on a four-point "never" to "often" dimension how often they had used various responses to cope with loneliness. Russell et al.(1982) developed a 24-item measure by initially asking lonely college students how they attempted to deal with their loneliness and, then, by constructing items from their responses. These items were administered to 483 university students ranging from first year to graduate students. A factor analysis of the responses to the items indicated five reliable factors; that is eigen values greater than 1.0. "Self-enhancing behaviours" (behaviours to raise self-esteem such as doing something one excells at or thinking about one's positive characteristics) was assessed by five items with loadings ranging from .64 to .81. "Behavioural problem solving" (behaviours to meet new people or to make oneself more outgoing) was assessed by six items with loadings ranging from .37 to .76. "Redefining the problem" (actions to minimize loneliness either by telling oneself that loneliness will not last forever or that one does have some good relationships) was assessed by six items with loadings ranging from .37 to .76. "Distraction" (physical and mental activities to take one's mind off feeling lonely) was

assessed by four items with loadings ranging from .46 to .81. "Cognitive problem solving" (thinking of ways to overcome loneliness by figuring out either the cause or solution) was assessed by three items with loadings ranging from .63 to .78. The validity of the coping scale was suggested by significant and inverse associations between cognitive problem solving and measures of emotional and social loneliness and between behavioural problem solving and a measure of emotional loneliness (Russell et al., 1982).

To these 24 items were added eight religiously oriented items such as praying, reading the Bible, meditating on God's love, joining a religious group and talking to religious leaders. To increase parallelism between religious items and nonreligious items, three more items were added (listening to music, getting alone to think and reading a novel).

The effectiveness of each of the coping responses used by the subjects was assessed by a three-point rating scale ranging from "unhelpful" to "very helpful". If a subject had not used a particular coping response, no rating was given. No reliability or validity data is available on this measure.

Attributions. Attributions about the causes of loneliness were assessed by 18 items devised for this study in a four-point "strongly disagree" to "strongly agree" format. Locus, stability, controllability, "natural-ness" and valence were assessed by at least one item keyed towards

one end of the dimension and one item keyed towards the other end. The supernatural dimension has more items than the others to allow for both diverse supernatural causes (divine, demonic and personal sin) and cures (regardless of the original causes). A sample item is "When a person is lonely, there is really not much that he or she can do about it".

Networks. Networks were assessed in a variety of ways. Social provisions were measured by the Social Provisions Scale (Cutrona, 1982). While little empirical data is available on this test, it has been found to be correlated .66 with loneliness as measured by the UCLA Loneliness Scale. In addition, postpartum depression in first-time mothers was reported to be negatively associated with the provisions of reliable alliance and reassurance of worth (Cutrona, 1981). Furthermore, Russell et al. (1982) found a lack of attachment and opportunity for nurturance to be positively associated with a measure of emotional loneliness and lack of reassurance of worth to be positively associated with a measure of social loneliness.

The Social Provisions Scale has recently been lengthened to increase reliability and to include an equal number of items keyed in the negative direction (Russell, 1983). The 24-item scale was adapted from a nine-point to a four-point "strongly disagree" to "strongly agree" format. Four items measure each of the six social provisions. A sample item assessing reliable alliance is "There are people I can depend

on to help me if I really need it."

A second measure of networks assessed the density of individual's networks while determining at the same time the composition of the network. Respondents were asked to list the initials of friends and family with whom they felt comfortable discussing personal matters, to state whether they would say this person was religious, to indicate what relationship he or she had with this person and to put down the initials of those on the list that this person knew.

A third measure pertaining to networks asked respondents to indicate to which groups (school, community and political) they belonged, how frequently they attended meetings and how satisfied they felt they were in these groups.

Loneliness. Loneliness was assessed by the UCLA Loneliness scale developed by Russell, Peplau and Ferguson (1978) and revised by Russell, Peplau and Cutrona (1980). The UCLA scale is a 20-item scale with a four-point "never" to "often" format. To control for an acquiescent response set, half of the items are keyed toward being lonely and half are keyed toward being satisfied with social relationships. A sample item is "I feel in tune with the people around me."

The internal consistency of the scale has been suggested by a coefficient alpha of .94 (Russell et al., 1980). As well, a test-retest correlation over a two month interval was .73 (Russell et al., 1979)

Concurrent validity has been suggested by correlations

with both related emotional states such as depression (r = .62) and anxiety (r = .32) and with social activities such as the amount of time spent alone each day (r = .41) and the number of close friends (r = -.44) (Russell, 1982).

Discriminant validity has been suggested by the lack of correlation of the UCLA scale with conceptually unrelated emotions such as feeling surprised, embarrassed or creative (Russell et al., 1980). Moreover, UCLA Loneliness Scale scores are more closely correlated with a self-labeling loneliness index than with depression or low self-esteem (Russell, 1982).

In addition to the UCLA scale, loneliness was assessed by two items. One was a global loneliness item in which individuals rated how lonely they felt at that time. The second item asked how long they had been feeling the way they felt at that time. In this way, the chronicity of the loneliness was measured.

Social desirability. Many of the questionnaires used in this study may be susceptible to social desirability; that is, the tendency to respond in culturally acceptable and approved ways (Crowne and Marlowe, 1960). To control for this possibility, social desirability was assessed by a subset of items from the Marlowe-Crowne Social Desirability Scale (M-C SDS) (Crowne et al., 1960). An example of an item from the M-C SDS is "I have never deliberately said something that hurt someone's feelings". The items were in a "true" or "false" format.

Using the Kuder-Richardson formula 20, the internal consistency coefficient for this scale has been found to be .88. Test-retest reliability has been found to be .89 over a month interval (Crowne et al., 1960).

Concurrent validity has been suggested by a correlation of .35 with the Edwards Social Desirability Scale as well as correlations with various MMPI scales. The M-C SDS correlated .40 with the K scale (a measure of test-taking defensiveness), .54 with the L scale (a lie scale or tendency to fake good) and -.36 with the F scale (a measure of the tendency to report many psychiatric symptoms).

Discriminant validity has been suggested by low correlations with the clinical scales on the MMPI such as those measuring the tendency to report bodily symptoms, unjustified fear and anxiety.

For reasons of brevity, twelve items were chosen at random from the M-C SDS with the restriction that six items be keyed positively and six items be keyed negatively. No reliability or validity data is available for this subset of items.

Procedure

In order to solicit subjects for this study, the latter was entitled "Values and Behavior" and announced in the following way:

> This is a study of how values and beliefs influence different people. It is a questionnaire study. It is open to (a) nonreligious people

(b) religious people of the Christian religion

(c) people who have lived in Winnipeg or within 50 miles of Winnipeg for at least one year.

It is not open to (a) religious people who would not call themselves Christians

(b) people who have not lived in Winnipeg or within 50 miles of Winnipeg for at least one year.

It takes three quarters to one and one half hours to complete.

Subjects were given the following instructions (adapted from Currie, 1974):

This is a study of how values and beliefs affect different people. Be sure to state what you really believe rather than what you think you should say or what you like to be true. Many of the questions measure personal belief; obviously there are no right or wrong answers.

Please answer the items carefully but do not spend too much time on any one item. Give an answer for every item. Also try to respond to each item independently when making your choice; do not be influenced by your previous answers. While there is some overlapping, each item is important for itself.

The questions vary somewhat in format so be aware of what the alternatives are for a particular item.

Subjects answered the questionnaires in the order shown in Appendix B.

Subjects were run in groups of approximately 30.

Results

Group differences (by religious group and by sex) will first be reviewed. Relationships between variables will then be discussed. Relationships between variables will be discussed in two ways. First, relationships will be explored with all groups combined. Second, relationships will be explored with each of the three groups considered separately.

In order to analyze the data, four sorts of analyses were performed; that is, multivariate analyses of covariance (MANCOVA), pearson correlations, stepwise regressions and factor analyses. MANCOVAs were used to test for group differences while controlling for the effects of social desirability (for example, whether the three groups had different levels of life purpose). The majority of these differences were unhypothesized. Pearson correlations were mainly used to test hypothesized but, as well, some nonhypothesized, relationships between two variables (for example, coping skills and loneliness). Stepwise regressions, on the other hand, were used to test hypothesized relationships between a criterion variable and a number of predictors with no hypothesized priority (for example, predicting religiousness of networks from conservative belief content, belief rigidity and religious group involvement). Finally, factor analyses were used as a test of scale homogeneity (that is, of the PIL test). It is again emphasized that, regardless of the type of statistical analysis performed, descriptive rather than causal

relationships were explored in this study.

Group Differences

Religious Group Differences

Between group differences in belief saliency, religious group involvement, frequency of and satisfaction with personal prayer, belief rigidity, purpose in life, use of coping skills, perceived effectiveness of coping skills, attributions, networks and loneliness were analyzed by MANCOVA. When more than one analysis of covariance is performed, MANCOVA has the advantage of controlling for increases in Type 1 error rate as well as taking possible correlations and differences in variance between the variables into account (Maxwell, 1977). Since eight MANCOVAs have been carried out, nonetheless, .01 was adopted as the alpha level rather than the more conventional .05 (J. Lind, personal communication, September 18, 1983). Probability levels below .10, however, have been reported for the interest of the reader. In all cases, a two (sex) by three (religious group) MANCOVA was performed with social desirability as the covariate. In this way, possible differences in social desirability which could spuriously create group differences in other variables were controlled. The choice of social desirability as a covariate was particularly apt as there was a tendency for the groups to differ on this measure ($p = .04$). An *a posteriori* contrast (described below) revealed that the nonreligious group scored significantly higher in social desirability than the

conservative group. By using social desirability as a covariate, therefore, this difference was kept constant. MANCOVA tables are found in Appendix C.

If the MANCOVA was significant, Tukey's Honestly Significant Difference (HSD) method was employed to determine which groups were significantly different. An alpha level of .05 was used.

Table 4 presents the means and probability levels of religious group differences on the aforementioned variables.

Insert Table 4 about here.

As seen in Table 4, group differences were most pronounced for those variables most obviously related to religion with differences being less consistent for variables less obviously related to religion. For both types of variables, nonetheless, differences tended to be greatest between the nonreligious and conservative groups in contrast to differences between either the nonreligious and nonconservative groups or the nonconservative and conservative groups. With regards to variables not directly related to religion, the nonconservative group generally appeared to be more similar to the nonreligious group than to the conservative group.

Religious and religiosity-related variables. As shown in Table 4, the three groups strongly differed on all variables related to religiosity; that is, in addition to

Table 4

Means and Probability Levels of Group Differences

(n = 232 unless noted)

Variables	Groups			p
	Nonrel.	Noncon.	Cons.	
Religious				
Belief saliency				
(i) mean	7.33	12.09	16.47	<.0001
(ii) sd	2.25	2.05	3.02	
Group Involvement				
(i) mean	10.53	16.62	25.12	<.0001
(ii) sd	2.16	4.48	6.13	
Prayer				
(a) frequency				
(i) mean	3.15	6.19	10.53	<.0001
(ii) sd	.43	2.50	1.73	
(b) satisfaction				
(i) mean	3.96	7.67	10.33	<.0001
(ii) sd	1.54	2.21	1.83	
Nonreligious Cognitive				
Belief rigidity				
(a) belief sureness				
(i) mean	2.77[a]	2.74[a]	3.34	<.0001
(ii) sd	.78	.71	.74	
(b) dogmatism				
(i) mean	20.56[a]	21.21[a]	23.78	<.0001
(ii) sd	2.55	2.66	2.91	
Life Purpose				
(i) mean	99.80[a]	99.89[a]	113.90	<.0001
(ii) sd	12.80	15.38	38.61	

Note. Superscript indicates no significant difference.

Table 4 (continued)

Variables	Groups Nonrel.	Noncon.	Cons.	p
Coping skills				
A. Use				
Prayer				
(i) mean	1.12	2.36	3.59	<.0001
(ii) sd	.37	.95	.64	
Behavioural problem solving				
(i) mean	2.53[a]	2.53[a]	2.39[a]	ns
(ii) sd	.68	.74	.71	
Self-enhancement				
(i) mean	2.74[a]	2.87[a]	2.81[a]	ns
(ii) sd	.71	.72	.63	
Cognitive problem solving				
(i) mean	2.67[a]	2.89[a]	2.93[a]	ns
(ii) sd	.85	.87	.71	
Distraction				
(i) mean	2.71[a]	2.76[a]	2.62[a]	ns
(ii) sd	.63	.74	.62	
Problem redefinition				
(i) mean	2.53[a]	2.66[a]	2.69[a]	ns
(ii) sd	.69	.79	.77	
Religious skills				
(i) mean	0.92	1.41	2.82	<.0001
(ii) sd	.41	.80	.64	
B. Perceived effectiveness				
Prayer ($n = 141$)				
(i) mean	3.00[a]	3.07[a]	3.67	<.0001
(ii) sd	0.0	.51	.47	
Behavioural problem solving				
(i) mean	2.97[a]	3.04[a]	2.83[a]	.08
(ii) sd	.46	.36	.46	

Note. Superscript indicates no significant difference.

Table 4 (continued)

Variables	Groups: Nonrel.	Noncon.	Cons.	p
Self-enhancement				
(i) mean	3.07[a]	3.15[a]	2.99[a]	ns
(ii) sd	.44	.40	.38	
Cognitive problem solving				
(i) mean	2.97[a]	3.97[a]	2.94[a]	ns
(ii) sd	.52	.47	.43	
Distraction				
(i) mean	3.05[a]	3.00[a]	2.99[a]	ns
(ii) sd	.39	.34	.44	
Problem redefinition				
(i) mean	2.87	3.00[a]	3.02[a]	.003
(ii) sd	.38	.40	.32	
Religious skills (n = 172)				
(i) mean	2.69	2.83	3.37	<.0001
(ii) sd	.43	.59	.39	
Attributions				
Controllability				
(i) mean	3.22[a]	3.16[a]	3.13[a]	ns
(ii) sd	.54	.46	.43	
Instability				
(i) mean	2.70[a,b]	2.51[b]	2.74[a]	.03
(ii) sd	.59	.59	.51	
Externality				
(i) mean	2.55[a]	2.45[a]	2.59[a]	ns
(ii) sd	.50	.48	.45	
Supernatural cause				
(i) mean	1.44	1.98	2.45	<.0001
(ii) sd	.39	.48	.37	
Positive valence				
(i) mean	2.74[a]	2.70[a]	2.84[a]	ns
(ii) sd	.55	.53	.51	

Note. Superscript indicates no significant difference.

Table 4 (continued)

Variables	Groups: Nonrel.	Noncon.	Cons.	p
Supernatural cure				
(i) mean	1.71	2.44	3.04	<.0001
(ii) sd	.52	.50	.49	
Internal cure				
(i) mean	2.73[a,b]	2.78[a]	2.53[b]	.02
(ii) sd	.65	.59	.60	
External Cure				
(i) mean	2.49[a]	2.31[a,b]	2.10[b]	.001
(ii) sd	.63	.61	.56	
Networks (n = 219)				
Religiousness				
(i) mean	24.62	56.27	77.34	<.0001
(ii) sd	20.05	24.88	22.88	
Density				
(i) mean	4.47[a]	4.31[a]	5.24[a]	ns
(ii) sd	3.15	3.25	3.60	
Number				
(i) mean	12.16[a]	11.74[a]	13.75[a]	.04
(ii) sd	5.01	4.85	5.48	
Number biological				
(i) mean	3.66[a]	3.57[a]	4.44[a]	.08
(ii) sd	2.35	2.68	2.46	

Note. Superscript indicates no significant difference.

Table 4 (continued)

Variables	Groups: Nonrel.	Noncon.	Cons.	p
Social provisions				
Social provisions (overall)				
(i) mean	77.04[a]	78.86[a]	80.54[a]	.06
(ii) sd	10.26	9.75	11.50	
Guidance				
(i) mean	13.43[a]	13.54[a]	15.18[a]	.05
(ii) sd	2.15	2.23	2.50	
Reassurance of worth				
(i) mean	12.46[a]	12.63[a]	12.78[a]	ns
(ii) sd	1.85	1.70	1.67	
Social integration				
(i) mean	13.32[a]	13.45[a]	13.80[a]	ns
(ii) sd	1.94	1.92	1.63	
Attachment				
(i) mean	12.47[a]	12.80[a]	13.23[a]	ns
(ii) sd	2.72	2.74	2.42	
Opportunities for nurturance				
(i) mean	11.24[a]	11.97[a,b]	12.50[b]	.0004
(ii) sd	2.24	1.77	1.99	
Reliable alliance				
(i) mean	14.07[a]	13.95[a]	14.64[a]	.04
(ii) sd	1.76	1.85	1.83	
Loneliness				
UCLA scale				
(i) mean	38.71[a]	39.09[a]	37.61[a]	ns
(ii) sd	9.60	8.79	8.54	
Global self-rating				
(i) mean	1.91[a]	2.09[a]	1.83[a]	.08
(ii) sd	.77	2.20	.74	
Chronicity rating (n = 51)				
(i) mean	2.12[a]	2.67[a]	2.31[a]	ns
(ii) sd	.93	1.11	1.03	

Note. Superscript indicates no significant difference.

the directly religious variables of belief saliency, religious group involvement and prayer (both frequency and satisfaction), the three groups also differed on belief rigidity (both sureness and dogmatism), religious coping skills (use and perceived effectiveness of prayer; use and perceived effectiveness of religious coping skills in general), religious attributions (of supernatural cause and cure) and religiousness of networks. For all of these variables, the pattern was the same; nonreligious individuals reported lower levels than nonconservative individuals who reported lower levels than conservative individuals. Tukey HSD tests, moreover, of differences between the nonreligious and nonconservative groups found significant differences on all religiosity-related variables but two, that is, belief sureness and dogmatism, on which the two groups were not significantly different. HSD tests of differences between the nonconservative and conservative groups found significant differences on all religiosity-related variables. Similarly, differences between the nonreligious and conservative groups were highly significant on all of these variables.

The conservative group, therefore, was more "religious" in a number of ways (apart from belief content) than the other two groups. The nonconservative group, on the other hand, was less extreme on religious variables but still more religious than the nonreligious belief group. The greater use of supernatural attributions and religiousness of

networks by the conservative group is especially noteworthy as these results had both been hypothesized.

Nonreligious cognitive variables. As already noted, the three groups differed significantly in belief sureness and dogmatism. In addition, significant differences in life purpose were found. As hypothesized, conservative believers reported the most life purpose of the three groups. The HSD test showed that the conservative group scored significantly higher on the PIL test than either the nonconservative or the nonreligious groups. The latter two groups, however, did not differ significantly.

Coping skills: use and effectiveness. Turning to coping skills unrelated to religion, the groups did not differ in terms of their use of various skills. With regards to perceived effectiveness, the three groups did differ significantly in the perceived effectiveness of redefining the problem. HSD tests showed that the nonconservative and conservative groups did not differ significantly. Both these groups, however, perceived this skill to be more effective than did the nonreligious group. Overall, then, the religious groups (in particular, the conservative group) were more likely to perceive problem redefinition as an effective way of combatting loneliness as well as to be more likely to use (and perceive as effective) religious coping skills.

Attributions. With regards to attributions unrelated to religion, the conservative group, in contrast to the nonconservative group, was both less likely to perceive

loneliness as stable and less likely to feel that changing oneself was one of the best responses to loneliness. Neither the conservative group nor the nonconservative group differed significantly from the nonreligious group on these variables. In contrast, however, the conservative group, when compared to the nonreligious group, was less likely to feel that changing one's situation was one of the best ways of coping with loneliness. The nonconservative and nonreligious groups did not differ significantly on this variable.

Overall then, the conservative group, in comparison to the other two groups, was less likely to turn to either the self or the situation to change loneliness but was more likely to turn to God. In contrast, the nonconservative group, when compared to the nonreligious group, was more likely to turn to God but was no less likely to change either the self or the situation.

Relationships: networks and provisions. With regards to aspects of networks not related to religion, the three groups did not differ significantly in either network density or the number of people in the network. There was a tendency, however, for the conservative group to have the greatest number of people in their network and for the nonconservative group to have the least.

Turning to social provisions, the conservative group was significantly more likely to have opportunities for nurturance than the nonreligious group. Neither group

differed significantly in opportunities for nurturance from the nonconservative group. As seen in Table 4, there was also a tendency for group differences in overall social provisions, guidance and reliable alliance. As these differences can only be considered to be suggestive, HSD tests were not performed. There appeared, however, to be a tendency for the conservative group, in contrast to the other two groups, to exhibit more social provisions overall, a greater sense of guidance and a greater sense of reliable alliance.

Overall then, the conservative group, in comparison to both the nonreligious and nonconservative groups, reported networks which were both largely composed of religious people and which offered many opportunities for nurturance (while tending to also have more of other social provisions as well as more people in their networks). The nonconservative group, in contrast to the nonreligious group, had networks which were largely composed of religious people but which did not tend to differ in other respects.

Loneliness. With regards to loneliness, the three groups did not differ significantly on either the UCLA loneliness scale, the global rating or the chronicity rating. There was, however, a tendency for the nonconservative group to perceive themselves as most lonely, in contrast to the other two groups, as measured by the global rating.

Summary

In sum, the three groups differed most with regards to

characteristics of religious faith (salience of beliefs, religious group involvement, frequency of and satisfaction with prayer), variables directly related to religion (the rigidity of beliefs, the use and perceived effectiveness of prayer as a coping skill, the use and perceived effectiveness of religious coping skills in general, attribution of the causes of loneliness to supernatural sources and looking to God for help with loneliness, the percentage of people in one's network considered to be religious), life purpose, the perceived effectiveness of problem redefinition in dealing with loneliness, the value of changing one's situation in response to loneliness and the availability of opportunities for nurturance in one's relationships. Although not significant, there were also tendencies for group differences in the perceived effectiveness of behavioural problem solving, the perceived instability of loneliness, the overall social provisions available in one's relationships, a sense of guidance and a sense of reliable alliance, the number of people in the network and the number of biologically related people in the network, a global rating of loneliness and social desirability. There were no group differences in the remaining coping skills (either their use or perceived effectiveness), perceived locus, controllability and valence of loneliness, network density, the provisions of reassurance of worth, social integration and attachment, the number of nonbiologically related people in the network, the UCLA loneliness scale and the measure of the chronicity of

loneliness.

Sex Differences and Sex by Group Interactions

There were few significant differences by sex as well as few sex by group interactions. There were, for example, only three significant differences by sex, all of which suggested greater interpersonal adequacy for females over males. First, females reported significantly more social provisions than males ($p = .004$). Second, females reported a significantly greater sense of attachment than males ($p = .002$). Third, females reported significantly less loneliness than males ($p = .01$).

Significant sex by group interactions were found for three variables. First, the interaction was significant for the perceived instability of loneliness ($p = .01$). For females, there was little difference between the three groups. The means of the female nonreligious, nonconservative and conservative groups were 2.57, 2.63 and 2.61 respectively. For males, on the other hand, the nonconservative group was lower (mean = 2.39) than both the nonreligious group (mean = 2.81) and the conservative group (mean = 2.85). Second, the interaction was significant for the religiousness of one's network ($p = .002$). Differences in network religiousness seemed less pronounced for females than for males. The female nonreligious, nonconservative and conservative groups reported 24.98%, 66.15% and 74.51% respectively of their networks being composed of religious individuals. In contrast, the male nonreligious, nonconservative and

conservative groups reported 24.28%, 46.13% and 80.09% of their networks being composed of religious individuals. Third, the interaction was significant for a sense of reliable alliance (p = .002). Females showed little difference in this variable. Means for the female nonreligious, nonconservative and conservative groups were 14.12, 14.77 and 14.53 respectively. Males, however, showed more variation. Means for male nonreligious, nonconservative and conservative groups were 14.02, 13.13 and 14.75 respectively.

Overall, these sex differences and interactions would suggest that males, in contrast to females, have less interpersonal adequacy and, that, in particular, nonconservative males, in contrast to nonreligious and conservative males, are most likely to lack a sense of alliance with others and to perceive loneliness as the most stable. In general, nonetheless, differences between religious groups are largely uncontaminated by either significant differences by sex or by significant sex by group interactions.

Relationships between Variables: All Subjects Combined

Different aspects of religiosity (belief content, belief rigidity, belief saliency, religious group involvement, belief rigidity and the frequency of and satisfaction with prayer) were hypothesized to be associated with loneliness by way of mediating variables. The latter included one's sense of purpose in life, coping skills, attributions and

networks. Although bivariate relationships are of primary interest, more complex relationships (more than one predictor) will also be examined. Because many correlations were examined with consequent increasing probability of Type 1 errors, a familywise alpha level (that is, a constant alpha level for a related group of hypothesis tests) was set at .05 with a .001 testwise alpha level per hypothesized correlation (.05/49 hypothesized correlations = .001). A testwise alpha level of .0004 was set for nonhypothesized correlations (.05/142 nonhypothesized correlations = .0004).

Relationships with purpose in life will first be explored followed by relationships with the other mediating variables.

Life Purpose

More purpose in life was hypothesized to be associated with stronger religious beliefs (in particular, stronger conservative religious beliefs), greater rigidity of beliefs, greater importance of beliefs, more involvement in religious groups, more time spent in prayer and greater satisfaction with prayer. Table 5 presents these relationships.

Insert Table 5 about here.

As seen in Table 5, the hypothesized relationships were largely corroborated. Relationships, however, were only moderate; no more than 8.29% of the variance in life purpose was accounted for by any one of the variables. Increasing

Table 5

Pearson Correlations Showing Hypothesized Relationships With Life Purpose (n = 232)

Variables	r
Conservative belief	.221*
(Nonconservative belief	-.121)
(Nonreligious belief	-.136)
Belief rigidity	
(a) sureness	.218*
(b) dogmatism	.048
Belief saliency	.225*
Religious group involvement	.286*
Prayer	
(a) frequency	.210*
(b) satisfaction	.205*

* $p < .05$ familywise; $p < .001$ testwise

life purpose was moderately associated with strong conservative belief content (but not with nonconservative or nonreligious belief content), greater sureness of beliefs (but not the dogmatism of beliefs), greater salience of beliefs, greater religious group involvement and with more time spent in and satisfaction with prayer. Yet the three groups, as already mentioned, did differ significantly in life purpose. Increasing religiosity (as measured in a number of ways), then, appeared to be related to increasing purpose in life.

Two stepwise regressions were conducted as a test of the overall hypothesis regarding life purpose. Using the measure of belief sureness as the measure of belief rigidity, the predictors accounted for 9.8% of the variance in PIL scores (See Table 6).

Insert Table 6 about here

When the measure of dogmatism was used, the predictors accounted for 9.26% of the variance in PIL scores. In each regression, religious group involvement (in particular) and belief rigidity (however measured) emerged as important predictors of life purpose. The remaining variables appeared to add little to the solution. Those individuals, then, who exhibited the "conservative" characteristics of involving themselves in church life and who were less flexible about their beliefs also exhibited more purpose in life.

Table 6

Stepwise (Forward) Regression Predicting Life Purpose from Hypothesized Predictors

(a) using belief sureness as the measure of belief rigidity (R = .314; df = 6, 218)

Predictors	Beta	F	R^2%
Religious group involvement	.286	5.19	8.17
Sureness	.133	3.63	9.65
Prayer frequency	-.101	0.41	9.78
Prayer satisfaction	.064	0.22	9.84
Belief salience	-.043	0.09	9.87
Conservative belief	.27	0.05	9.89

(b) using dogmatism as the measure of belief rigidity (R = .304; df = 6, 218)

Predictors	Beta	F	R^2%
Religious group involvement	.317	6.47	8.17
Dogmatism	-.109	2.10	8.93
Conservative belief	.104	0.64	9.06
Prayer frequency	-.097	0.38	9.19
Prayer satisfaction	.053	0.15	9.23
Belief salience	-.034	0.05	9.26

Prayer as a Coping Skill

Greater use of prayer as a coping skill as a response to loneliness was hypothesized to be associated with both more time spent in prayer and satisfaction with prayer in general. The use of prayer was found to correlate .849 and .821 respectively with these two predictors. This would suggest that those who pray more often and find satisfaction in doing so were more likely to pray in response to feeling lonely. The close relationship between, in particular, prayer frequency and the use of prayer was further suggested by a stepwise solution predicting the use of prayer from the two predictors together. As seen in Table 7, precedence was given to the frequency of prayer over satisfaction with prayer.

Insert Table 7 about here.

The perceived effectiveness of prayer as a coping skill against loneliness was hypothesized to be correlated with belief salience. As hypothesized, those who attributed more importance to their religious beliefs were also more likely to perceive prayer as helpful (r = .567).

These corroborated relationships with prayer as a coping skill would suggest strong inter-relationships between aspects of religious life. This strength was also indicated by nonhypothesized relationships between the use and perceived effectiveness of prayer and other aspects of religiosity (See Table 8).

Table 7

Stepwise (Forward) Regression Predicting the Use of Prayer from Hypothesized Predictors

R = .867; df = 2, 220

Predictors	Beta	F	R^2%
Prayer frequency	.541	68.67	71.85
Prayer satisfaction	.357	29.89	75.22

Insert Table 8 about here.

As seen in Table 8, individuals with rigid, conservative and salient beliefs, high religious involvement and a frequent and satisfying prayer life were likely to use prayer as a coping device and to perceive this use as effective. When the analysis was restricted to those who had used prayer, those holding nonconservative beliefs strongly were unlikely to perceive prayer as effective. Those holding nonreligious beliefs strongly were less likely than others to either use prayer or to perceive it (if used) as effective.

In sum, those who were more religious in a number of ways (in particular, ways associated with being a conservative believer) were more likely to use prayer and to perceive it as effective. These two variables were, in fact, also correlated. Those who used prayer were also likely to perceive it as an effective method of coping with loneliness.

Attributions

It had been hypothesized that those individuals perceiving loneliness to be temporary and controllable would also be more likely to attribute the causes of loneliness to supernatural agents. The latter was neither correlated with perceived instability (r = .013) nor with perceived controllability (r = -.065). Instead, those perceiving loneliness as more temporary and controllable than others were no more likely to perceive loneliness as originating

Table 8

Nonhypothesized Relationships with the Use of Prayer and its Perceived Effectiveness as a Coping Skill

	Use of Prayer (n = 232)	Perceived Effectiveness (n = 142)
Variables	r	r
Belief rigidity		
(a) sureness	.239*	.337*
(b) dogmatism	.394*	.285*
Conservative belief	.767*	.567*
Nonconservative belief	-.066	-.489*
Nonreligious belief	-.749*	-.307*
Belief salience	.782*	(.567*)
Religious group involvement	.689*	.462*
Prayer		
(a) frequency	(.849*)	.578*
(b) satisfaction	(.821*)	.565*
Perceived effectiveness (n = 142)	.614*	

* $p < .05$ familywise; $p < .0004$ testwise

from supernatural sources. Controllability and instability were, themselves, only slightly associated (r = .114) and this was not significant at the .05 family wise alpha level.

Although attribution to supernatural cause was not related to other attributional dimensions, the former was, as hypothesized, associated with a number of aspects of religiosity. Those individuals attributing supernatural cause were also more likely to profess conservative beliefs (r = .647), to feel that religious beliefs were important to them (r = .721) and to use prayer as a coping device (r = .675). A stepwise regression was used to test the overall hypothesis on supernatural causation (See Table 9).

Insert Table 9 about here.

As seen in Table 9, belief salience appeared to be a particularly important predictor of supernatural attribution. It appeared that those seeking to make religious beliefs an important factor in their lives were particularly apt to perceive loneliness as being caused by supernatural agents.

In general, then, those attributing loneliness to supernatural causes were not more likely than others to perceive loneliness as either more controllable or more stable but were more likely to perceive their religious beliefs as important to them, to use prayer as a coping skill and to hold conservative beliefs. As has been already indicated, the relationships between belief content and

Table 9

Stepwise (Forward) Regression Predicting Supernatural Attribution from Hypothesized Predictors

R = .774; df = 3, 208

Predictors	Beta	F	R^2%
Belief salience	.477	30.62	52.58
Use of Prayer	.213	6.85	54.96
Conservative belief	.101	1.49	55.28

supernatural attributions was also corroborated by a MANCOVA.

Coping skills and attributions. Table 10 presents inter-relationships between attributions and both the use and perceived effectiveness of coping skills.

Insert Table 10 about here.

In general, there was little relationship between coping skills and particular attributions. There appeared, however, to be five trends in the data. First, there was a tendency for those individuals perceiving coping skills to be effective to perceive loneliness as controllable but not necessarily as less stable or caused by the situation. Second, those using religious coping skills and perceiving them to be effective were, in general, likely to perceive loneliness to be caused by the situation, to attribute supernatural causes and to turn to God when feeling lonely. Third, those using religious coping skills, on the other hand, were less likely to feel that changing the situation was a very good way of dealing with loneliness. Fourth, those attributing supernatural causes were likely to perceive problem redefinition as effective. Fifth, those using cognitive problem solving were less likely both to perceive loneliness to be temporary and to feel that changing the situation would be an effective way of dealing with loneliness.

In sum, although there were some strong relationships between coping skills and attributions, these were largely

Table 10

Correlations between Attributions and Coping Skill Use and Perceived Effectiveness

(n = 232)

Attributions	Coping Skills			
	Self-enhancement		Behavioural problem solving	
	Use	Effectiveness	Use	Effectiveness
Externality	.11	.12	.02	.13
Controllability	.13	.24*	.15	.24*
Instability	-.09	.04	-.04	.11
Supernatural	.21	-.02	.11	-.04
Solutions				
(a) change self	.03	.03	.01	.02
(b) change situation	-.07	.05	-.04	.03
(c) turn to God	.13	.02	.05	.06
	Problem redefinition		Distraction	
	Use	Effectiveness	Use	Effectiveness
Externality	.15	.11	.08	.08
Controllability	.07	.24*	.01	.10
Instability	-.03	.22*	-.17	.03
Supernatural	.20	.22*	.05	.01
Solutions				
(a) change self	-.04	.03	-.02	.04
(b) change situation	-.11	-.10	-.02	-.01
(c) turn to God	.19	.25*	.03	.04
	Cognitive problem solving		Religious coping (n = 177)	
	Use	Effectiveness	Use	Effectiveness
Externality	.08	.06	.17	.22*
Controllability	.05	.25*	-.02	.15
Instability	-.24*	.13	.04	-.01
Supernatural	.19	.12	.62*	.39*
Solutions				
(a) change self	-.03	.02	-.20	-.24*
(b) change situation	-.24*	-.10	-.25*	-.16
(c) turn to God	.11	.16	.63*	.52*

* $p < .05$ familywise; $p < .0004$ testwise

confined to skills and attributions which were conceptually related (that is, between religious attributions and religious skills). Other relationships, while present, were less strong. The strongest of these relationships (between controllability and behavioural problem solving effectiveness) only accounted for 6.55% of the variance. The pattern of results, nonetheless between controllability and perceived effectiveness was strongly suggestive of a close relationship between these dimensions; that is, as might be expected, those who perceived their responses to loneliness to be effective were also more likely to perceive loneliness to be controllable.

Networks

Greater religiousness of networks (the percentage of people in the network considered to be religious) was hypothesized to be associated with greater network density and more social provisions. Although density and religiousness of networks were not related (r = .081), greater religiousness was associated with more social provisions (r = .253). In particular, those individuals with a greater percentage of religious individuals in their networks were more likely to have opportunities for nurturance (r = .221). Although there was a tendency for such individuals to also have a greater sense of attachment to at least one other person (r = .195), a greater sense of reliable alliance (r = .153) and greater reassurance of worth (r = .133), those relationships were not significant

at the .0004 testwise alpha level set for nonhypothesized correlations. As well, individuals with highly religious networks were no more likely to feel a sense of guidance (r = -.002) or to have a sense of social integration (r = .087) than others.

Religiousness of networks was also hypothesized to be associated with greater religious group involvement, stronger conservative belief content and greater rigidity of beliefs. As predicted, individuals with highly religious networks were more likely to be heavily involved in church activities (r = .648), to strongly hold conservative beliefs (r = .586) and to hold beliefs more dogmatically (r = .241). Such individuals were, however, not found to necessarily hold their beliefs with more assurance. Although network religiousness and belief sureness were related (r = .180), this relationship was not significant at the .001 testwise alpha level set for hypothesized correlations. It appeared that involvement in church activities was the strongest predictor of network religiousness. This was corroborated by two stepwise regressions which were performed as tests of the overall relationship with network religiousness. Alternately using dogmatism and belief sureness as the measure of belief rigidity, 44.46% and 44.48% of the variance in network religiousness was accounted for by the three predictors. Table 11 shows the stepwise solution in each case.

Insert Table 11 about here.

For both solutions, involvement in religious groups was the strongest predictor of network religiousness.

In general, then, increasing network religiousness was (a) strongly associated with increasing personal religiousness (in particular, with increasing involvement in church activities) (b) only moderately associated with more social provisions and (c) unrelated to network density.

There were also a number of nonhypothesized significant correlations between relationship variables. For example, the density of networks and social provisions were correlated .272 with the former being particularly associated with a sense of reliable alliance (r = .282), a sense of attachment (r = .279) and a sense of social integration (r = .233). Density was not significantly correlated with the remaining provisions. The number of individuals in the network was similarly correlated with social provisions overall (r = .346) and was also significantly associated with each of the six provisions (r ranging from .231 with guidance and .345 with reliable alliance to .372 with attachment).

Loneliness

It was hypothesized that greater life purpose, greater use of prayer as a coping skill, greater perceived effectiveness of prayer as a coping skill, greater perceived

Table 11

Stepwise (Forward) Regression Predicting Network Religiousness from Hypothesized Predictors

(a) using sureness as the measure of belief rigidity

(R = .667; df = 3, 225)

Predictors	Beta	F	R^2%
Religious group involvement	.496	40.73	41.94
Conservative belief	.235	9.12	43.94
Sureness	-.080	2.20	44.46

(b) using dogmatism as the measure of belief rigidity

(R = .667; df = 3, 225)

Predictors	Beta	F	R^2%
Religious group involvement	.490	40.17	41.94
Conservative belief	.251	9.80	43.94
Dogmatism	-.083	2.11	44.46

controllability of loneliness, greater perceived instability of loneliness, greater network density and more social provisions would be associated with less loneliness. Each of these relationships will be discussed in turn. Table 12 presents these relationships.

Insert Table 12 about here.

As seen in Table 12, people with less purpose in life were more lonely as measured by the UCLA scale, a global rating of loneliness and a rating of the chronicity of loneliness. Because the PIL test had appeared to be heterogeneous, a factor analysis with a varimax rotation of the items was performed (See Table 13).

Insert Table 13 about here.

Two factors were extracted; that is, a life satisfaction factor and a life meaning factor. When the correlations between the measures of loneliness and the items making up these factors were examined, as shown in Table 13, it appeared that relationships with the satisfaction factor and loneliness tended to be stronger than relationships between the meaning factor and loneliness. In general, then, although people with more life purpose (as measured by the PIL test) experienced less loneliness, those individuals who, in particular, experienced life as more fulfilling and

Table 12

Pearson Correlations Showing Hypothesized Relationships with Loneliness (n = 232 unless noted)

Variables	Measures of Loneliness		
	UCLA scale	Self-rating	Chronicity (n = 51)
Life purpose	-.297*	-.251*	-.258*
Prayer			
(a) use	.032	.068	.061
(b) effectiveness (n = 142)	-.050	-.180	-.022
Perceived controllability	-.221*	-.168	-.339*
Perceived instability	-.321*	-.415*	-.226*
Density	-.280*	-.112	.031
Social provisions	-.682*	-.433*	-.430*

* $p < .05$ familywise; $p < .001$ testwise

Table 13

Factor Analysis of the PIL Test and Item Correlations with the UCLA Scale

Factor

Satisfaction (Eigen value = 5.77; Variance explained = 28.84%)

Item	Weight	Correlation
I feel exuberant	.751	-.528*
life is exciting	.723	-.373*
everyday is new	.552	-.293*
glad to be alive	.548	-.335*
life full of good things	.672	-.509*
life worthwhile	.655	-.469*
life pleasurable	.576	-.254*

Meaning (Eigen value = 1.19; Variance explained = 5.94%)

Item	Weight	Correlation
I have clear goals	.648	-.191
life is meaningful	.786	-.300*
I have progressed	.381	-.088
see a reason for my life	.492	-.331*
world is meaningful	.382	-.269*
able to find meaning	.525	-.145
have a life purpose	.755	-.230*

Remaining items (weight $<$ .350)

Item	Correlation
have plans when retire	-.287*
a responsible person	-.119
free to make choices	-.235*
prepared for death	-.138
no suicidal thoughts	-.339*
in control of life	-.254*

Note. Items included in the factors only if weight $>$ .350.

* $p < .05$ familywise; $p < .0004$ testwise

satisfying experienced less loneliness.

Turning from life purpose to the two religious predictors of loneliness, neither the use of prayer nor the perceived effectiveness of prayer as a coping device were related to loneliness; individuals using prayer and perceiving it to be effective were no more or less likely to feel lonely than those who did not use this response.

With regards to attributions, those individuals who perceived loneliness to be controllable and, in particular, to be temporary were also less likely to feel lonely.

Concerning aspects of relationships, those with greater network density were less likely to feel lonely as measured by the UCLA Loneliness Scale. Because network size and density were related ($r = .462$), a partial correlation between the density of networks and the UCLA scale controlling for the number of friends was computed. The correlation was reduced from -.280 to -.113 which was no longer significant. A z test of the significance of the difference between correlations, furthermore, showed that network size was a significantly stronger predictor of loneliness than density ($p < .05$).

Those with greater supplies of social provisions were far less likely to feel lonely. Although those who were less lonely tended to have more of each of the six provisions, a sense of guidance ($r = -.312$) and opportunities for nurturance ($r = -.396$) seemed to be less closely related to loneliness as measured by the UCLA scale than the provisions

of attachment (r = -.719), social integration (r = -.625), reliable alliance (r = -.591) and reassurance of worth (r = -.588). Z-tests of the significance of the difference between correlations for correlated samples revealed that guidance and opportunities for nurturance were significantly less correlated with the UCLA scale ($p < .001$) than the remaining provisions.

Social provisions was found to be more closely associated with loneliness than were the other predictors. This was indicated by tests of the significance of the difference between two correlation coefficients for the same sample. Although the correlations between the UCLA scale and social provisions was significantly greater ($p < .01$) than the other hypothesized relationships with the UCLA scale, the remainder did not differ significantly from one another.

The strong relationship between social provisions and loneliness was also suggested by two stepwise regressions which were performed as a test of the overall hypothesis regarding loneliness. All hypothesized predictors were entered (one predicting the UCLA scale and one predicting the self-rating). Table 14 shows the stepwise solution for these regressions.

Insert Table 14 about here.

As seen in Table 14, social provisions was most closely

Table 14

Stepwise (Forward) Regression Predicting Loneliness from Hypothesized Predictors

(a) predicting UCLA Loneliness scores (R = .711; df = 6, 208)

Predictors	Beta	F	R^2%
Social provisions	-.608	117.12	46.78
Perceived instability	-.144	7.81	49.33
Density	-.078	2.28	49.90
Use of prayer	.068	1.85	50.26
Life purpose	-.149	0.85	50.47
Perceived controllability	-.018	0.13	50.50

(b) predicting the global self-rating (R = .536; df = 6, 217)

Predictors	Beta	F	R^2%
Social provisions	-.311	21.27	17.58
Perceived instability	-.304	24.16	26.71
Life purpose	-.110	2.96	27.43
Use of prayer	.096	2.54	28.34
Density	.055	0.76	28.57
Perceived controllability	-.043	0.49	28.74

related to the measures of loneliness with perceived instability being most closely related after social provisions.

There were also a number of nonhypothesized but significant relationships between the measures of loneliness and other variables. Table 15 presents these relationships.

Insert Table 15 about here.

As seen in Table 15, individuals who were more lonely as measured by the UCLA scale also tended to rate themselves as more lonely, to have been lonely for longer periods of time, to have fewer people in their networks, to be less likely to have perceived either behavioural problem solving or problem redefinition as effective ways of dealing with loneliness and to be more willing to have employed cognitive problem solving as a method of coping with loneliness. Those rating themselves as lonely were also more likely to have fewer people in their network, to have perceived problem redefinition as ineffective and to have used cognitive problem solving. Finally, those who had been lonely a longer period of time were less likely to have perceived self-esteem enhancing behaviours as effective when coping with loneliness. The majority of these correlations, nonetheless, are not strong but only suggestive.

An additional regression was performed with all predictors of the UCLA scale found to be significant by group.

Table 15

Pearson Correlations Showing Nonhypothesized Relationships with Loneliness (n = 232 unless noted)

Variables	Measures of Loneliness		
	UCLA scale	Self-rating	Chronicity (n = 51)
UCLA scale	1.000	.539*	.613*
Self-rating	.539*	1.000	.235
Number of people	-.407*	-.228*	-.025
Self-enhancement effectiveness	-.170	-.084	-.471
Behavioural problem solving effectiveness	-.232*	-.167	-.235
Problem redefinition effectiveness	-.226*	-.210*	-.235
Cognitive problem solving	.302*	.276*	.216

* $p < .05$ familywise, $p < .0004$ testwise

The predictors were entered in a stepwise solution in which *F* was required to be equal to or greater than 2 (See Table 16).

Insert Table 16 about here.

Again, social provisions emerged as the strongest predictor of loneliness. Cognitive problem solving and the number in the network also emerged as important predictors.

In sum, then, with regard to hypothesized predictors, individuals with more social provisions, greater purpose in life, high density networks and greater perceptions of loneliness as controllable and unstable tended to be less lonely. In general, however, social provisions were more potent predictors of loneliness than either cognitive processes (attributions, one's sense of life purpose, cognitive strategies) or behavioural strategies.

Relationships by Group

Correlations and stepwise regressions were used to examine relationships between predictors and loneliness by group. Because many correlations were examined with consequent increasing probability of Type 1 errors, a familywise alpha level was set at .05 with a .001 testwise alpha level per correlation (.05/48 = .001).

Table 17 shows significant correlations with the UCLA Loneliness Scale by group.

Table 16

Stepwise (Forward) Regression Predicting UCLA Scores from All Significant Predictors in which $F \geq 2$

$R = .753$; $df = 5, 204$

Predictors	Beta	F	R^2%
Social provisions	-.560	121.71	47.16
Cognitive problem solving	.203	18.22	51.30
Number of people	-.170	11.65	54.50
Behavioural problem solving effectiveness	-.117	6.15	55.99
Perceived instability	-.089	3.38	56.71

Insert Table 17 about here.

As seen in Table 17, relationships were not completely consistent between each group. For example, greater life purpose was strongly related to less loneliness in both the nonconservative and nonreligious groups but was not significantly related to loneliness in the conservative group. In general, moreover, relationships between loneliness and mediating variables were less strong in the conservative group than in the other two groups.

Stepwise regressions by group revealed a similar pattern. Table 18 shows three regressions predicting the UCLA scale from the hypothesized predictors (excluding the perceived effectiveness of prayer) by group.

Insert Table 18 about here.

As in the overall regression, social provisions was the strongest predictor of loneliness in each group. With regard to the second predictor in each group, on the other hand, there was less consistency. The perceived instability of loneliness, life purpose and the use of prayer emerged as the second predictor in the nonreligious, nonconservative and conservative groups respectively.

Three additional regressions were performed with all predictors of the UCLA scale found to be significant by group

Table 17

Significant Correlations with the UCLA Loneliness Scale by Group

Variables	Groups Nonrel. (n = 76)	Noncon. (n = 80)	Cons. (n = 76)
Life purpose	-.523*[a]	-.556*[b]	-.162 [a,b]
Social provisions	-.796*[a]	-.776*[b]	-.493*[a,b]
Guidance	-.707*[a]	-.701*[b]	-.180 [a,b]
Reassurance of worth	-.631*	-.473*	-.662*
Social integration	-.694*	-.623*	-.533*
Attachment	-.722*	-.743*	-.686*
Nurturance	-.482*[z]	-.501*[y]	-.189 [y,z]
Reliable alliance	-.606*	-.588*	-.576*
Density	-.320*	-.300	-.204
Number of people	-.482*	-.389*	-.340*
Cognitive problem solving	.320*	.419*	.149
Prayer use	-.057	.219	.035
Behavioural problem solving effectiveness	-.345*	-.200	-.182
Problem redefinition effectiveness	-.411*[y]	-.160	-.051 [y]
Controllability	-.354*[y]	-.031 [y]	-.267
Instability	-.452*[a]	-.442*[b]	.004 [a,b]

* $p < .05$ familywise; $p < .001$ testwise

[a,b] correlations differ by group ($p < .01$)

[y,z] correlations differ by group ($p < .05$)

Table 18

Stepwise (Forward) Regressions Predicting UCLA Scores by Religious Group

(a) nonreligious group (R = .827; df = 6, 65)

Predictors	Beta	F	R^2%
Social provisions	-.723	54.38	61.80
Perceived instability	-.255	9.93	68.03
Use of prayer	-.052	0.54	68.30
Perceived controllability	.040	0.23	68.41
Density	-.020	0.04	68.43
Life purpose	.010	0.02	68.44

(b) nonconservative group (R = .817; df = 6, 70)

Predictors	Beta	F	R^2%
Social provisions	-.645	58.03	61.28
Life purpose	-.189	5.10	65.56
Perceived instability	-.108	1.70	66.12
Density	-.073	0.99	66.58
Use of prayer	-.041	0.30	66.74
Perceived controllability	-.021	0.08	66.78

(c) conservative group (R = .546; df = 6, 58)

Predictors	Beta	F	R^2%
Social provisions	-.490	15.27	25.16
Use of prayer	.164	2.09	27.92
Density	-.120	1.02	29.08
Perceived instability	.073	0.41	29.55
Perceived controllability	-.049	0.17	29.75
Life purpose	-.027	0.05	29.81

($F \geq 2$). As seen in Table 19, social provisions again emerged as the strongest predictor in each regression.

Insert Table 19 about here.

Cognitive problem solving also emerged as an important predictor of loneliness in two of three regressions. Cognitive problem solving was not sufficiently predictive to be included in the regression restricted to the conservative group. Instead, in the latter group, the use of prayer emerged as a significant predictor of loneliness. Coping skill use, regardless of type, nonetheless, was a positive predictor of loneliness; that is, those individuals who reported using these coping skills more often as a way of coping with loneliness than other individuals also reported feeling more lonely.

In general, then, similar patterns of relationships occurred by group as seen overall. Relationships tended, however, to be less strong with the conservative group than with the other two groups.

Summary of Results

As has been shown, there were a number of strong differences between the three religious groups. Although these differences were centered primarily on aspects of religiosity (direct aspects of faith and less direct aspects of coping, attributions and networks related to religiosity), strong differences were also found in variables not

Table 19

Stepwise (Forward) Regressions Predicting UCLA Scores by Group From All Significant Predictors in which $F \geq 2$

(a) nonreligious group (R = .821; df = 3, 63)

Predictors	Beta	F	R^2%
Social provisions	-.673	78.59	58.34
Perceived instability	-.229	9.02	63.96
Cognitive problem solving	.189	6.75	67.45

(b) nonconservative group (R = .823; df = 4, 69)

Predictors	Beta	F	R^2%
Social provisions	-.595	51.92	60.12
Life purpose	-.219	8.07	64.58
Cognitive problem solving	.160	4.97	66.71
Number of people	-.107	2.15	67.72

(c) conservative group (R = .597; df = 3, 60)

Predictors	Beta	F	R^2%
Social provisions	-.504	21.52	26.02
Number of people	-.249	5.45	31.03
Use of prayer	.221	4.28	35.62

conceptually related to religiosity. In particular, the conservative group reported a greater sense of life purpose. As well, the conservative group tended to have more social provisions of various kinds than the other two groups.

In addition, a number of hypothesized relationships received corroboration in the study. Table 20 presents the hypothesized relationships and subsequent results.

Insert Table 20 about here.

Turning first to the mediating variables and their possible antecedents, greater life purpose was found to be moderately associated with the majority of characteristics of religious faith.

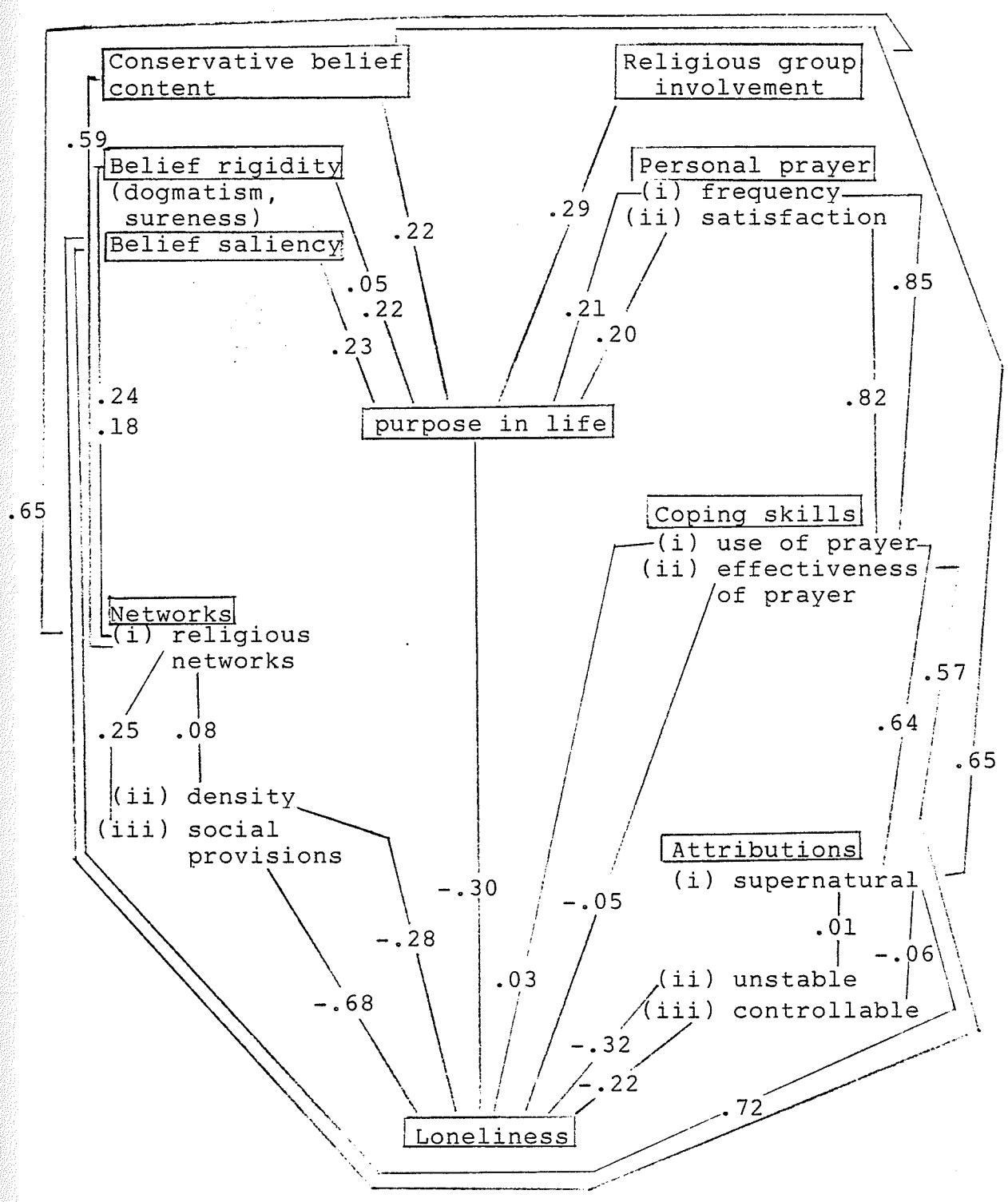
Similarly, coping skills were found to be associated with religiosity. In particular, those both using prayer and perceiving it to be effective were also more likely to pray often in general and to be satisfied with prayer.

On the other hand, although religiosity was associated with one's attributions (in particular, attributions to supernatural causes), attributions to supernatural causes were not associated with either perceived instability or controllability.

Similarly, although belief rigidity, belief content and religious group involvement were associated with the religiousness of networks, the latter was related only to social provisions but not to network density.

Table 20

Pearson Correlations Showing Hypothesized Relationships



Finally, turning to the relationships of potential mediating variables with loneliness (in Table 20 represented by the UCLA scale only), increasing life purpose, perceived instability of loneliness, perceived controllability of loneliness and network density were moderately associated with less loneliness. Greater supplies of social provisions, moreover, were strongly associated with less loneliness. In contrast, the use and perceived effectiveness of prayer as a coping skill were unrelated to loneliness.

Table 21 presents revisions of Table 20.

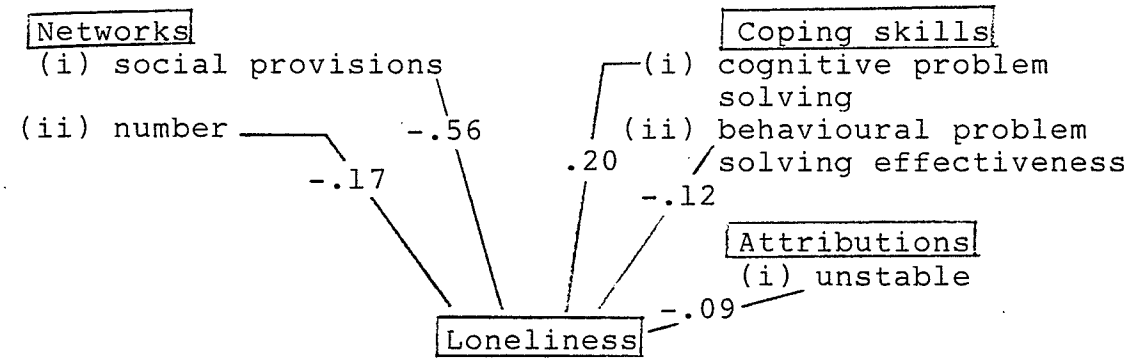
Insert Table 21 about here.

The former differs from the latter in four ways. First, relationships are expressed diagrammatically for each of three groups as well as for all subjects combined. Second, regression coefficients produced by stepwise solutions are given rather than correlations in order to give a greater sense of which variables were most closely related to loneliness. Third, only those variables in which F was equal to or greater than two were included, thus removing those variables which contributed little or nothing to prediction. Fourth, relationships with loneliness (as measured by the UCLA scale) are the only ones shown. More social provisions (in particular), more individuals in one's network, greater perceived instability of loneliness and less frequent use of coping skills were, in general, associated

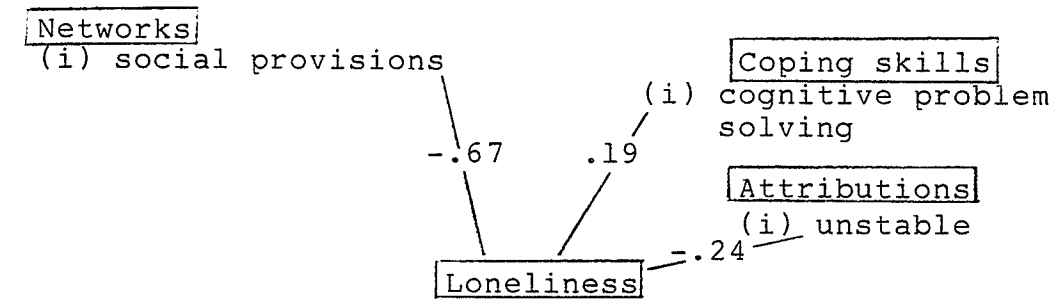
Table 21

Predictors of UCLA Loneliness Scale Scores Both Overall and by Group in which $F \geq 2$ in Stepwise (Forward) Regression (numbers are beta weights)

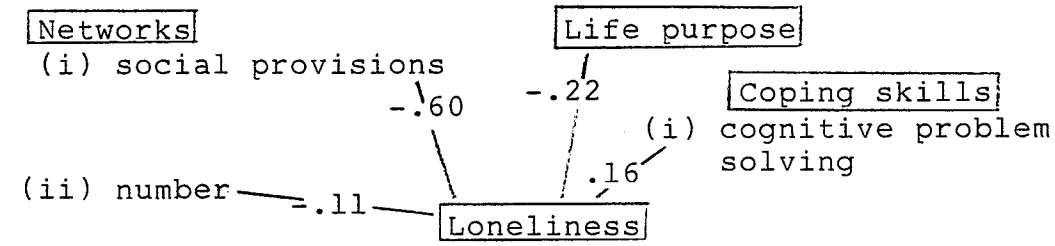
(a) all subjects



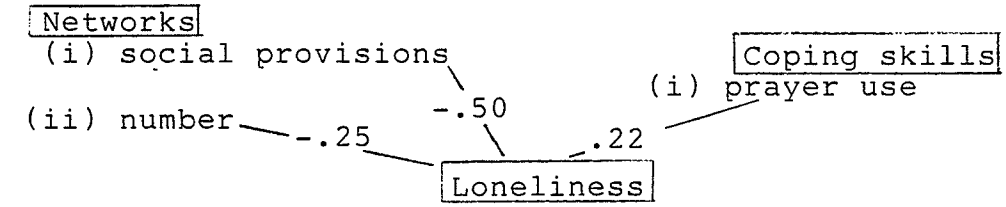
(b) nonreligious group



(c) nonconservative group



(d) conservative group



with less loneliness.

In summary, then, initial relationships were largely corroborated. Life purpose, network religiousness, religious coping skills and supernatural attributions were all accounted for, in some part, by religious variables. More intermediate relationships, however, were less consistent. Although network religiousness moderately predicted the stock of social provisions, the former had no relationship to network density. Furthermore, supernatural attribution bore no relationship to attributions of controllability and instability. Finally, direct relationships with loneliness received support for nonreligious variables (life purpose, attributions of controllability and instability, social provisions and network density) but not for religiously toned variables (the use of prayer and the effectiveness of prayer as a coping device).

Discussion

This section will explore three areas. First, implications of the relationships between loneliness and the four hypothesized classes of mediating variables will be examined. Second, inter-relationships between loneliness and religiosity will be explicated with a particular focus on how the inclusion of a religiosity component in this study has led to a fuller understanding of loneliness. Third, implications of the study for research, theory and clinical practice will be surveyed.

Loneliness

In this section, the relationships between loneliness and the four classes of mediating variables between loneliness and religiosity will be examined, beginning with life purpose (and life satisfaction), followed by coping skills, attributions and ending with networks. Finally, a mini-theory based on these findings will be proposed.

Life Purpose and Life Satisfaction

As hypothesized, increasing life purpose was associated with decreasing loneliness. This might suggest that the possession of a life purpose might decrease (or deter) loneliness. The interpretation of the relationship, however, was complicated by the heterogeneity of the PIL test. Instead of measuring life purpose alone, the scale appeared to measure two factors; that is, life satisfaction and life meaning. Of the two factors, the life satisfaction factor was most closely

associated with the measures of loneliness. It may be, then, that previous research both using the PIL test and suggesting strong relationships between life purpose and loneliness might be better construed as giving evidence of a relationship between life satisfaction and loneliness; that is, those individuals who are more lonely (and, thus, are dissatisfied with their relationships) also tend to feel dissatisfied with their lives in general. Although a relationship between life satisfaction and loneliness is of interest in itself, it may tell little about relationships between life purpose and loneliness. This is not to deny, nonetheless, that life meaning and purpose are also measured by the PIL test. Those individuals possessing a sense of meaning and order in themselves and in the world were also less likely to feel lonely. It may be that the possession of meaning serves to make sense of social isolation and thus reduce feelings of loneliness. Alternatively, feeling lonely may cause the world to be perceived as meaninglessness. Certainly, some subtypes of loneliness are marked by feelings of alienation and anomie (Belcher, 1973).

In sum, then, although life purpose and loneliness do appear to be related, the relationship appears to be less clear than anticipated. Implications of this finding for future research will be discussed in a later section.

Coping Skills

Use. Contrary to prediction, the more frequent use of prayer as a coping skill was not associated with less

loneliness. More frequent use of any coping skill, moreover, was not associated with less loneliness. Although this finding runs counter to much current thinking about how individuals reduce loneliness (that is, by coping skills), it is similar to that reported by other researchers (for example, Cutrona, 1982; Russell, Peplau and Cutrona, 1980; Carroll, 1983). Relationships between coping skill use and loneliness have, in general, been either weak or absent.

There may be several reasons for the absence of such a relationship. For example, more frequent use of coping skills and less loneliness may be uncorrelated because retrospective self-reporting of the frequency of use may be less than veridical; that is, individuals may not be aware of how they actually coped with loneliness (Rook and Peplau, 1982). Alternatively, it may be that dimensions of coping skill use, other than frequency, influence the effect of coping skills. Rook et al. (1982), for example, have suggested that certain patterns of coping skills may be counter-productive. For instance, if an individual was both trying to redefine his or her problem (he or she really does have friends even if it does not appear that way) and trying to make new friends, the net effect of these two responses might be to cancel each other out. As a third alternative, the effect of coping skills used in response to loneliness may be so idiosyncratic that any positive effect of a particular skill for an individual may be averaged out in group studies.

None of these explanations, on the other hand, would account for the relationships found in this study between increased coping skill use and increased loneliness; that is, those individuals who, in response to loneliness, more often thought about ways to overcome it and who (if conservatively religious) prayed were also more lonely. There are two alternative explanations for these anomolous findings. It is possible, for example, that those who are more lonely than others tend to think more often (and pray more often if they are conservatively religious) about loneliness in response to the latter than those who are less lonely. It may be that cognitive problem solving and prayer actually share a similar nature (they are, in fact, correlated .258) and are responses to loneliness frequently used by the very lonely. In part, the private nature of these two responses may appeal to many lonely individuals as a ready (if only first) response to loneliness.

As well, it is possible that cognitive problem solving and prayer in response to loneliness cause people to feel even more lonely than they already are. These responses could, for example, serve to remind lonely individuals of their isolation from (human) others. The process could, in fact, be circular. As lonely individuals used these responses due to their ease of use, the individuals might become more lonely as they were reminded of their social unhappiness.

It is clear that the relationship of coping skill use

to loneliness is more complex than it is presently thought to be. Relationships may depend on both the level of loneliness and the particular skill involved.

In summary, then, greater frequency of coping skill use was not associated with less loneliness. Instead, the more frequent use of some skills was associated with more loneliness.

Perceived effectiveness. The perceived effectiveness of prayer as a coping skill was not found to be associated with less loneliness. This finding was again contrary to prediction. It may be, then, that prayer does not necessarily lead to a lessening of a sense of loneliness. Indeed, some Catholic writers (for example, St. John of the Cross) have viewed prayer as, at times, increasing one's sense of isolation and, thereby, producing a "dark night of the soul" (Merton, 1969). Alternatively, it is possible that prayer is perceived to be equally effective (all groups perceived prayer to be at least somewhat helpful) by those who use it regardless of their level of loneliness. Such a finding might be expected from a cognitive dissonance model (Festinger, 1954); that is, those who use a skill will probably view it as effective regardless of its actual efficacy (here doubtful as neither the greater use nor the greater perceived effectiveness of prayer were correlated with less loneliness) simply because they use it. An individual is unlikely to admit to using skills that are ineffective. Whether prayer (or any other coping skill)

actually is effective is a different question from that of perceived effectiveness.

The perceived effectiveness of skills other than prayer was, on the other hand, associated with less loneliness. In particular, those individuals who perceived behavioural problem solving and problem redefinition to be more effective than other individuals also tended to be less lonely as measured by the UCLA scale. Those individuals who perceived self-enhancing behaviours as effective, moreover, also tended to be lonely for shorter periods than those individuals who did not perceive this skill to be effective.

It is unclear as to why the perceived effectiveness of certain skills would be more closely associated with less loneliness than other skills. Some skills such as distraction, cognitive problem solving and prayer may be seen as effective because they are used. Other skills (perhaps those skills with more immediate short- and long-term results) may be seen as effective because they are, in fact, effective. On the other hand, it may be that individuals who are more lonely than others tend to perceive certain skills (particularly ones that may be either more difficult to practice such as meeting new people or ones that may not ring true such as reassuring oneself that one has friends) as ineffective while other less aversive skills are viewed as effective by all who use them regardless of their level of loneliness. For individuals who experience

little loneliness, all skills may appear to be equally effective.

While coping skill effectiveness was associated with loneliness in the anticipated direction, the construct of perceived effectiveness appears to be influenced by variables other than actual effectiveness (at least as measured by decreasing loneliness). Individuals may perceive a skill to be effective in order to reduce cognitive dissonance aroused by the continued use of a skill despite its apparent lack of effect.

Attributions

Perceived controllability. As predicted, individuals who perceived loneliness to be more controllable also tended to be less lonely than those who did not perceive loneliness to be controllable. Perceived controllability was also associated with the perceived effectiveness of coping skills; that is, those who perceived their coping mechanisms to be effective also perceived loneliness to be controllable. Thompson (1981) has, in fact, defined perceived control as the belief that one has responses that can influence the aversiveness of particular events. These findings are similar to that of Carroll (1983) who reported that a decrease in loneliness over a three month period was associated with initial strong optimism for success in overcoming loneliness. Cutrona (1982), likewise, reported that positive expectations for future relationships were associated with decreasing loneliness over time. There are

at least three explanations for such a relationship.

One, perceived controllability may influence loneliness. This may occur in two ways. First, those who perceive loneliness as more controllable may also experience loneliness less intensely as their sense of control reduces the felt aversiveness of loneliness. Thompson (1981) has noted that a sense of control may allow individuals to withstand stress and pain. Second, perceived controllability may influence coping behaviour which then reduces loneliness. Certainly, the concepts of controllability, perceived effectiveness, optimism and positive expectations seem similar to that of self-efficacy as proposed by Bandura (1977). The latter has suggested that expectations of personal efficacy determine whether coping behaviour will be initiated, how much effort will be expended and how long effort will be maintained when obstacles occur (Bandura, 1977). Kelley et al. (1980) have similarly suggested that belief in effective control yields an adaptive advantage by maintaining striving toward goals (in this case, to reduce loneliness). Accordingly, those individuals who believe they can control their loneliness should be more likely to use coping devices which serve to reduce loneliness. Yet, frequency of coping skill use was not found to be related to either perceived controllability or loneliness. While this may be due to difficulties already mentioned in assessing coping skills, the lack of a relationship between coping skill use and controllability may also reflect the

typically weak relationships found between behaviour and measures of broad attitudes (Ajzen et al., 1977). Perceived controllability may, then, affect loneliness by way of coping skills but this study found no evidence of such a relationship.

Alternatively, then, loneliness may influence perceptions of controllability. Kelley et al. (1980) have speculated that individuals are motivated to adapt attributions which are self-enhancing and self-protective. Those who are less lonely, then, may perceive their loneliness as more controllable (regardless of its actual controllability) than those who are more lonely. If loneliness is perceived as controllable, the less lonely may view themselves as successfully managing their loneliness. Those who are more lonely, on the other hand, may view their loneliness as uncontrollable as they may then avoid the frustration of seemingly useless striving.

A third explanation of a relationship between loneliness and perceived controllability is that individuals who are more lonely actually do tend to experience a loneliness which is less controllable (at least for them) than that felt by the less lonely. Such individuals would accurately perceive their loneliness as being out of their hands. Given the aversiveness of loneliness, it is likely that individuals do try to control it. Those who are very lonely, therefore, would be expected to have the least control.

Each of these explanations may have some validity.

Those whose loneliness is less controllable may come to perceive loneliness as uncontrollable and, thus, give up trying to reduce loneliness when coping might be effective. Such individuals would demonstrate a learned helplessness (Seligman, 1968) in the face of loneliness. In order to protect themselves from anticipated frustration, therefore, loneliness would continue to be perceived as uncontrollable.

In summary, then, greater perceived controllability was associated with less loneliness. Causal directions may be reciprocal between these two variables.

Perceived instability. As was hypothesized, greater perceived instability of loneliness over time was associated with less loneliness. As with perceived controllability there are three explanations of such a finding.

First, perceived instability may influence loneliness. Individuals who feel their loneliness is only temporary may be less lonely either because their loneliness then appears less aversive or because they are more likely to initiate responses to bring their loneliness to an end. Conversely, those who feel their loneliness is more stable may then experience it as more aversive and also perhaps not initiate coping responses. The absence of relationships between the frequency of coping skills and perceived instability would seem to make the latter explanation unlikely. A possible causal role for attributions of stability, nonetheless, has been suggested by Carroll (1983). She found that stable

attributions of loneliness at the beginning of a three month period were associated with greater loneliness at the end of this period.

Second, loneliness may influence perceived instability. Those who are more lonely may experience their loneliness as enduring over long periods of time. As support for this view, the intensity of loneliness was found to be strongly associated with the longevity of loneliness; that is, people who perceived themselves to be very lonely at the time of the survey also perceived themselves to have been lonely for long periods of time. The experience of intense loneliness may cause individuals to feel that their loneliness will end only after much pain. Perceptions of stability may reflect, therefore, a despair about one's relationships. Conversely, individuals who are less lonely may be inclined to remain optimistic that their loneliness will not last and that brighter days are ahead. Young (1982) has suggested that the very lonely may, thus, function much like the very depressed individual as described by Beck (1976). The latter has suggested that those who are very depressed tend to structure the world in pessimistic ways (for example, "Nothing will change—there is no relief in sight").

As a third alternative, neither perceived instability nor loneliness may influence each other. Instead, a relationship between greater perceived temporariness of loneliness and less intensity of loneliness may be an accurate reflection of an actual relationship; that is,

individuals who are more lonely than others may tend to be afflicted with more enduring bouts of loneliness and to perceive their situation veridically. Accuracy of perception may be more likely in the case of stability over time than in the case of controllability. The former may involve cognitive processes which are more descriptive and less inferential than those used in the latter.

Again, a combination of these explanations may be most adequate. Accurate perception of instability and less loneliness may lead to expectations of instability and less loneliness which, then, influence each other.

Networks

Social provisions. As hypothesized, those individuals with a greater number of perceived social provisions were also less lonely than those with a smaller number of perceived social provisions. Although those individuals possessing a greater sense of guidance and having more opportunities to nurture others also tended to be less lonely, those individuals, in particular, who felt a sense of attachment and closeness to another person, who felt they had others they could rely on, who felt that their competencies were affirmed by others and who felt that they had friends with whom they were integrated socially were less likely to feel lonely.

Provisions typically associated with lovers, friends, colleagues and friends, thus, were more predictive of the level of loneliness for this sample than provisions typically

associated with teachers (and perhaps parents) and offspring. These results are somewhat at variance with previous results. First, a sense of attachment has not previously been found to be a strong predictor of loneliness in first year university students (Cutrona, 1982; Russell et al., 1982). Cutrona (1982) has suggested that attachment may be a more important predictor of the level of loneliness for older students while provisions associated with friends are more closely associated with loneliness for younger students. The predictive power of certain provisions has, thus, been linked to particular developmental periods. Russell et al. (1982) has provided evidence for this speculation; that is, a sense of attachment was more closely associated with the level of loneliness for older individuals than for younger individuals. Yet this study, despite using first year students as subjects, found a sense of attachment to be the most important predictor of the level of loneliness.

Second, Cutrona (1982) previously found guidance to be a strong predictor of the level of loneliness. Although associated with loneliness in this study, a sense of guidance was more weakly associated than other provisions.

Differences in results may have been due to potential differences in samples. In order to increase the probability of stable relationships, the study was restricted to those who were from the Winnipeg area. Individuals in this sample (in contrast to those who might have moved from a home town some distance from the campus) who had already possessed

girl- and boyfriends might be likely to continue these relationships. A sense of attachment based on long-term romantic relationships may be more predictive of less loneliness than a sense of attachment based on relationships of a shorter duration. It may be, then, that the predictive ability of provisions such as opportunities for nurturance is dependent on developmental stages. The predictive ability of provisions such as attachment, however, may be less dependent on developmental stages and may be, instead, more dependent on the length of time that such relationships have been in existence.

Similarly, subject differences may also account for the weaker role of guidance found in this study. It may be that a sense of guidance is a particularly important predictor of loneliness when individuals are confronted with much novelty (for example, a new school and a new city) but is less predictive when moving to a new school (which they may have visited previously and where siblings and friends may already have attended) in a well-known city. Again, contextual variables may be more potent determinants of the predictive ability of particular provisions than that of developmental periods.

Despite these differences, this study found, as has previous research, that provisions associated with friends (social integration) and colleagues (reassurance of worth) were strongly predictive of less loneliness while opportunities for nurturance were weakly associated with

loneliness.

In sum, then, social provisions was found to be strongly associated with less loneliness. Although particular provisions were themselves not completely associated with loneliness in previously determined ways, these differences may be due to differences in the samples used to study loneliness. In particular, the degree of continuity experienced by the subjects from previous settings to the new setting may determine the role of social provisions in predicting loneliness. As in previous research, nonetheless, the provisions associated with friendships were found to be strong predictors of loneliness.

Density and number. As hypothesized, those individuals with networks in which more people knew each other were also less lonely. This might suggest that such relationships are particularly efficacious in preventing loneliness (perhaps by providing a strong support base). Density and social provisions were, in fact, correlated with the former being particularly associated with a sense of reliable alliance, a sense of attachment and a sense of social integration.

Although not hypothesized, the size of the network was also associated with level of loneliness; that is, individuals indicating that they had more people who they considered to be friends (both biologically related and those not related) also tended to be less lonely. This finding is similar to that of previous research relating to size of networks to mental health (Sokolovsky, Cohen, Berger

and Greger, 1978; Pattison et al., 1975). As well, Cutrona (1982) found that increases in network size over time were predictive of decreases in loneliness over time. It is possible that larger networks are more effective at determining loneliness as there are a greater number of resources available. The number of individuals in a network was, in fact, found to be correlated with social provisions overall and was significantly associated with each of the six provisions.

Network size was a significantly stronger predictor of less loneliness than density. The greater predictiveness of network size was also shown in its inclusion over network density in the stepwise regressions. It would appear, then, that the possession of larger networks is more predictive of (and perhaps responsible for) less loneliness than is the possession of more dense networks. Alternatively, being more lonely may cause individuals to more readily feel that they have few friends (whether they do or not) than to feel that their relationships lack density.

In sum, then, relationship variables were important predictors of loneliness. Social provisions were, in particular, strongly associated with loneliness. The theoretical implications of these findings in conjunction with those findings already examined will be discussed in the next section.

A Mini-theory

This section will explore how individuals come to label

themselves as lonely or more specifically how they come to see their relationships as unsatisfactory. A number of theorists (for example, Perlman and Peplau, 1982; Russell, Steffen and Salih, 1981) have focused on the determinants of cognitive cues of loneliness. These theorists have speculated that individuals see themselves as lonely when a descrepancy is perceived between desired and obtained levels of social interaction. Expectations for relationships have been suggested to be based on what individuals have previously experienced (past social relationships), on how important particular relationships are to individuals and on what other people are perceived as experiencing (social comparisons). Those who see themselves as having less satisfactory (or simply fewer) relationships (particularly highly significant relationships) than they have either experienced in the past or that others around them are experiencing are likely to be more lonely than individuals who do not perceive such discrepancies. Support for the discrepancy model has, however, only been moderate. Paloutzian, Janigan and Van Mouwerik (1982), for example, reported that although the gap between desired and obtained levels of social contact was significantly correlated with loneliness felt during a holiday, the correlation was only .35.

Rather than focusing on cognitive cues, then, some researchers have suggested that individuals use a variety of cues to label themselves as lonely. Peplau, Miceli and

Morasch (1982), for example, have stated that affective cues (unhappiness), behavioural cues (low or unsatisfactory levels of contact, disruptions of relationships) as well as cognitive cues (the desire for better relationships, the belief that better or more relationships would be beneficial) all serve to indicate to an individual that he or she is lonely.

Although this approach is probably superior to a focus on cognitive cues alone, there appear to be two problems yet remaining. First, theorizing about the self-labeling loneliness does not appear to have been sufficiently linked up with other theories of self-perception which already exist in the literature. Second, there appear to have been few attempts to establish priority among cues; that is, whether some cues are more informative than others. The remainder of this section will be devoted to correcting these defects.

In his theory of self-perception, Bem (1972) suggested that individuals come to be aware of their internal states such as their attitudes and emotions by inferring them from observations both of their own behaviour and of the context in which the behaviour occurs. Accordingly, this study would suggest particular sources of information. First, relationships, themselves, provide much information about one's level of loneliness. Those who perceive themselves as having relationships characterized by positive characteristics (social provisions) may infer relationship satisfaction. Those who perceive themselves as

having many friends may also infer that they are satisfied with their relationships. These sources of information would easily fit into a discrepancy model of loneliness. There are, however, other sources of information that might require a modification of a discrepancy model. Lonely individuals appear, for example, to also infer loneliness on the basis of how often they need to think about ways to overcome loneliness. As well, individuals may infer loneliness on the basis of how successful they are at employing behavioural strategies to overcome it. Those who are less successful may infer greater loneliness. In addition, individuals may infer levels of loneliness based on characteristics of loneliness itself. Those who perceive loneliness to last a long time may infer that they are very lonely. In general, then, three broad areas may serve as sources of information which aid individuals in deciding on their level of loneliness; that is, their relationships (positive characteristics and the number of friends), their own coping behaviour (how much they have to scheme against loneliness and how effective they are in combatting it directly) and their loneliness (how long it lasts). This is not to deny that levels of loneliness may also serve as information to infer the nature of these three areas.

Although self-perception theory provides a way of making sense of the results of this study, it does not suggest a method of priorizing classes of information (that is, which sources are perceived as most dependable in

inferring loneliness). Self-efficacy theory, on the other hand, does suggest that certain types of information are more dependable sources of information than other types of information (Bandura, 1977). Bandura (1977), for example has indicated that performance accomplishments (actually carrying out a feared task) are a more dependable source of information about one's ability to later fulfill the task than is either watching others do the task, imagining that one is doing it or being told that one can do it. If such a model is applied to the results of this study, it would appear that perceptions of relationships are viewed as particularly dependable sources of information about the level of satisfaction felt in relationships. Sources of information which are more distant from the actual characteristics of relationships (how much effort is expended cognitively, how much success is met in overcoming loneliness by behavioural means, how long loneliness lasts) may be less dependable sources of information.

This section has suggested that views on how individuals come to label themselves as lonely are presently inadequate. A mini-theory based both on Bem's self-perception theory and Bandura's self-efficacy theory was proposed as being a more adequate way of understanding how individuals learn to see themselves as having unsatisfactory relationships. As relationships between loneliness and mediating variables were discussed in this section with no mention of possible antecedents of mediating variables, there was little mention

of religiosity. The next section will now turn to possible influences of religiosity on loneliness.

Religiosity and Loneliness

The three groups did not differ significantly in loneliness as measured by either the UCLA scale, the self-rating or the measure of chronicity. Indeed, the only difference was by sex on the UCLA scale and this difference (males being more lonely than females) was in the direction previously reported in the literature (See Borys, Perlman and Goldenberg, 1982 for a review of gender differences in loneliness). Although group differences had not been predicted, they would not have been unexpected. As had been surveyed, both the religious popular press and some empirical literature has suggested that religious (particularly conservatively religious) people should be less lonely than others. Yet this was not found to be the case. It might be argued, then, that an inclusion of a religiosity component in the study has not led to a fuller understanding of loneliness; that is, that no new information was gained by examining possible religious antecedents to mediators of loneliness.

The inclusion of a religiosity component has, however, added to an understanding of loneliness in three ways. First, although religiosity was not found to be correlated with loneliness directly, religiosity was found to be correlated with antecedents of loneliness. Second, religious people were found to think about and cope with loneliness in

ways which were more than merely additional religious modes; that is, in addition to religiosity-toned attributions and coping skills, religious people exhibited distinct patterns of nonreligious attributions and coping skills. Third, although predictors of loneliness found in previous research, not documenting the extent of religiosity, also tended to hold for religious people, these predictors tended not to be as strong for the latter; that is, relationships with loneliness and its potential mediators were stronger for the nonreligious than for the religious (specifically the conservative religious). Despite, then, religiosity not influencing loneliness directly, loneliness and religiosity were found to be inter-related. The remainder of this section will explore each of these contributions more fully.

Mediators of Loneliness

Life purpose (and life satisfaction), attributions, coping skills and relationship variables were all found to be somewhat associated with less loneliness. Although not all of these variables were found to be also associated with religiosity variables, there were inter-relationships between the two classes of variables. This section will examine the nature of these relationships with both life purpose and relationship variables. Coping skills and attributions will be addressed in the next section.

Life purpose and life satisfaction. Greater life purpose was significantly associated with less loneliness. Life purpose was also associated with aspects of

religiosity. Similar to previous research, the conservative group had significantly higher scores on the PIL test than either of the other two groups. While the conservative group scored at the seventy-fourth percentile, the nonconservative and nonreligious groups scored at the forty-fifth percentile. Again similar to previous research (Paloutzian, 1981), no one subset of items appeared to be responsible for this difference. Instead, as seen in Appendix D, the conservative group scored significantly higher on items loading on both factors. Conservative individuals, therefore, appear to feel more satisfaction and meaning in their lives.

It is difficult to determine the direction of causal influence. Although it seems unlikely that greater satisfaction and meaning would cause an individual to seek a conservative orientation, although those with high need for meaning may seek out churches which provide strongly structured world views (Argyle and Beit-Hallahmi, 1975), early childhood experiences could account for both. Weigert and Thomas (1971), for example, reported that high attendance and satisfaction with church by adolescents was associated with high degrees of emotional support and control at home. Such an environment might also be expected to produce individuals possessing a strong sense of life satisfaction and meaning. Indeed, adults reporting greater family togetherness and stronger parent-child relationships when they were growing up have been found to be less lonely and to feel more satisfaction with their

lives than those reporting less satisfying early relationships (Paloutzian et al., 1982). Strong early relationships (particularly those in religious homes) may lead, therefore, both to strong adult religiosity and to a strong sense of life purpose and satisfaction.

Alternatively, conservative religiosity may cause individuals to feel greater satisfaction and meaning in their lives. Schweiker (1969) has speculated that religious belief provides a superordinate meaning system which, in turn, endows everyday activities with greater satisfaction. Lower anxiety about death, for example, has been found to be associated with greater conservative religiousness (more salient beliefs, greater church attendance, literal interpretation of the Bible) as reported by Templer (1972).

Religiosity may influence life purpose and satisfaction. There are, however, two qualifications. First, only certain types of religiosity appear to be associated with more purpose and satisfaction since nonconservative believers did not differ significantly from the nonreligious group. Conservative believers, alone, exhibited more purpose and satisfaction. Second, certain aspects of conservative religiosity appear to be more closely related to life purpose and satisfaction than other aspects; that is, although the conservative group differed in a number of religiosity-related ways from the nonconservative group (more conservative beliefs, more salient beliefs, more rigid beliefs, more satisfying and frequent prayer and more

involvement in religious groups), a stepwise regression indicated that the degree of religious group involvement and the sureness felt in holding beliefs were most closely associated with more life purpose and satisfaction. In particular, greater involvement in the church was most strongly associated with greater life purpose and satisfaction. The remaining variables (while associated with the PIL test) contributed little beyond the variance accounted for by religious group involvement. It may be, then, that it was the involvement per se that produced greater satisfaction and purpose. O'Reilly and Pembroke (1956) similarly found that older people who attended church more frequently were also more happy than those who attended less frequently.

A number of writers have suggested that involvement in groups aids adjustment. Schweiker (1969), for example, speculated that participation in religious organizations serves as a defense against the excessive fluidity of modern society by providing a sense of belonging, identity and routine. Totman (1979), as well, asserted that involvement with other people, in which a high degree of commitment is expressed, contributes to resistance against both physical and mental disease. Life satisfaction, in fact, has been partially defined as involvement with others (Neugarten, Havighurst and Tobin, 1961).

Although greater religious involvement may lead to greater satisfaction with life, belief content may also

influence satisfaction and purpose. Ellison et al. (1981), for example, reported that those individuals who emphasized doctrinal beliefs focusing on God's unconditional love, and God's valuing of the individual tended to feel greater spiritual well-being and greater self-esteem. Such beliefs are most often held by the conservatively religious (Ellison et al., 1981). Rather than religious group involvement or belief content influencing life purpose and satisfaction alone, it is most likely that religious conservatism is a constellation of variables which influences life purpose and satisfaction. Religious group involvement, nonetheless, appears to be most strongly related to these variables in this data set.

Three further points need to be made about these findings. First, involvement in nonreligious groups may also influence satisfaction and purpose. There was an insufficient number of subjects involved in other groups to determine if this was, in fact, the case. It may not be the religiousness per se of the involvement that influences satisfaction and meaning but only the involvement. Second, relationships between the PIL test and religious variables tended not to be strong but only moderate. It is likely, then, that there are many sources of (and many variables influencing) meaning and satisfaction with religious faith being only one possible source of such meaning and satisfaction.

Third, all aspects of religiosity were related to life

purpose except for dogmatism. Although it had been predicted that rigidity of beliefs would be associated with greater life purpose, only the sureness with which beliefs were held was found to be associated with greater life purpose and satisfaction. Feeling more sure of one's beliefs may give greater satisfaction and meaning to the world. Holding beliefs dogmatically, on the other hand, seems to contribute little to greater life satisfaction and purpose. It may be that although dogmatism may provide structure that other aspects of dogmatism mitigate against greater life satisfaction and purpose. Dogmatism has been found, for example, to be associated with greater emotionality (Swindell et al., 1970), pessimism, self-dissatisfaction, dissatisfaction with others (Byrne, Blaylock and Goldberg, 1966), anxiety (Rokeach, 1960) and less personal adjustment and interpersonal skill (Gilmore, 1969). Paloutzian, Jackson and Crandall (1978) similarly reported that dogmatism and PIL scores were unrelated.

In general, greater life purpose and satisfaction were found to be associated with aspects of conservative belief. Specifically, involvement in religious groups may increase one's sense of meaning and personal happiness. There are, however, some qualifications of this statement.

Network variables. Greater size and density of networks were found to be associated with less loneliness. In particular, greater supplies of social provisions were found to be strongly associated with less loneliness.

Although network variables were less consistently associated with religiosity-related antecedent variables, the latter was found to be associated with qualitative aspects of relationships (that is, with social provisions). Those with networks made up of many religious individuals also tended to have more social provisions overall, more opportunities for nurturance, and (although not significant) a greater sense of attachment, reliable alliance and reassurance of worth. It is unclear as to why network religiousness might be associated with more social provisions. It is possible, for example, that networks composed of religious people tend to be networks made up of caring individuals. Certainly, there appear to be more perceived opportunities for caring in highly religious networks. If there are more opportunities to nurture others in highly religious networks, it is likely that mutual caring occurs, it being unlikely that the majority of the people could be caring for others without receiving some nurturing themselves.

Some indication of how network religiousness and social provisions might be related was given by religious correlates of network religiousness. As with life purpose and satisfaction, involvement in religious groups was a strong predictor of network religiousness. Those who are highly involved in religious activities may develop religious friends (although undoubtedly having religious friends also leads one to participate in religious activities and

organizations). Such activities may provide opportunities for serving others perhaps through teaching or visiting ill church members. Some support for this view was found in the study in that greater religious involvement was associated with more opportunities for nurturance (r = .273). On the other hand, greater religious group involvement may not lead to greater caring but simply to more frequent contact. Greater frequency of contact may lead to relationships being valued more highly.

Network religiousness was also found to be associated with greater conservative belief content. Conservative believers tended to have more highly religious networks than nonconservative believers regardless of denominational preference. Such individuals may have beliefs that foster the caring and affirming of others which, apart from either more opportunities for service or greater frequency of contact through greater religious group involvement, lead to more supportive relationships. Ellison et al. (1981) reported that doctrinal beliefs typically held by conservative believers such as those emphasizing a sense of personal acceptance and communion with God and those emphasizing the value of the church body were associated with greater self-esteem and a greater sense of life satisfaction and direction. In this study, the conservative group tended to perceive more social provisions overall, a greater sense of guidance and of reliable alliance and more opportunities for nurturance in their relationships than the other two

groups. Belief content may, then, directly contribute to more supportive relationships.

Another explanation of the relationship between network religiousness and social provisions would suggest that network religiousness influences quantitative aspects of relationships such as size and density which, in turn, influence perceived social provisions. It has been predicted, for example, that conservative believers would be more dogmatic than either nonconservative believers or the nonreligious (which they were) and that greater dogmatism would lead to greater ethnocentricism. Ethnocentric individuals were expected to develop close-knit highly inter-related relationships; that is, dense relationships. These relationships would serve as a defense against a potentially hostile and certainly different world. Yet, the relationships of conservative believers were no more dense than the relationships of others.

There are two explanations of this finding. Having networks in which the majority of its members are religious may provide sufficient support for beliefs without these members also knowing each other more than friends of nonreligious people know each other. Density, therefore, may be largely unrelated to support for religious beliefs. Alternatively, the pool of potential religious friends may be sufficiently large that it is possible to develop many religious friends without these friends knowing each other any more than the friends of nonreligious or nonconservative

individuals know each other. Religious individuals (at least those of recognized denominations in contrast to highly sectarian groups such as cults) may have relationships which are no more ingrown than those of other individuals.

Although religiosity-related variables were unrelated to network density, there was some indication that the networks of the conservatively religious may be larger than those of others. In particular, the conservatively religious tended to name more relatives as friends than other groups. The conservatively religious either may have more relatives to choose from (that is, they have larger families) or have emotionally closer families than others. Regardless of the reason for naming more family members as friends, doing so may reflect closer family relationships amongst conservative believers than those held by other individuals. Such relationships may be enriched with social provisions.

In sum, then, those who have highly religious networks also tended to have more social provisions. Such individuals may have relationships marked by greater caring and supportiveness. Both greater contact with religious people and the possession of beliefs emphasizing mutual nurturing may lead to more supportive relationships. In addition, however, religious networks may tend to be larger (r = .15). Having many friends (particularly friends who are also family members) may cause individuals to have a positive view of

their relationships.

Coping Skills and Attributions

Religious individuals appear to cope with and think about loneliness in ways that differ from nonreligious individuals. This section will examine these differences.

Coping skill use. The frequency of coping skill use was largely unassociated with loneliness. In fact, only the greater frequency of cognitive problem solving skills was significantly associated with more loneliness. This was in an unanticipated direction. It may be, then, that coping skill use does decrease loneliness but this was not generally found in this study.

Regardless of the possible lack of effect of coping skills, religious people do tend to use different strategies to cope with loneliness than do nonreligious people. The conservative group was found to more frequently use prayer, in particular, and religious skills, in general, as a response to loneliness than the nonconservative group which, in turn, used these skills more often than the nonreligious group. It seems likely that those who are more religious in a number of ways (as the conservative group is) tend to use religious ways of responding to problems. Those, for example, who in general pray frequently and are satisfied with their prayer life were found to pray more often in response to loneliness than those who prayed less frequently and who were less satisfied with their prayer life. Being religious seems to increase the probability of religious coping.

The use of religious coping skills, on the other hand, also increased the probability of coping which does not appear to be overtly religious. For example, those frequently using religious coping skills also tended to frequently use problem redefinition skills (r = .231) and cognitive problem solving (r = .185; not significant at the conservative level of significance adopted in the study). More specifically, those who frequently used prayer as a coping skill tended to also frequently use problem redefinition (r = .160; not significant) and cognitive problem solving (r = .254). Both problem redefinition (persuading oneself that one has no reason to be socially dissatisfied) and cognitive problem solving (trying to figure out ways to overcome loneliness) appear to be cognitive, rather than behavioural, in nature. Many religious skills (for example, prayer, meditation, Bible study) also appear to be highly cognitive. It may be, then, that those who use religious skills tend to use cognitively oriented coping skills in general.

In sum, then, although religious individuals tend to cope with loneliness with religious skills as well as with all the other skills used by the nonreligious, religious coping may be a subset of a larger class of coping, that is, cognitively-oriented coping.

Coping skill effectiveness. Unlike coping skill use, the perceived effectiveness of coping skills was consistently associated with less loneliness. Those

individuals who perceived behavioural problem solving and problem redefinition skills to be effective also tended to be less lonely. The perceived effectiveness of religious skills, however, was not found to be associated with less loneliness.

Despite this apparent lack of effect, individuals using religious skills tended to perceive them as effective (r = .543). Conservative individuals, who tend to use religious skills most frequently, perceived these skills to be significantly more effective than did the nonconservative group who perceived them to be significantly more effective than did the nonreligious group. It is likely that individuals who highly value their religious outlook on life tend to perceive religious coping as being a positive factor in their lives. Again, however, religious coping was not completely unrelated to other forms of coping; that is, religious individuals tended to perceive coping skills seemingly unrelated to religion to be more effective than did nonreligious individuals. Consistent with the view that religious individuals are attracted to cognitive modes of coping, both the nonconservative and the conservative groups perceived problem redefinition to be significantly more effective than did the nonreligious group. Moreover, those individuals who perceived religious skills to be effective also tended to view problem redefinition (r = .214) and cognitive problem solving (r = .217) to be effective. These correlations must be viewed as suggestive only as they were

not significant at the conservative level of significance used in the study.

In sum, religious individuals tended to cope with loneliness with religious skills which they perceived to be effective. Religious coping did not appear, however, to take place in a vacuum. Instead, those who coped with religiosity-related skills also tended to use other cognitively oriented skills. This would suggest that religious coping may be part of a more general cognitively-oriented gestalt.

Attributions. Those individuals perceiving loneliness to be more controllable as well as more temporary also tended to be less lonely. Those individuals attributing such characteristics to loneliness, however, were not more likely to view loneliness as having supernatural causes.

It is unclear as to why these dimensions may be unrelated. It may be that supernatural causes are associated with controllability and instability in unexpected ways. For example, some individuals may feel that if loneliness is caused by God that one has no control. Instead, the individual must submit to the loneliness. As evidence for this view, the conservative group was least likely to feel that they were in control of their own destiny (as measured by an item in the PIL test) in contrast to the two other groups. Given this reasoning, one would have expected greater perceived controllability to be associated with weaker attributions to supernatural causes.

Yet this was not found to be the case.

Alternatively then, it may be that a lack of relationship between the dimensions is a reflection of issues surrounding attribution theory in general. For example, the various attributional dimensions may be relatively independent and compartmentalized. It is also possible that individuals may not even consider the causes of loneliness until they are asked about them (Kelley et al., 1980). Religious individuals, thus, may agree with statements asserting that supernatural forces may be responsible for loneliness without these individuals actually viewing loneliness as having supernatural causes in their day-to-day lives. Attributions of supernatural cause which are gained in this manner may have little relationship to how loneliness is perceived.

Although the hypothesized relationships between attributions of controllability and instability with supernatural causes were not corroborated, religious people (particularly conservatively religious people) did tend to structure loneliness in ways that differ from nonreligious people. In particular, those individuals who feel that their religious beliefs are important to them were the most likely to structure the world religiously; that is, that loneliness may have supernatural causes (even if it has secondary natural causes).

Coping and cognitions. Religious people tend to behave towards and think about loneliness in religious ways. Yet

these religious skills and cognitions were not divorced from other skills and thoughts. For example, those individuals using religious skills and perceiving these to be effective not only perceived loneliness as having supernatural causes and that turning to God for help was a sensible solution to loneliness but, in addition, felt that trying to change either the situation or oneself were less advisable solutions to loneliness than those not using religious skills. In particular, the conservative group was significantly less likely than the other two groups to perceive changing oneself or the situation as the best responses to loneliness. Believing that God or Satan are responsible for loneliness, then, may have consequences for how potential solutions are viewed. Appeals to God through prayer may be viewed as being most efficacious by religious individuals while changing natural sources of loneliness (oneself or the situation) may be seen as less so.

Revisions of the Mini-theory

Religiosity was found to be associated with a number of corroborated correlates of loneliness; that is, life purpose and satisfaction, social provisions and the perceived effectiveness of problem redefinition. In addition, religious people were found to think about and respond to loneliness in distinctive ways that include both religiosity-related and nonreligiosity-related cognitions and behaviours. Yet religiosity was not directly related to loneliness. This last section will explore possible causes of this discrepancy

by again discussing an information theory of loneliness.

Relationships between loneliness and mediating variables were not completely consistent in each group. For example, life purpose was strongly related to less loneliness in both the nonconservative and nonreligious groups but was not significantly related to loneliness in the conservative group. In general, moreover, relationships between loneliness and mediating variables were less strong in the conservative group than in the other two groups. This lack of consistency may be due to different groups having different sources of information (or at least giving different emphases to the same sources of information) which influences how individuals in these groups come to view their relationships as unsatisfactory. In order to illustrate this viewpoint, relationships with loneliness will be discussed by group.

Nonreligious group. More social provisions overall and more of each provision, greater network size and density, more purpose and satisfaction in life, greater perceived effectiveness of behavioural problem solving and problem redefinition, greater perceived controllability and instability of loneliness and less frequent use of cognitive problem solving were all found to be associated with less loneliness. Correlations ranged from -.796 with social provisions and -.320 with density to .320 with cognitive problem solving. Relationships found with all the subjects, thus, appeared to be enhanced in the nonreligious group.

Past research was most accurate, therefore, in predicting how a nonreligious group might behave.

The nonreligious group may, then, have many sources of information on which to base self-descriptions of loneliness. In particular, qualitative aspects of relationships (increased social provisions), aspects of loneliness (its instability over time) and aspects of one's own behaviour (how often one has to think about ways to overcome loneliness) may be potent sources of information on which nonreligious people form estimates of the intensity of their loneliness (See Table 22).

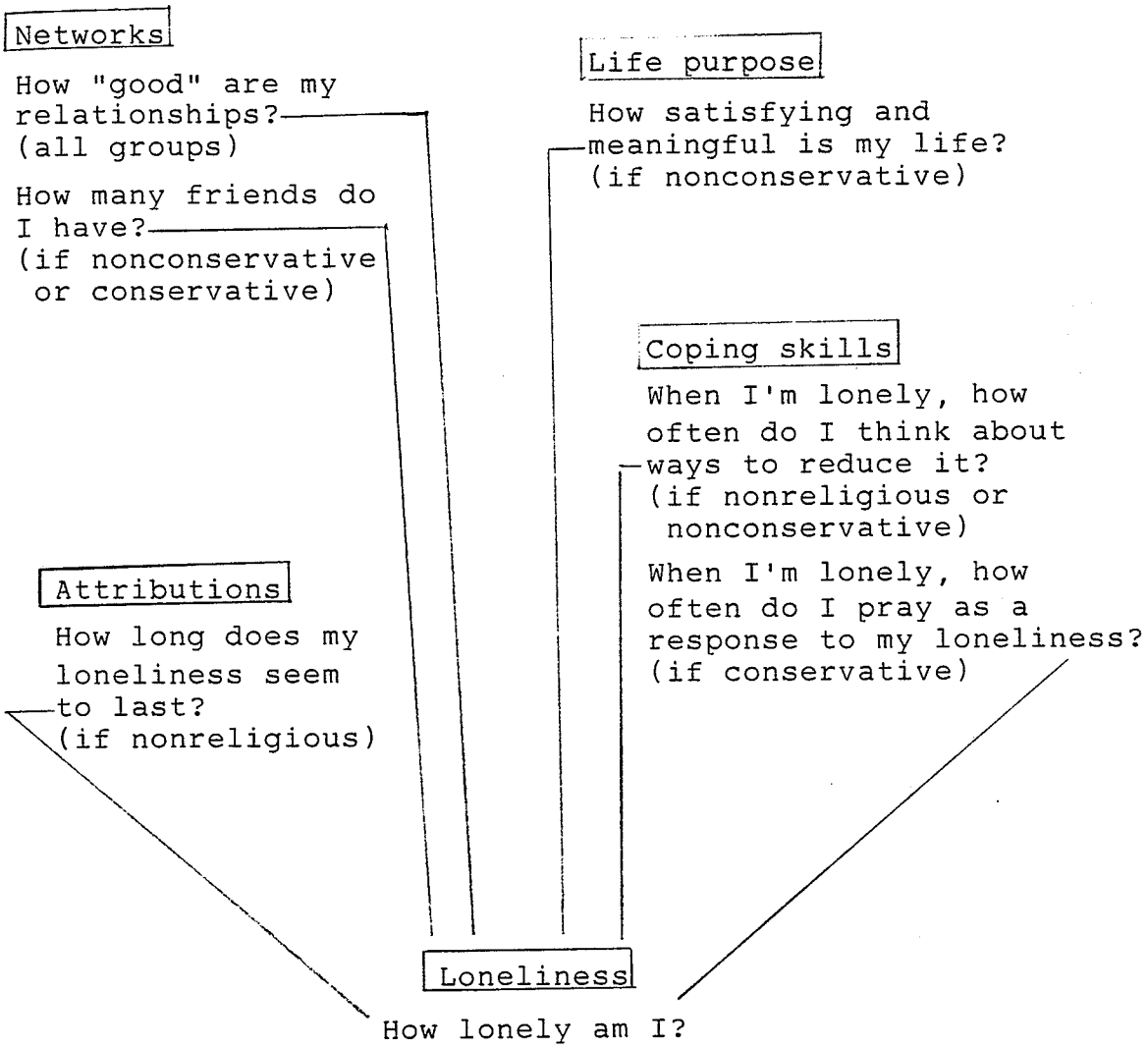
Insert Table 22 about here.

Life purpose and satisfaction, however, may not have contributed more information about loneliness beyond that already provided by aspects of relationships, loneliness and coping behaviour.

Nonconservative group. More social provisions overall and more of each provision, larger networks, more life purpose and satisfaction, greater perceived instability of loneliness and less frequent cognitive problem solving were all significantly associated with less loneliness in the nonconservative group. Correlations ranged from -.776 with social provisions and -.031 with perceived controllability to .419 with cognitive problem solving. Thus, while many relationships held for the nonconservative group, fewer

Table 22

Possible Sources of Information Used by Each Group in Making Decisions about One's Level of Loneliness



relationships held in this group than for the nonreligious group.

Nonconservative religious people, therefore, may have fewer sources of information on which to base self-descriptions of loneliness. In addition, they may give different emphases to different sources of information. For example, although qualitative and quantitative aspects of relationships (social provisions and network size) and aspects of one's behaviour (how frequently one has to cognitively problem solve to reduce loneliness) may have been particularly potent sources of information, the nonconservative group also appeared to gain information from their sense of life purpose and satisfaction.

It is not clear as to why these variables may be more informative for the nonconservative group than for the other two groups. It is possible, for example, that for the nonreligious that a sense of life purpose and satisfaction may be a byproduct of their relationships; that is, greater satisfaction with life may be a reflection of greater satisfaction with relationships. For nonconservative religious individuals, on the other hand, life and relationship satisfaction may be more causally related. For example, if nonconservative religious people view their beliefs as being largely focused on how they should behave with others, they may draw their sense of meaning from the perceived nature of their relationships. Davidson (1972) has suggested that mainline denominations moderately

emphasize both vertical (those beliefs which define the nature of the supernatural and emphasize one's relationship to the supernatural without reference to other people) and horizontal beliefs (those beliefs which emphasize relationships with people). The nonconservative individual, then, may be more likely to consciously view his or her relationships as important determinants of life satisfaction. Their meaning, in fact, may be viewed as being found in their relationships with others. A greater sense of life satisfaction and meaning may provide information suggesting that relationships are satisfactory.

In sum, then, as seen in Table 22, the nonconservative religious individual may focus on similar aspects of relationships to that of nonreligious individuals but, in addition, gain extra information from their sense of life satisfaction and purpose. Religious values which emphasize the relationship of life meaning and satisfaction to one's relationships may be responsible for the greater role of these variables for this group.

Conservative group. Social provisions overall and more of each provision (except for guidance and opportunities for nurturance) and greater network size were significantly associated with less loneliness in this group. Correlations ranged from -.686 with a sense of attachment to -.051 with problem redefinition effectiveness to .149 with the frequency of cognitive problem solving. Relationships with loneliness were, thus, much reduced in the conservative group. Past

research was found to be least accurate in predicting how the conservative group would behave in contrast to predictions for the other two groups. Nearly half as much variance in loneliness scores was accounted for by the predictors in the stepwise regressions for conservative group than was accounted for by the same predictors for the other two groups.

One explanation for this lack of predictability could be restricted variability in the scores of the conservative group. The latter did not tend, however, to exhibit less variability than the other two groups.

Alternatively, an information theory view of the lower predictability of the conservative group would suggest that such individuals base their analyses of their relationships on variables other than those examined in this study. Some corroboration of this viewpoint was given by the stepwise regression for this group. In addition to qualitative and quantitative aspects of relationships, the greater use of prayer also predicted greater loneliness. Conservative individuals, therefore, may be more likely to draw on religious variables (for example, how often they pray about loneliness) to indicate their degree of satisfaction with their relationships (See Table 22).

There may, however, be other religious variables not included in this study which would predict loneliness for the conservative group. There are at least two possibilities. First, specific doctrinal beliefs about God may influence

how conservative individuals view their relationships. For example, believing that God accepts one and that God's evaluation is more important than human evaluation may mediate the influence of other variables on loneliness. Conservative individuals may, therefore, feel somewhat dissatisfied with their relationships but not feel lonely because they tell themselves that their relationship with God is more important. As such beliefs have been found to be more common among conservative believers than among nonconservative believers (Ellison et al., 1981), they may influence the loneliness of such believers.

The second possibility is related to the first. Particular doctrinal beliefs have been found to be closely associated with one's sense of spiritual well-being. Specifically, beliefs held by conservative individuals may be associated with greater religious well-being (a sense of satisfaction with one's relationship with God). Ellison et al. (1981) have found this to be the case. It may be, then, that even though the conservatively religious may be dissatisfied with their relationships, that a sense of satisfaction with their divine relationships may serve to alleviate loneliness. Thus, it may not be the beliefs themselves but the sense of religious well-being that is a potent source of information for the conservative believer when labeling him or herself as lonely. Some evidence has been found for this view in that religious well-being has been found to be inversely associated with loneliness

(Paloutzian et al., 1982).

In sum, then, nonreligious variables were less predictive of loneliness in the conservative group than in either of the other two groups; yet neither were the religious variables examined in this study predictive of loneliness for this group. It may be, then, that religious variables such as particular doctrinal beliefs or religious well-being influence the perception of loneliness by the conservatively religious. Such individuals may draw on sources of information which differ both in emphasis and nature from those used by either the nonreligious or the nonconservative religious. Although it is true, therefore, that religious people were neither no less nor more lonely than others in this data set, loneliness for the religious individual may be influenced by a unique set of variables. It may be, then, that common stereotypes of the conservatively religious are overly simplistic.

Implications of the Study

This study has implications for theory, research and clinical practice. Each of these areas is reviewed below.

Implications for Theory

Information processing and priorizing. The main contribution of this study to theory has been the emphasis on a self-perception model of loneliness. Specifically,

aspects of relationships (both qualitative and quantitative), aspects of one's own behaviour (the frequency of coping skill use, the perceived effectiveness of one's coping behaviour) and aspects of loneliness (its instability over time) may be potent sources of information for the individual when determining the intensity of his or her loneliness. This study, then, has drawn from Bem's theory of self-perception. Two qualifications to this theory, however, were added.

First, this study suggested individuals may priorize information much in the same way that Bandura (1977) suggested that individuals rely on some sources of information more heavily than on other sources when forming views of their abilities. For example, perceived aspects of relationships may be the most potent sources of information about loneliness while aspects of one's own behaviour and of loneliness itself may be less informative.

Second, both the sources of information and the priorizing of these sources may interact with the nature of one's personal belief structures. This interaction was shown primarily in the weakening of various predictors of loneliness in the religious groups. The beliefs of individuals may influence what sorts of data are most informative about one's loneliness.

In sum, then, this study has suggested that theorizing about loneliness could be profitably turned to the interaction of personal belief structures with the

priorizing of various sources of information involved in the self-labeling of loneliness.

Implications for Research

This study has a number of implications for the study of the self-perception of loneliness, for the study of religiosity and social loneliness, for the study of religiosity and existential loneliness, for the study of religiosity and aloneness, for the issues of generalizability and replication and for the need for different measures of life purpose and life satisfaction.

Self-perception of loneliness. A self-perception model of loneliness was presented as one way of making sense of the results of this study. A number of questions about this theory, however remain that could be explored in further research. For example, it is possible that individuals base self-descriptions of loneliness on information sources other than those examined here. It might be useful, therefore, to initially conduct interviews asking individuals how they come to feel they are lonely. It would be important for them to indicate the weight of each source of information in making this decision. A second study might present stories of lonely individuals (without labeling them as such) who are experiencing a number of difficulties such as having few friends or being depressed. Subjects would be asked to rate the loneliness of the protagonists and to indicate which variables influenced their decisions. They would then be asked to indicate to

what degree each variable influenced them. After an interference task, subjects could be again asked to indicate which variables were most important. It seems likely that particularly informative variables would be recalled over less informative variables.

In sum, then, research on information processing and priorizing of loneliness information would serve to test out the views presented in this study.

Religiosity and social loneliness. This study did not find differences in socially-related loneliness between religious and nonreligious groups. It was found, nonetheless, that religiosity did interact with both possible antecedents of loneliness and with cognitions and behaviours directed towards loneliness. It was found, moreover, that the loneliness of the conservative religious group was less predictable on the basis of the variables included in this study. Three directions for the research of the interaction of religiosity and social loneliness are, thus, suggested by this study.

First, more research on the antecedents of loneliness (particularly research more firmly establishing causal directions) may be helpful in determining what role, if any, that religiosity plays in influencing loneliness. In particular, research on the influence of religious group involvement on antecedents of loneliness may prove fruitful. It may be helpful to further explore how people come to attend a particular church or denomination; that is,

whether the latter is a family or ethic traditional preference or whether a choice is made as an adult to attend a previously unknown church. It is possible that the effect of religious group involvement may depend on the reasons for involvement.

Second, more research on coping skills used by both religious and nonreligious individuals is needed. It seems particularly important to determine whether the increased use of any skill actually does decrease or increase loneliness. Longitudinal single organism and case study designs may be best suited to the study of coping skills. With sufficient replication, it may be possible to determine whether religious and nonreligious individuals do, in fact, cope differently (and are differentially effective) in response to loneliness.

Third, in order to increase the predictability of loneliness with the conservatively religious, three areas may be profitably explored; that is, family life (both past and present), specific doctrinal beliefs focusing on God's acceptance and spiritual (particularly religious) well-being. Because a measure of spiritual well-being which assesses religious and existential well-being separately already exists of demonstrated reliability and validity (See Paloutizian et al., 1982), religious well-being may be a particularly apt variable to study when exploring relationships between religiosity and the social loneliness of the conservatively religious.

In sum, then, this study would suggest that research on loneliness and social loneliness should move away from the study of group differences and loneliness and focus more on the antecedents of loneliness.

Religiosity and existential loneliness. Given the lack of a direct relationship between religiosity and social loneliness, it may be that if religiosity does have any effect on loneliness, as many of its proponents claim, that its influence is most felt in the intensity of types of loneliness other than socially-related loneliness. It may be, for example, that perceptions of existential loneliness (a sense of estrangement from others that includes a strong sense of alienation from meaning and from existence itself) are influenced by one's personal beliefs. Certainly, the conservative group expressed the greatest degree of life satisfaction and meaning in contrast to the other groups.

Other writers have, as well, suggested that religiosity influences one's sense of existential loneliness. For example, Yalom (1980) has speculated that to be part of a larger group or to dedicate oneself to some movement or cause is an effective way of denying one's sense of isolation and meaninglessness. As well, Andreason (1972) has noted that depressed religious individuals often feel a strong sense of isolation from God. Ellison (1978) has even provided a Biblical analysis of how the Christian faith seeks to resolve existential loneliness.

Research, therefore, on religiosity and loneliness

might do well to focus on existential loneliness rather than on social loneliness. Although existential loneliness has been found to be correlated with social loneliness as measured by the UCLA scale (r = .45) as reported by Solano (1980), the former may be more closely related to religiosity than is the latter. Since the Belcher Extended Loneliness Scale assesses existential loneliness as well as social loneliness (Belcher, 1973), this measure may be particularly apt when studying religious group differences in loneliness.

Religiosity and aloneness. Loneliness may have many meanings for the religious, For example, loneliness may become a way of experiencing the presence of the divine in one's life or be an expression of the fear that one is not worthy of the love of God (Abrahamson, 1979). In particular, however, there is a long tradition in most of the major faiths of the value of human isolation. Religious hermits and monastic communities all appear to be expressions of this value. Isolation from others has been perceived by many as a way of growing closer to God. Hosea, a prophet of the Old Testament, for example, stated that God "will entice you into the desert and there...speak to you in the depths of your heart". Modern religious writers (for example, Steere, 1981; Merton, 1969; Nouwen, 1974) have also emphasized the close relationship between solitude and spiritual renewal. Modern secular writers have, moreover, also commented on the positive aspects of aloneness as a

time of renewal (Larson, Csiszentmihalyi and Graef, 1982) and of healing (Suedfeld, 1982).

It would seem likely, then, that religious individuals might view loneliness more positively than others. Yet this was not found to be the case in this data set. It may be, therefore, that research seeking to fully understand the relationship between religiosity and human isolation would do well to both include a study of attitudes towards aloneness and solitude apart from attitudes towards loneliness and to study religious groups which emphasize the value of human isolation such as Quakers and monastic orders.

Generalizability and replication. The subjects who took part in this study were introductory psychology students who chose to sign up for a study labeled Values and Behaviour in order to gain experimental credits. These subjects may differ from others in significant ways. The relationships found here, therefore, may be weakened or strengthened in other populations. The generalizability of these results to any group is primarily a question of empirical replication than of speculation. Replication of the study with other university students would appear to be less valuable (if not trivial) than a replication of the study with nonuniversity populations varying in age and socioeconomic backgrounds. It is to these populations that future research might best be applied. In the absence of such direct replications, however, researchers of loneliness might do well to, at least, report the religious backgrounds

of their subjects as well as their level of commitment to religion.

Measures of life purpose and life satisfaction. Two problems appeared with the use of the PIL test. One, the test was not found to be homogeneous. The interpretation of findings about life purpose and meaning, therefore, was complicated by the heterogeneity of the test. Researchers wishing to investigate the relationship of life purpose and loneliness might be advised to employ alternative measures. Yalom (1980), for example, has recommended the Life Regard Index which explicitly distinguishes between "framework" items (life structure) and "fulfillment" items (life satisfaction). A second measure which also explicitly distinguishes between different aspects of life purpose ("search" and "attainment") has been devised by Currie (1982). Crumbaugh (1977) has also developed an alternative measure to the PIL test called the Seeking of Noetic Goals (SONG) test. This more recent scale assesses the strength of an individual's motivation to find meaning in life. Finally, the existential well-being component of the Spiritual Well-being scale (Paloutzian et al., 1982) also measures life meaning and satisfaction although these factors have not been given as separate scales.

In addition to the heterogeneity of the PIL test, its use is also problematic due to its misleading name. Not only does it appear not to measure life meaning alone (as its name might suggest), it appears to primarily measure

life satisfaction. It may be, then, that past findings with the PIL test should be viewed at worst as ambiguous and at best as pointing to relationships with life satisfaction. Some insight into this dilemma might be given by the replication of some of these findings with a measure explicitly measuring life satisfaction. A review of such measures has been given by Neugarten et al. (1961).

In sum, then, although the PIL test does appear to measure life purpose, it also measures other constructs, particularly that of life satisfaction. Future research on life meaning might benefit from using other scales either explicitly acknowledging this heterogeneity or seeking to remove it.

Implications for Clinical Practice

This study would suggest with others that a relationship focus is an important aspect of the treatment of loneliness. In addition, it would suggest that the world view of the client be taken into account. These two implications will now be discussed in greater detail.

A focus on relationships. Treatment approaches which explicitly focus on loneliness are relatively recent (Young, 1982). While approaches may vary in the degree to which either behaviours or cognitions are targeted directly, most appear to focus on the altering of relationships or of, at least, the perception of these relationships. Rook and Peplau (1982) have suggested, for example, that treatment focus on changing the social network by social skills

training. Young (1982) has also asserted that the development of intimacy is an integral component of treatment programs for loneliness. Such development might occur with social skills training and the cognitive restructuring of inappropriate expectations about relationships. This study would agree with such a focus. The perceived quality of relationships was most closely associated with the intensity of loneliness. Cognitive and behavioural means could be targeted on this area as well as on other possible sources of information about loneliness; that is, the perception of loneliness itself and one's own coping behaviour.

Personal belief constructs. It seems likely that religious people cope with and think about loneliness in ways that distinguish them from others. Therapists, however, have typically been encouraged to either ignore or interpret such religious language (See Freud, 1929) or confront it as irrational (See Ellis, 1980). It would be argued, then, that therapists should treat all lonely individuals the same regardless of the latter's level or type of religiosity.

Although a relationship focus may be most appropriate for all lonely individuals, nonetheless, it is possible that religious individuals might benefit from treatments incorporating their religious views (Propst, 1982). Swenson, Brady and Edwards (1978), for example, reported that unassertive students at a small Christian college who were given a therapeutic rationale emphasizing the compatibility of assertiveness with Christian values were significantly

more assertive following treatment than students who were given a rationale which focused only on the intrinsic benefits of assertiveness. Similarly, Propst (1980) reported that depressed religious clients receiving a cognitive treatment incorporating religious cognitions and images were significantly less depressed at post treatment than depressed religious clients receiving a standard cognitive treatment program. Treatments which utilize the world view of the client may be particularly effective as they may be more adept at eliciting strong expectations for therapeutic success (Propst, 1982).

Therapists and counselors who work with religious individuals who are lonely may do well not to ignore their client's religiosity but to instead make use of it. As a treatment program for such individuals has not yet been developed, research on such a treatment may also be useful.

Summary

Much research on loneliness has focused on how people cope with loneliness. Some individuals have been found to cope with strategies which may best be described as religious. It was suggested, therefore, that religiosity may be a coping resource. This view has been bolstered by speculations and empirical findings that religious people may be less lonely than nonreligious people. This study sought to examine this claim.

A complex approach to this issue was taken by positing a number of antecedents to loneliness (life purpose, coping skills, attributions and relationships). These variables were suggested to be associated with various aspects of religiosity. Religiosity, then, was not thought to be associated with loneliness directly but through mediating variables.

To test this view, university students were surveyed using a variety of measures. Three groups were created; that is, nonreligious, nonconservative religious and conservative religious. The data was analyzed primarily by MANCOVA, correlation and stepwise regression.

The three groups did not differ significantly in their level of loneliness. They did differ, however, on a number of variables with the conservative group, in general, being more different than either of the other groups. The conservative group tended to express the most life purpose and satisfaction, more opportunities for nurturance (more

social provisions overall) and greater effectiveness of problem redefinition as well as be more religious than the other two groups as assessed by variables of religious faith (belief saliency, belief rigidity, religious group involvement, prayer) and religiosity-related variables (religiousness of networks, religious coping skills and cognitions).

Loneliness was found to be most closely associated with the social provisions of relationships. Loneliness was also associated with network size and density, life purpose and satisfaction, the use of cognitive problem solving (and prayer), the perceived effectiveness of coping skills and the perceived instability and controllability of loneliness.

In the last major section, a self-perception theory was proposed in which individuals use various sources of information about their relationships, their loneliness and their own behaviour to come to conclusions about the intensity of their loneliness. It seemed likely that individuals priorize this information with relationships being the most dependable source of data. This last section also suggested that although religiosity did not influence loneliness directly, the former did appear to interact with the latter in three ways. First, antecedents of loneliness such as life purpose and satisfaction, social provisions and size of networks were associated with aspects of religiosity. In particular, involvement with religious groups was closely associated with these mediating variables.

Second, religious people tended to think about and cope with loneliness in ways that differed from nonreligious people. These differences encompassed cognitions and behaviours not clearly said to be religious in nature. Third, the loneliness of religious individuals appeared to be less predictable than that of nonreligious individuals. It may be that religious individuals use different sources of information from others when labeling themselves as lonely.

Finally, implications of the study for theory, research and clinical practice were reviewed with an emphasis that the religious background of both subjects and clients should be taken into account.

In sum, it would appear that religiosity and loneliness do interact but that the interaction is a complex one needing further replication and elaboration. In 1956, Moberg stated that

> Great claims have been made as to the salutary influence of the church and religion upon the individual's personality and upon society, but relatively little research has been done to determine objectively the presence and nature or the absence of this influence (p. 261).

Although this statement is less true now than it was then, the gathering of data has been a slow one. This study is viewed as part of the effort to provide empirical data on a subject which has largely been confined to the armchairs of philosophers and theologians.

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Appendix A

A guide to measures in the questionnaire

Items	Measure
1-11	Demographics
12-23	Social Desirability Scale (subset)
24-43	UCLA Loneliness Scale
44	Global Self-rating of Loneliness
45	Loneliness Chronicity Rating
46-69	Social Provisions Scale
70-89	Purpose-in-Life Test
90	Currie Doubt Item
91-99	Rokeach Dogmatism Scale (subset)
100	Network Questionnaire
101-170	Coping Skills Questionnaire
171-188	Loneliness Attributional Measure
189-205	Literal, Anti-literal and Mythological Scales
206	Belief Commitment Measure
207-211	Cognitive Salience Scale
212-220	Religious Group Involvement Scale
221-222	Church Stability Measure
223-233	Nonchurch Religious Group Involvement Measure
234-239	Nonreligious Group Involvement Measure
240-242	Prayer Frequency Measure
243-245	Prayer Satisfaction Measure

Appendix B

The Questionnaire

This is a study of how values and beliefs affect different people. Be sure to state what you really believe rather than what you think you should say or what you would like to be true. Many of the questions measure personal belief; obviously there are no right or wrong answers.

Please answer the items carefully but do not spend too much time on any one item. Give an answer for every item. Also try to respond to each item independently when making your choice: do not be influenced by your previous answers. While there is some overlapping, each item is important for itself.

The questions vary somewhat in format so be aware of what the alternatives are for a particular item.

1. Age ___ years
2. Gender ___ female ___ male
3. Year in University ____
4. How would you define your ethnicity?

___ Asian ___ Native ___ Britsh Isles ___ German
___ Polish ___ Italian ___ Scandinavian ___ Dutch
Other (specify) _____

5. Do you live

___ alone ___ with relatives (a spouse or child is considered to be a relative)
___ with one other person (not relatives)
___ with 2 or more people (not relatives)
___ Other (specify) _____

6. Are you

___ single ___ married ___ divorced or separated
___ living with someone of the opposite sex but not married

7. Where exactly did you spend most of your time when you were growing up (younger than 16)?

_____

place province country

8. Is your place of residence

___ in Winnipeg ___ outside of Winnipeg

9. How long have you lived in your present residence?

___ years

10. Where do you currently live?

___ university residence ___ parent's home
___ with other relatives ___ in own residence (house or apartment)
Other (specify) _____

11. What is your religious preference? (Check one only)

___ None ___ Anglican ___ Latter Day Saints
___ Lutheran ___ Greek Orthodox ___ Baptist
___ Mennonite ___ Pentecostal ___ United
___ Roman Catholic ___ Ukrainian Catholic
Other (specify) _____

For items 12 to 23 indicate whether the statement is true or false as applied to you.

12. My table manners at home are as good as when I eat out in a restaurant.

    True False

13. If I could get into a movie without paying and be sure I was not seen I would probably do it.

    True False

14. On a few occassions, I have given up doing something because I thought too little of my ability.

    True False

15. There have been times when I felt like rebelling against people in authority even though I knew they were right.

    True False

16. I am always willing to admit it when I make a mistake.

    True False

17. I don't find it particularly difficult to get along with loud-mouthed obnoxious people.

    True False

18. I sometimes try to get even rather than forgive and forget.

    True False

19. I am always courteous, even to people who are disagreeable.

    True False

20. I have never been irked when people expressed ideas very different from my own.

    True False

21. There have been times when I was quite jealous of the good fortunes of others.

    True False

22. I sometimes think when people have a misfortune that they only got what they deserved.

    True False

23. I have never deliberately said anything that hurt someone's feelings.

    True False

Items 24 to 43 are to be rated "never", "rarely", "sometimes" or "often". Indicate how often each of the statements describes you. circle one alternative per item.

24. I feel in tune with the people around me.
never rarely sometimes often

25. I lack companionship.
never rarely sometimes often

26. There is no one I can turn to.
never rarely sometimes often

27. I do not feel alone.
never rarely sometimes often

28. I feel part of a group of friends.
never rarely sometimes often

29. I have alot in common with the people around me.
never rarely sometimes often

30. I am no longer close to anyone.
never rarely sometimes often

31. My interests and ideas are not shared by those around me.
never rarely sometimes often

32. I am an outgoing person.
never rarely sometimes often.

33. There are people I feel close to.
never rarely sometimes often

34. I feel left out.
never rarely sometimes often

35. My social relationships are superficial.
never rarely sometimes often

36. No one really knows me well.
never rarely sometimes often

37. I feel isolated from others.
never rarely sometimes often

38. I can find companionship when I want it.
never rarely sometimes often

39. There are people who really understand me.
never rarely sometimes often

40. I am unhappy being so withdrawn.

never rarely sometimes often

41. People are around me but not with me.

never rarely sometimes often

42. There are people I can talk to.

never rarely sometimes often

43. There are people I can turn to.

never rarely sometimes often

44. Many people feel lonely from time to time. Rate from 1 to 4 how lonely you have been feeling recently.

1	2	3	4
not at all lonely			very lonely

45. Now indicate how long you have been feeling the way you feel at this time.

less than a month	a month to nearly 6 months	6 months to nearly a year	a year or more

In answering items 46 to 69, you are to think about your current relationships with friends, family members, coworkers, community members and so on. Indicate to what extent you agree that each statement describes your current relationships with other people. Circle one alternative per item.

46. There are people I can depend on to help me if I really need it.

strongly disagree disagree agree strongly agree

47. I feel that I do not have close personal relationships with other people.

strongly disagree disagree agree strongly agree

48. There is no one I can turn to for guidance in times of stress.

strongly disagree disagree agree strongly agree

49. There are people who depend on me for help.

strongly disagree disagree agree strongly agree

50. There are people who enjoy the same social activities I do.

strongly disagree disagree agree strongly agree

51. No one respects my opinions on issues.

strongly disagree disagree agree strongly agree

52. I feel personally responsible for the well-being of another person.

strongly disagree disagree agree strongly agree

53. I feel part of a group of people who share my attitudes and beliefs.

strongly disagree disagree agree strongly agree

54. I do not think other people know and value me.

strongly disagree disagree agree strongly agree

55. If something went wrong, no one would come to my assistance.

strongly disagree disagree agree strongly agree

56. I have close relationships that provide me with a sense of emotional security and well-being.

strongly disagree disagree agree strongly agree

57. There is someone I could talk to about important decisions in my life.

strongly disagree disagree agree strongly agree

58. I have relationships where my competence and skill are recognized.

strongly disagree disagree agree strongly agree

59. There is no one who shares my interests and concerns.

strongly disagree disagree agree strongly agree

60. There is no one who really relies on me for their well-being.

strongly disagree disagree agree strongly agree

61. There is a trustworthy person I could turn to for advice if I were having problems.

strongly disagree disagree agree strongly agree

62. I feel a strong emotional bond with at least one other person.

strongly disagree disagree agree strongly agree

63. There is no one I can depend on for aid if I really need it.

strongly disagree disagree agree strongly agree

64. There is no one I feel comfortable talking about problems with.

strongly disagree disagree agree strongly agree

65. There are people who admire my talents and abilities.
strongly disagree disagree agree strongly agree

66. I lack a feeling of intimacy with another person.
strongly disagree disagree agree strongly agree

67. There is no one who likes to do the things I do.
strongly disagree disagree agree strongly agree

68. There are people I can count on in an emergency.
strongly disagree disagree agree strongly agree

69. No one needs me to care for them.
strongly disagree disagree agree strongly agree

For items 70 to 89, pick the level which applies to you. Note the numbers always extend from one extreme feeling to its opposite kind of feeling. Circle the one which applies to you.

70. I am usually:

1	2	3	4	5	6	7
completely bored			neutral			exuberant, enthusiastic

71. Life to me seems:

1	2	3	4	5	6	7
always exciting			neutral			completely routine

72. In life I have:

1	2	3	4	5	6	7
no goals or aims at all			neutral			very clear goals and aims

73. My personal existence is:

1	2	3	4	5	6	7
utterly meaning-less, without meaning			neutral			very purposeful and meaningful

74. Everyday is:

1	2	3	4	5	6	7
constantly new and different			neutral			exactly the same

75. If I could choose, I would:

1	2	3	4	5	6	7
prefer never to have been born			neutral			like nine more lives just like this one

76. After retiring, I would:

1	2	3	4	5	6	7
do some of the things I have always wanted to do			neutral			loaf completely the rest of my life

77. In achieving life goals I have:

1	2	3	4	5	6	7
made no progress whatsoever			neutral			progressed to complete fulfillment

78. My life is:

1	2	3	4	5	6	7
empty, filled only with despair			neutral			running over exciting good things

79. If I should die today, I would feel that my life has been.

1	2	3	4	5	6	7
very worthwhile			neutral			completely worthless

80. In thinking of my life, I:

1	2	3	4	5	6	7
often wonder why I exist			neutral			always see a reason for my being here

81. As I view the world in relation to my life, the world:

1	2	3	4	5	6	7
completely confuses me			neutral			fits meaningfully with my life

82. I am a:

1	2	3	4	5	6	7
very irresponsible person			neutral			very responsible person

83. Concerning man's freedom to make his own choices, I believe man is:

1	2	3	4	5	6	7
absolutely free to make all life choices			neutral			completely bound by limitations of heredity and environment

84. With regard to death, I am:

1	2	3	4	5	6	7
prepared and unafraid			nuetral			unprepared and frightened

85. With regard to suicide, I have:

1	2	3	4	5	6	7
thought of it seriously as a way out			neutral			never given it a second thought

86. I regard my ability to find a meaning, purpose, or mission in life as:

1	2	3	4	5	6	7
very great			neutral			practically none

87. My life is:

1	2	3	4	5	6	7
in my hands and I am in control of it			neutral			out of my hands and controlled by external forces

88. Facing my daily tasks is:

1	2	3	4	5	6	7
a source of pleasure and			neutral			a painful and boring experience

89. I have discovered:

1	2	3	4	5	6	7
no mission or purpose in life			neutral			clear-cut goals and a satisfying life purpose

For items 90 to 99, indicate the extent to which you agree with the statement. Circle the one that applies to you.

90. I don't really have doubts about what I believe.

strongly disagree disagree agree strongly agree

91. The principles I believe in are quite different from those believed by most people.

strongly disagree disagree agree strongly agree

92. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.

strongly disagree disagree agree strongly agree

93. It is only natural that a person would have a much better acquaintance with ideas which he or she believes than with ideas which he or she opposes.

strongly disagree disagree agree strongly agree

94. Once I get wound up in a heated discussion I just can't stop.

strongly disagree disagree agree strongly agree

95. Of all the different philosophies which exist in this world, there is probably only one which is correct.

strongly disagree disagree agree strongly agree

96. The present is all too often full of unhappiness. It is only the future that counts.

strongly disagree disagree agree strongly agree

97. There are two kinds of people in this world: those who are for the truth and those who are against the truth.

strongly disagree disagree agree strongly agree

98. It is often desirable to reserve judgement about what's going on until one has had a chance to hear the opinions of those one respects.

strongly disagree disagree agree strongly agree

99. In the long run, the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

strongly disagree disagree agree strongly agree

100. This is a measure of how inter-related your relationships are.

First, list by initial all people up to a maximum of twenty who are personally important to you that you regard as friends. For the purpose of this question, a "friend" is someone with whom you feel comfortable discussing personal matters. This would include relatives you feel close to and who are important to you. Twenty people has been arbitrarily set as a maximum. Some people may have fewer while some may have more.

Second, indicate whether the person is your friend, girl or boy friend, father, sister, cousin, etc.

Third, indicate whether you would consider this person to be religious.

Fourth, indicate by initials those who know or who are acquainted with other people on your list. A person may know more than one other person on the list. Fill out this question on the next page. The first six initials are examples.

	Initial	Relationship	Religious		Inter-relationships
	B. D.	friend	(yes)	no	none
	J. P.	sister	(yes)	no	R. K., D. F.
	R. K.	friend	yes	(no)	J. P., L. M.
	L. M.	friend	yes	(no)	R. K.
	D. F.	brother-in-law	(yes)	no	J. P.
	D. G.	friend	yes	(no)	none
1.	_____	_____	yes	no	_____
2.	_____	_____	yes	no	_____
3.	_____	_____	yes	no	_____
4.	_____	_____	yes	no	_____
5.	_____	_____	yes	no	_____
6.	_____	_____	yes	no	_____
7.	_____	_____	yes	no	_____
8.	_____	_____	yes	no	_____
9.	_____	_____	yes	no	_____
10.	_____	_____	yes	no	_____
11.	_____	_____	yes	no	_____
12.	_____	_____	yes	no	_____
13.	_____	_____	yes	no	_____
14.	_____	_____	yes	no	_____
15.	_____	_____	yes	no	_____
16.	_____	_____	yes	no	_____
17.	_____	_____	yes	no	_____
18.	_____	_____	yes	no	_____
19.	_____	_____	yes	no	_____
20.	_____	_____	yes	no	_____

Many people often feel lonely. Rate how often you have engaged in each of the following activities to deal with loneliness. Then rate how helpful you found those responses to be.

101. Taken your mind off feeling lonely by doing some physical activity.

never rarely sometimes often

102. Taking your mind off feeling lonely by doing some physical activity was:

never used unhelpful somewhat helpful very helpful

103. Tried to figure out why you were lonely.

never rarely sometimes often

104. Trying to figure out why you were lonely was:

never used unhelpful somewhat helpful very helpful

105. Done something to make yourself more physically attractive to others.

never rarely sometimes often

106. Doing something to make yourself more physically attractive to others was:

never used unhelpful somewhat helpful very helpful

107. Thought about good qualities that you possess.

never rarely sometimes often

108. Thinking about good qualities that you possess was:

never used unhelpful somewhat helpful very helpful

109. Read the Bible.

never rarely sometimes often

110. Reading the Bible was:

never used unhelpful somewhat helpful very helpful

111. Actually done something you are very good at.

never rarely sometimes often

112. Actually doing something you are very good at was:

never used unhelpful somewhat helpful very helpful

113. Told yourself that you were over-reacting, that you shouldn't be so upset.

never rarely sometimes often

114. Telling yourself that you were over-reacting, that you shouldn't be so upset was:

never used unhelpful somewhat helpful very helpful

115. Listened to some religious music.

never rarely sometimes often

116. Listening to some religious music was:

never used unhelpful somewhat helpful very helpful

117. Told yourself that most other people are lonely at one time or another.

never rarely sometimes often

118. Telling yourself that most other people are lonely at one time or another was:

never used unhelpful somewhat helpful very helpful

119. Tried to do new things to meet people.

never rarely sometimes often

120. Trying to do new things to meet people was:

never used unhelpful somewhat helpful very helpful

121. Taken your mind off feeling lonely through some mental activity.

never rarely sometimes often

122. Taking your mind off feeling lonely through some mental activity was:

never used unhelpful somewhat helpful very helpful

123. Read a religious book.

never rarely sometimes often

124. Reading a religious book was:

never used unhelpful somewhat helpful very helpful

125. Thought about things you could do to overcome your loneliness.

never rarely sometimes often

126. Thinking about things you could do to overcome your loneliness was:

never used unhelpful somewhat helpful very helpful

127. Listened to music.

never rarely sometimes often

128. Listening to music was:

never used unhelpful somewhat helpful very helpful

129. Prayed.

never rarely sometimes often

130. Praying was:

never used unhelpful somewhat helpful very helpful

Many people often feel lonely. Rate how often you have engaged in each of the following activities to deal with loneliness. Then rate how helpful you found those responses to be.

131. Done something to improve your social skills.

never rarely sometimes often

132. Doing something to improve your social skills was:

never used unhelpful somewhat helpful very helpful

133. Thought about things you can do extremely well.

never rarely sometimes often

134. Thinking about things you can do extremely well was:

never used unhelpful somewhat helpful very helpful

135. Got alone to think.

never rarely sometimes often

136. Getting alone to think was:

never used unhelpful somewhat helpful very helpful

137. Joined a religious group.

never rarely sometimes often

138. Joining a religious group was:

never used unhelpful somewhat helpful very helpful

139. Worked particularly hard to succeed at some activity.

never rarely sometimes often

140. Working particularly hard to succeed at some activity was:

never used unhelpful somewhat helpful very helpful

141. Told yourself that your loneliness would not last forever, that things would get better.

never rarely sometimes often

142. Telling yourself that your loneliness would not last forever, that things would get better was:

never used unhelpful somewhat helpful very helpful

143. Reminded yourself that you actually do have good relationships with other people.

never rarely sometimes often

144. Reminding yourself that you actually do have good relationships with other people was:

never used unhelpful somewhat helpful very helpful

Many people often feel lonely. Rate how often you have engaged in each of the following activities to deal with loneliness. Then rate how helpful you found those responses to be.

145. Thought about God's love.

never rarely sometimes often

146. Thinking about God's love was:

never used unhelpful somewhat helpful very helpful

147. Attended a social gathering to meet new people.

never rarely sometimes often

148. Attenting a social gathering to meet new people was:

never used unhelpful somewhat helpful very helpful

149. Taken your mind off feeling lonely by deliberately thinking about other things.

never rarely sometimes often

150. Taking your mind off feeling lonely by deliberately thinking about other things was:

never used unhelpful somewhat helpful very helpful

151. Thought about how to change your loneliness.

never rarely sometimes often

152. Thinking about how to change your loneliness was:

never used unhelpful somewhat helpful very helpful

153. Done something to make yourself a more out-going person.

never rarely sometimes often

154. Doing something to make yourself a more out-going person was:

never used unhelpful somewhat helpful very helpful

155. Talked to a religious leader.

never rarely sometimes often

156. Talking to a religious leader was:

never used unhelpful somewhat helpful very helpful

157. Thought about things you have done successfully in the past.

never rarely sometimes often

158. Thinking about things you have done successfully in the past was:

never used unhelpful somewhat helpful very helpful

Rate how often you have engaged in each of the following activities to deal with loneliness. Then rate how helpful you found those responses to be.

159. Taken your mind off feeling lonely by concentrating on schoolwork.

never rarely sometimes often

160. Taking your mind off feeling lonely by concentrating on schoolwork was:

never used unhelpful somewhat helpful very helpful

161. Sung a hymn or chorus.

never rarely sometimes often

162. Singing a hymn or chorus was:

never used unhelpful somewhat helpful very helpful

163. Thought about possible benefits of your experience of loneliness.

never rarely sometimes often

164. Thinking of possible benefits of your experience of loneliness was:

never used unhelpful somewhat helpful very helpful

165. Read a novel.

never rarely sometimes often

166. Reading a novel was:

never used unhelpful somewhat helpful very helpful

167. Changed your goals for social relationships.

never rarely sometimes often

168. Changing your goals for social relationships was:

never used unhelpful somewhat helpful very helpful

169. Attended organized recreational activities to meet new people.

never rarely sometimes often

170. Attenting organized recreational activities to meet new people was:

never used unhelpful somewhat helpful very helpful

Rate statements 171 to 188 in terms of your agreement.

171. In general, loneliness occurs because of the type of society we live in.

strongly disagree disagree agree strongly agree

172. When a person is lonely, there is really not much that he or she can do about it.

strongly disagree disagree agree strongly agree

173. It is often God's will that individuals experience loneliness to help them grow in their faith.

strongly disagree disagree agree strongly agree

174. It's too bad when people give up trying to overcome their loneliness as there are lots of things that they can do about it.

strongly disagree disagree agree strongly agree

175. Feelings of loneliness don't really last for very long.

strongly disagree disagree agree strongly agree

176. If a Christian feels lonely, it's often due to personal sin.

strongly disagree disagree agree strongly agree

177. Satan often makes a person feel lonely to make him or her grow weak in faith.

strongly disagree disagree agree strongly agree

178. Loneliness is a normal and probably even desirable aspect of human development.

strongly disagree disagree agree strongly agree

179. If a person feels lonely, it's largely due to something about him or her.

strongly disagree disagree agree strongly agree

180. God may allow us to get into situations which make us feel lonely but all we need to do is to ask in order to get out of the situation.

strongly disagree disagree agree strongly agree

181. Once a person is lonely, it takes a long time to stop feeling that way.

strongly disagree disagree agree strongly agree

182. Having a relationship with God does not really help a person deal with feelings of isolation from others.

strongly disagree disagree agree strongly agree

183. The best thing to do if a person is feeling lonely is to pray to God that He will change whatever is causing the loneliness.

strongly disagree disagree agree strongly agree

184. If a person feels lonely, he or she primarily needs to develop as an individual.

strongly disagree disagree agree strongly agree

185. God may make someone lonely to punish them.

strongly disagree disagree agree strongly agree

186. There is really nothing positive about being lonely.

strongly disagree disagree agree strongly agree

187. When a person is lonely, the cause has little to do with God; it's just one of those things that happens in this world.

strongly disagree disagree agree strongly agree

188. If a person feels lonely, he or she usually needs to change their environment, rather than something about him or herself.

strongly disagree disagree agree strongly agree

Items 189 to 205 have three alternatives, A, B and C. These are statements about religious beliefs. Pick the statement which best expresses your personal opinion. Circle the letter (A, B or C) which corresponds to the statement which best expresses your personal opinion.

189. I believe in God, the Father Almighty, maker of heaven and earth.

A. Agree, since available evidence proves that God made everything.

B. Disagree, since available evidence suggests some type of spontaneous creation for which it is unnecessary to assume a God to create.

C. Agree, but only in the sense that this is an anthropomorphic way of talking about whatever Process, Being or Ultimate Concern stands behind the creative process.

190. I believe that people working and thinking together can build a just society without supernatural help.

A. Disagree, since people without God's help can do very little that is good.

B. Agree, since people have and are increasing the ability and technical knowledge to improve society if they will apply this knowledge to the problems of society.

C. Disagree, although human ability and technical knowledge are increasing people must build on the ultimate power within themselves to understand and accomplish the full implications of justice and a good society.

191. The writings of such commentators on human life as Plato, Aristotle, Dante, and Shakespeare are as much inspired as are the writings of Moses and Paul.

A. Disagree, because the writings of Moses and Paul contain a special inspiration from God which other human writings do not have.

B. Agree, since there is really little difference in these writings. In fact, Plato and Aristotle may be even more important for us than Moses and Paul.

C. Disagree, although any writing may be inspired, the writings of Moses and Paul are especially significant because they form part of the revelation of God in history.

192. All miracles in the Bible are true.

A. Agree, because the Bible cannot contain any false report of God's work.

B. Disagree, since "miracles" can be explained by our modern understanding of the principles by which nature and human society operate.

C. Perhaps, since there is considerable evidence for extra-physical power being used by a few persons in every major cultural tradition, though there is no clear scientific proof.

193. Jesus was born of the Virgin in a manner different from human beings.

A. Disagree, although most religions claim a virgin birth for their founder, we know that such an event is physically impossible.

B. Agree, but only in the sense that this is an ancient mythological way of talking about the Ultimate Reality as manifested in Jesus.

C. Agree, since God conceived Jesus in Mary's womb before she had a sexual relationship with Joseph, her husband.

194. The attempt to believe in a supernatural being is a sign of a person's failure to accept responsibility for his or her own life.

A. Agree, since belief in God is usually an escape from the problems of everyday life. Such belief does nothing to help solve one's problems.

B. Disagree, because belief in God is really the only way in which a person can be saved and make his or her life worthwhile.

C. Disagree, since belief in God is basically man's way of talking about his full acceptance of personal responsibility in the face of ultimate and sometimes uncertain reality.

195. I believe in the guidance of the Holy Spirit.

A. Agree, since God has said that He will be with us always. Prayer, thus, is an effective way of listening to God's guidance.

B. Disagree, since the supernatural, if it exists at all, is in no way directly involved in telling people what to do.

C. Agree, because this is one way of describing the involvement of God with His creation and people.

196. The chief end of people is to glorify God and to enjoy Him forever.

A. Agree, since God created people and expects them to do God's will at all times.

B. Disagree, since people must find their own purposes in life. There are probably no purposes for people which are apparent in nature.

C. Agree, since the individual who enjoys God's creation and serves other people is at the same time glorifying God.

197. I believe Hell is a form of existence in a future life.

A. Disagree, since Hell is not a future life existence, but rather a present state in this life which occurs when people disregard their own code of ethics and/ or the rights of other individuals.

B. Disagree, since there is little, if any, evidence for any type of existence after this life.

C. Agree, since there is ample evidence in the Bible and other authoritative sources for Hell as a form of future existence.

198. The four Gospels, Matthew, Mark, Luke and John, contain some legendary materials.

A. Agree, since most of the material in the gospels cannot be supported by other historical sources or is not relevant to life in today's world.

B. Disagree, since nothing in the four gospels could be legendary or in error, because these are part of the the Bible and therefore infallible.

C. Agree, but this does not deny the basic purpose of the gospels, which is to use written language (however inadequate) to announce God's revelation of Himself to people.

199. We were made for fellowship with God and our hearts are restless until they rest in Him.

A. Agree, although this is merely a way of talking about the ultimate nature of human activities as being in some way related to God's purpose.

B. Disagree, since the restlessness of people results from the inability to identify with a group of persons and to enjoy people, not in a supposed relation to some God.

C. Agree, since God's basic purpose in creating people is so thay can be a companion to God.

200. People are saved by the free gift of God's grace.

A. Agree, since the Bible clearly states that salvation is by a person's faith in God and His grace.

B. Disagree, since whatever salvation there is must come through the work of people in the world.

C. Agree, since this is a traditional expression which really refers to the unconditional nature of God's grace toward people.

201. The biblical writers were endowed with a divine wisdom which enabled them to foretell specific events in the distant future.

A. Disagree, since the basic purpose of prophecy in the Bible was to announce God's judgement of the ways in which that present generation failed to act in harmony with God's purposes for people.

B. Agree, since many of these prophecies either came true in earlier history, in the Bible, or are coming true in the world today.

C. Disagree, since the biblical writers had no greater wisdom than other people of their day. Any prophecies which may have come true were the result of a knowledge of cause and effect which any person could achieve.

202. People are ultimately responsible to God.

A. Disagree, because people are finally responsible to themselves and their society.

B. Agree, because this is a way of describing the basic assumption upon which all other concepts of responsibility depend.

C. Agree, because God has created people in His image and expects them to do God's will.

203. God is only a symbol of the ideals of people.

A. Disagree, although the experiences of people may be symbolized in how God is imagined to be, the reality of God always transcends human symbols for that reality.

B. Agree, since religious people tend to ascribe to God their own highest ideals.

C. Disagree, since there is clear evidence for a real God who is much more than just the result of human rational powers.

204. Jesus walked on water and raised the dead.

A. Disagree, since these are probably exaggerated reports of events which could be explained through our knowledge of nature.

B. Agree, since there are several accounts in which Jesus actually brought a physically dead person back to life. These accounts provide evidence for God's power over nature.

C. Agree, but only in the sense that these are figurative ways of describing human awareness of the meaning of life in relation to the revelation of God.

205. The biblical story of creation is probably based on one of the early Babylonian myths.

A. Agree, but the basic purpose of the creation story is to symbolize God's creative and redemptive relation to the universe and to people.

B. Disagree, since the biblical story of creation has not been duplicated in any way at any time. It refers to God's creation of the world and people.

C. Agree, since most religious provide such a creation story. Modern scientific theories of the origin of the universe have replaced these ancient accounts.

206. It is often difficult to pick one statement which best reflects your form of religious commitment. Pick one statement, however, from the group of four (A, B, C or D) which best describes the nature of your religious commitment.

A. I do not consider myself to be religious.

B. I consider myself to be religious and I have received Jesus Christ as my personal Saviour and Lord.

C. I consider myself to be religious and I respect and attempt to follow the moral and ethical teachings of Christ.

D. I consider myself to be religious but I do not consider myself to be Christian. I am a member of some other religious faith.

Rate the statements according to the alternative which best describes you.

207. My religious beliefs are what really lie behind my approach to life.

strongly disagree disagree agree strongly agree

208. I try hard to grow in understanding of what it means to live as a child of God.

strongly disagree disagree agree strongly agree

209. Religion is especially important to me because it answers many questions about the meaning of life.

strongly disagree disagree agree strongly agree

210. I try hard to carry my religion over into all my other dealings in life.

strongly disagree disagree agree strongly agree

211. I frequently feel very close to God in prayer, during public worship, or at important moments in my daily life.

strongly disagree disagree agree strongly agree

212. I enjoy working in the activities of the church.

strongly disagree disagree agree strongly agree

213. Church activities (meetings, committee work, etc.) are a major source of satisfaction in my life.

strongly disagree disagree agree strongly agree

214. I keep pretty well-informed about my congregation and have some influence on its decisions.

strongly disagree disagree agree strongly agree

215. In how many church offices, committees, or church-related jobs have you served in the past 12 months?

none one two or three more than three

216. How often have you taken Holy Communion (The Lord's Supper, the Eucharist) during the past year?

seldom or never occasionally fairly frequently regularly

217. During the last year, how many Sundays per month on the average have you gone to a worship service?

none once twice three or more

218. If not prevented by unavoidable circumstances, I attend church:

more than once a week once a week less than twice a month less than once a month

219. How would you rate your activity in your church?

very active active somewhat active inactive

220. How often do you spend mornings, afternoons or evenings at church meetings or in church work?

seldom or never occasionally fairly frequently regularly

221. When did you start attending your present church?

within the last month within the last 6 months within the last year more than a year ago

222. How many churches have you attended in the past year? (other than being a guest of a friend or relative)

none one two three or more

223. Do you belong to any religious organizations or groups not associated with a particular church?

No — If No, skip items 224 to 233 and start again with item 234.

Yes — If Yes, continue with item 224.

224. Check off those religious organizations or groups not associated with a particular church to which you belong.

_____ Campus Crusade for Christ

_____ Inter-Varsity

_____ Navigators

_____ Student Christian Movement

Others (specify) _____

_____

225. Which of these groups is most important to you?

_____

Now answer items 226 to 233 about the group which was most important to you.

226. During the past year, how many times per month on the average have you gone to a meeting of this group?

none once twice three or more

227. If not prevented by unavoidable circumstances, I attend this group:

more than once a week | once a week | less than twice a month | less than once a month

228. How would you rate your activity in this group?

very active active somewhat active inactive

229. How often do you spend mornings, afternoons or evenings in committee meetings or in work for the group?

seldom or never occasionally fairly frequently regularly

230. In how many offices, committees, or group-related jobs have you served in the past 12 months?

none one two or three more than three

231. I enjoy working in the activities of this group.

strongly disagree disagree agree strongly agree

232. Group activities (meetings, committee work, etc.) are a major source of satisfaction in my life.

strongly disagree disagree agree strongly agree

233. I keep pretty well-informed about this group and have some influence on its decisions.

strongly disagree disagree agree strongly agree

Those people who skipped items 224 to 233 because they did not belong to any religious groups not associated with a particular church should start here again. Those who responded to items 224 to 233 are to continue.

234. Do you belong to university organizations, teams or clubs? (other than religious ones)

No Yes If Yes, continue.

If No, skip to item 236.

235. Check off the university organizations, teams or clubs to which you belong (other than religious ones). Then indicate how often on the average per month you attend.

	Attendance per month			
____ sports	none	once	twice	more than twice
____ debating	none	once	twice	more than twice
____ fraternities or sororities	none	once	twice	more than twice
Others (specify)				
_____	none	once	twice	more than twice
_____	none	once	twice	more than twice
_____	none	once	twice	more than twice

236. Do you belong to any political groups?

No Yes If Yes continue.

If No, skip to item 238.

237. Check off the political groups to which you belong. Then indicate how often on the average per month you attend.

		Attendance per month			
____	Liberal	none	once	twice	more than twice
____	NDP	none	once	twice	more than twice
____	Progressive Conservative	none	once	twice	more than twice
	Others (specify)				
	_____	none	once	twice	more than twice
	_____	none	once	twice	more than twice

238. Do you belong to any community organizations, teams or clubs or any sort of organization, team or club not yet mentioned? (other than religious ones)

No — If No, skip to item 240.

Yes — If Yes, continue.

239. Check off any other group to which you belong (other than religious ones). Then indicate how often on the average per month you attend.

		Attendance per month			
____	sports	none	once	twice	more than twice
____	Labour unions	none	once	twice	more than twice
____	Nationality groups	none	once	twice	more than twice
____	Rotary	none	once	twice	more than twice
____	Farm groups	none	once	twice	more than twice
	Others (specify)				
	_____	none	once	twice	more than twice
	_____	none	once	twice	more than twice
	_____	none	once	twice	more than twice
	_____	none	once	twice	more than twice

240. How often do you pray privately in places other than at church?

seldom or never occasionally fairly frequently regularly

241. How often do you ask God to forgive your sins?

seldon or never occasionally fairly frequently regularly

242. When you have decisions to make in your everyday life, how often do you try to find out what God wants you to do?

seldom or never occasionally fairly frequently regularly

243. Private prayer is one of the most important and satisfying aspects of my religious experience.

strongly disagree disagree agree strongly agree

244. I frequently feel very close to God in prayer.

strongly disagree disagree agree strongly agree

245. I enjoy praying.

strongly disagree disagree agree strongly agree

Thank you for filling out this fairly lengthy questionnaire. I hope you found the questions somewhat interesting. If you would like feedback about the results of the study in general, leave your name and address with the person who supervised this testing. Feedback cannot be given about individual results. Feedback about the results of the study will probably be sent out after April 1983.

Appendix C

MANCOVA, ANCOVA and ANOVA TABLES

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Table A

MANCOVA (Sex by Group) of Religious Variables with Social Desirability as a Covariate

Effect Covariate Variate	Statistic		F	df	p
Belief saliency	SS =	12.45			
	MS =	12.45	2.05	1,220	.15
Group Involvement	SS =	35.73			
	MS =	35.73	1.75	1,220	.19
Prayer frequency	SS =	.41			
	MS =	.41	.13	1,220	.72
Prayer satisfaction	SS =	1.74			
	MS =	1.74	.48	1,220	.49
Effect Sex Variate					
Belief saliency	SS =	.05			
	MS =	.05	.01	1,220	.93
Group involvement	SS =	43.30			
	MS =	43.30	2.12	1,220	.15
Prayer frequency	SS =	5.05			
	MS =	5.05	1.58	1,220	.21
Prayer satisfaction	SS =	.30			
	MS =	.30	.08	1,220	.77
Effect Group Variate					
Belief saliency	SS =	2973.21			
	MS =	1486.61	244.87	2,220	<.0001
Group involvement	SS =	7905.02			
	MS =	3952.51	193.19	2,220	<.0001
Prayer frequency	SS =	1980.61			
	MS =	990.31	309.11	2,220	<.0001
Prayer satisfaction	SS =	1470.49			
	MS =	735.25	204.36	2,220	<.0001

Table A (continued)

Effect Interaction (Sex by Group)

Variate	Statistic		F	df	p
Belief saliency	SS =	12.69			
	MS =	6.31	1.04	2,220	.36
Group involvement	SS =	31.82			
	MS =	15.91	.78	2,220	.46
Prayer frequency	SS =	7.17			
	MS =	3.59	1.12	2,220	.33
Prayer satisfaction	SS =	.63			
	MS =	.32	.09	2,220	.92

Effect Error

Variate		
Belief saliency	SS =	1335.60
	MS =	6.07
Group involvement	SS =	4501.02
	MS =	20.46
Prayer frequency	SS =	704.82
	MS =	3.21
Prayer satisfaction	SS =	791.53
	MS =	3.60

Table B

MANCOVA (Sex by Group) of Nonreligious Cognitive Variables with Social Desirability as a Covariate

Effect / Variate	Statistic		F	df	p
Effect Covariate					
Belief sureness	SS =	2.16			
	MS =	2.16	3.20	1,221	.05
Dogmatism	SS =	5.85			
	MS =	5.85	.81	1,221	.37
Purpose in life	SS =	3492.24			
	MS =	3492.24	5.86	1,221	.02
Effect Sex					
Variate					
Belief sureness	SS =	.09			
	MS =	.09	.17	1,221	.68
Dogmatism	SS =	29.33			
	MS =	29.33	4.04	1,221	.05
Purpose in life	SS =	2619.91			
	MS =	2619.91	4.04	1,221	.04
Effect Group					
Variate					
Belief sureness	SS =	18.72			
	MS =	9.36	17.14	2,221	<.0001
Dogmatism	SS =	403.20			
	MS =	201.60	27.79	2,221	<.0001
Purpose in life	SS =	11233.10			
	MS =	5616.57	9.43	2,221	<.0001
Effect Interaction (Sex by Group)					
Variate					
Belief sureness	SS =	.02			
	MS =	.01	.02	2,221	.98
Belief rigidity	SS =	7.60			
	MS =	3.80	.52	2,221	.59

Table B (continued)

Effect Interaction
(Sex by Group)

Variate	Statistic		F	df	p
Purpose in life	SS =	104.92			
	MS =	52.46	.09	2,221	.92
Effect Error					
Variate					
Belief sureness	SS =	120.69			
	MS =	.55			
Dogmatism	SS =	1603.35			
	MS =	7.25			
Purpose in life	SS =	131663.60			
	MS =	595.76			

Table C

ANCOVA (Sex by Group) of the Use of Prayer as a Coping Skill with Social Desirability as a Covariate

		Statistic	F	df	p
Effect	Covariate				
	SS =	5.39			
	MS =	5.39	10.94	1,222	.001
Effect	Sex				
	SS =	.90			
	MS =	.90	1.84	1,222	.18
Effect	Group				
	SS =	222.17			
	MS =	111.08	225.71	2,222	<.0001
Effect	Interaction (Sex by Group)				
	SS =	.06			
	MS =	.03	.06	2,222	.95
Effect	Error				
	SS =	109.26			
	MS =	.49			

Table D

MANCOVA (Sex by Group) of the Frequency of Use of Coping Skills with Social Desirability as a Covariate

Effect / Covariate Variate	Statistic		F	df	p
Behavioural problem solving	SS =	.50			
	MS =	.50	1.00	1,224	.32
Self-enhancement	SS =	1.28			
	MS =	1.28	2.68	1,224	.10
Cognitive problem solving	SS =	5.09			
	MS =	5.09	7.93	1,224	.005
Distraction	SS =	1.41			
	MS =	1.41	3.19	1,224	.08
Problem redefinition	SS =	3.35			
	MS =	3.35	6.06	1,224	.02
Religious skills	SS =	.08			
	MS =	.08	.19	1,224	.67
Effect Sex					
Variate					
Behavioural problem solving	SS =	.001			
	MS =	.001	.00	1,224	.96
Self-enhancement	SS =	.07			
	MS =	.07	.15	1,224	.70
Cognitive problem solving	SS =	1.00			
	MS =	1.00	1.56	1,224	.21
Distraction	SS =	.31			
	MS =	.31	.70	1,224	.40
Problem redefinition	SS =	.28			
	MS =	.28	.48	1,224	.49
Religious skills	SS =	1.78			
	MS =	1.78	4.41	1,224	.04

Table D (continued)

Effect Group

Variate	Statistic		F	df	p
Behavioural problem solving	SS =	1.15			
	MS =	.57	1.15	2,224	.32
Self-enhancement	SS =	.59			
	MS =	.30	.63	2,224	.54
Cognitive problem solving	SS =	1.88			
	MS =	.94	1.47	2,224	.23
Distraction	SS =	1.12			
	MS =	.56	1.26	2,224	.28
Problem redefinition	SS =	.64			
	MS =	.32	.58	2,224	.56
Religious skills	SS =	141.67			
	MS =	70.84	175.27	2,224	<.0001

Effect Interaction (Sex by Group)

Variate					
Behavioural problem solving	SS =	1.38			
	MS =	.69	1.38	2,224	.25
Self-enhancement	SS =	.76			
	MS =	.38	.80	2,224	.45
Cognitive problem solving	SS =	1.18			
	MS =	.59	.92	2,224	.40
Distraction	SS =	.41			
	MS =	.20	.46	2,224	.63
Problem redefinition	SS =	.43			
	MS =	.22	.39	2,225	.68
Religious skills	SS =	1.81			
	MS =	.90	2.24	2,224	.11

Table D (continued)

Effect Error

Variate	Statistic
Behavioural problem solving	SS = 112.26
	MS = .50
Self-enhancement	SS = 106.54
	MS = .48
Cognitive problem solving	SS = 143.60
	MS = .64
Distraction	SS = 98.93
	MS = .44
Problem redefinition	SS = 123.98
	MS = .55
Religious Skills	SS = 90.53
	MS = .40

Table E

ANCOVA (Sex by Group) of the Perceived Effectiveness of Prayer as a Coping Skill with Social Desirability as a Covariate

Effect		Statistic		F	df	p
Effect	Covariate					
		SS =	.12			
		MS =	.12	.51	1,134	.48
Effect	Sex					
		SS =	.04			
		MS =	.04	.18	1,134	.67
Effect	Group					
		SS =	13.29			
		MS =	6.62	28.18	2,134	<.0001
Effect	Interaction (Sex by Group)					
		SS =	.20			
		MS =	.10	.42	2,134	.66
Effect	Error					
		SS =	31.47			
		MS =	.24			

Note. df greatly reduced as not all subjects used prayer as a coping skill.

Table F

MANCOVA (Sex by Group) of the Perceived Effectiveness of Coping Skills with Social Desirability as a Covariate

Effect Covariate Variate	Statistic		F	df	p
Behavioural problem solving	SS =	.003			
	MS =	.003	.02	1,211	.89
Self-enhancement	SS =	.28			
	MS =	.28	1.71	1,211	.20
Cognitive problem solving	SS =	.27			
	MS =	.27	1.23	1,211	.27
Distraction	SS =	.13			
	MS =	.13	.82	1,211	.37
Problem redefinition	SS =	.23			
	MS =	.23	1.73	1,211	.19
Effect Sex					
Variate					
Behavioural problem solving	SS =	.90			
	MS =	.90	4.96	1,211	.03
Self-enhancement	SS =	.04			
	MS =	.04	.25	1,211	.62
Cognitive problem solving	SS =	1.23			
	MS =	1.23	5.72	1,211	.02
Distraction	SS =	.11			
	MS =	.11	.69	1,211	.41
Problem redefinition	SS =	.22			
	MS =	.22	1.63	1,211	.20

Table F (continued)

Effect Group

Variate	Statistic		F	df	p
Behavioural problem solving	SS =	.92			
	MS =	.46	2.53	2,211	.08
Self-enhancement	SS =	.04			
	MS =	.02	.13	2,211	.88
Cognitive problem solving	SS =	.77			
	MS =	.39	1.80	2,211	.17
Distraction	SS =	.07			
	MS =	.04	.24	2,211	.79
Problem redefinition	SS =	1.58			
	MS =	.79	5.85	2,211	.003

Effect Interaction (Sex by Group)

Variate					
Behavioural problem solving	SS =	.16			
	MS =	.08	.44	2,211	.65
Self-enhancement	SS =	.62			
	MS =	.31	1.89	2,211	.15
Cognitive problem solving	SS =	1.03			
	MS =	.51	2.38	2,211	.10
Distraction	SS =	.33			
	MS =	.16	1.07	2,211	.35
Problem redefinition	SS =	.17			
	MS =	.08	.63	2,211	.53

Effect Error

Variate					
Behavioural problem solving	SS =	38.48			
	MS =	.18			
Self-enhancement	SS =	34.73			
	MS =	.17			

Table F (continued)

Effect Error

Variate	Statistic	
Cognitive problem solving	SS =	45.48
	MS =	.22
Distraction	SS =	32.44
	MS =	.15
Problem redefinition	SS =	28.50
	MS =	.14

Note. The perceived effectiveness of religious skills was not included in this analysis due to the loss of df; that is, as not all subjects used religious skills, its inclusion reduced the number of usable subjects.

Table G

MANCOVA (Sex by Group) of the Perceived Effectiveness of Coping Skills (Showing Religious Skills Only) with Social Desirability as a Covariate (n - 172)

Effect		Statistic		F	df	p
Effect	Covariate	SS =	.31			
		MS =	.31	1.73	1,165	.19
Effect	Sex	SS =	.10			
		MS =	.10	.56	1,165	.46
Effect	Group	SS =	17.18			
		MS =	8.59	46.82	2,165	<.0001
Effect	Interaction (Sex by Group)	SS =	.35			
		MS =	.18	.96	2,165	.39
Effect	Error	SS =	30.28			
		MS =	.18			

Note. This analysis was conducted with the other coping skills as well. Religious skills are reported here alone, however, due to the reduction of usable subjects for the other skills.

Table H

MANCOVA (Sex by Group) of Attributions with Social Desirability as a Covariate

Effect Covariate Variate	Statistic		F	df	p
Controllability	SS =	.14			
	MS =	.14	3.09	1,213	.08
Instability	SS =	.93			
	MS =	.93	3.05	1,213	.08
Externality	SS =	.14			
	MS =	.14	.61	1,213	.44
Supernatural cause	SS =	.15			
	MS =	.15	.87	1,213	.35
Positive valence	SS =	.05			
	MS =	.05	.16	1,213	.69
Supernatural cure	SS =	.21			
	MS =	.21	.83	1,213	.36
Internal cure	SS =	.46			
	MS =	.46	1.20	1,213	.28
External cure	SS =	.14			
	MS =	.14	.37	1,213	.54
Effect Sex Variate					
Controllability	SS =	.91			
	MS =	.91	4.15	1,213	.04
Instability	SS =	.34			
	MS =	.34	1.13	1,213	.29
Externality	SS =	.19			
	MS =	.19	.80	1,213	.37
Supernatural cause	SS =	.14			
	MS =	.14	.84	1,213	.36
Positive valence	SS =	.17			
	MS =	.17	.61	1,213	.44
Supernatural cure	SS =	.87			
	MS =	.87	3.48	1,213	.06

Table H (continued)

Variate	Statistic		F	df	p
Effect Sex					
Internal cure	SS =	.09			
	MS =	.09	.22	1,213	.64
External cure	SS =	.25			
	MS =	.25	.70	1,213	.40
Effect Group					
Variate					
Controllability	SS =	.22			
	MS =	.11	.49	2,213	.61
Instability	SS =	2.30			
	MS =	1.15	3.78	2,213	.02
Externality	SS =	.72			
	MS =	.36	1.56	2,213	.21
Supernatural cause	SS =	34.90			
	MS =	17.50	103.03	2,213	<.0001
Positive valence	SS =	.78			
	MS =	.39	1.36	2,213	.26
Supernatural cure	SS =	61.28			
	MS =	30.64	122.63	2,213	<.0001
Internal cure	SS =	3.08			
	MS =	1.54	4.04	2,213	.02
External cure	SS =	5.01			
	MS =	2.51	6.92	2,213	.001
Effect Interaction (Sex by Group)					
Variate					
Controllability	SS =	1.78			
	MS =	.89	4.09	2,213	.02
Instability	SS =	3.29			
	MS =	1.65	5.42	2,213	.005
Externality	SS =	.15			
	MS =	.07	.21	2,213	.73
Supernatural cause	SS =	.70			
	MS =	.35	.21	2,213	.82

Table H (continued)

Effect Interaction
(Sex by Group)

Variate	Statistic		F	df	p
Positive valence	SS =	.13			
	MS =	.07	.23	2,213	.80
Supernatural cure	SS =	.30			
	MS =	.15	.60	2,213	.55
Internal cure	SS =	.01			
	MS =	.006	.01	2,213	.99
External cure	SS =	.65			
	MS =	.32	.89	2,213	.41
Effect Error					
Variate					
Controllability	SS =	46.43			
	MS =	.22			
Instability	SS =	64.68			
	MS =	.30			
Externality	SS =	49.10			
	MS =	.23			
Supernatural cause	SS =	36.07			
	MS =	.17			
Positive valence	SS =	60.76			
	MS =	.29			
Supernatural cause	SS =	53.22			
	MS =	.25			
Internal cure	SS =	81.24			
	MS =	.38			
External cure	SS =	77.13			
	MS =	.36			

Table I

MANCOVA (Sex by Group) of Network Religiousness, Network Density and the Number of People in the Network with Social Desirability as a Covariate

Effect Covariate Variate	Statistic		F	df	p
Religiousness	SS =	.10			
	MS =	.10	0.00	1,212	.99
Density	SS =	.06			
	MS =	.06	.01	1,212	.94
Number of people	SS =	31.21			
	MS =	31.21	1.21	1,212	.27
Effect Sex					
Variate					
Religiousness	SS =	1389.10			
	MS =	1389.10	2.86	1,212	.09
Density	SS =	.42			
	MS =	.42	.04	1,212	.85
Number of people	SS =	37.38			
	MS =	37.38	1.45	1,212	.23
Effect Group					
Variate					
Religiousness	SS =	98629.80			
	MS =	49314.90	101.44	2,212	<.0001
Density	SS =	33.60			
	MS =	16.80	1.49	2,212	.23
Number of people	SS =	173.32			
	MS =	86.66	3.36	2,212	.04

Table I (continued)

Effect Interaction
(Sex by Group)

Variate	Statistic		F	df	p
Religiousness	SS =	6564.85			
	MS =	3272.93	6.73	2,212	.002
Density	SS =	9.49			
	MS =	4.74	.42	2,212	.66
Number of people	SS =	96.45			
	MS =	48.23	1.87	2,212	.16
Effect Error					
Variate					
Religiousness	SS =	103062.94			
	MS =	486.15			
Density	SS =	2383.35			
	MS =	11.24			
Number of people	SS =	5475.71			
	MS =	25.83			

Table J

MANCOVA (Sex by Group) of the Number of Biological and Nonbiological People in the Network with Social Desirability as a Covariate

Effect / Variate	Statistic		F	df	p
Effect Covariate					
Biological	SS =	.19			
	MS =	.19	.03	1,223	.86
Nonbiological	SS =	42.74			
	MS =	42.74	2.11	1,223	.15
Effect Sex					
Biological	SS =	30.33			
	MS =	30.33	4.87	1,223	.03
Nonbiological	SS =	2.85			
	MS =	2.85	.14	1,223	.71
Effect Group					
Biological	SS =	32.36			
	MS =	16.18	2.60	2,223	.08
Nonbiological	SS =	41.98			
	MS =	20.99	1.30	2,223	.36
Effect Interaction (Sex by Group)					
Biological	SS =	4.10			
	MS =	2.10	.34	2,223	.71
Nonbiological	SS =	76.48			
	MS =	38.24	1.88	2,223	.15
Effect Error					
Biological	SS =	1389.92			
	MS =	6.23			
Nonbiological	SS =	4524.71			
	MS =	20.29			

Table K

MANCOVA (Sex by Group) of Social Provisions (Both Overall and by Each Provision) with Social Desirability as a Covariate

Effect Covariate Variate	Statistic		F	df	p
Social provisions	SS =	726.04			
	MS =	726.04	7.01	1,221	.009
Guidance	SS =	9.31			
	MS =	9.31	.38	1,221	.54
Reassurance of worth	SS =	30.22			
	MS =	30.22	10.41	1,221	.001
Social integration	SS =	24.36			
	MS =	24.36	7.40	1,221	.007
Attachment	SS =	39.30			
	MS =	39.30	6.13	1,221	.01
Opportunities for nuturance	SS =	18.22			
	MS =	18.22	4.69	1,221	.03
Reliable alliance	SS =	.04			
	MS =	.04	.01	1,221	.91
Effect Sex Variate					
Social provisions	SS =	868.63			
	MS =	868.63	8.38	1,221	.004
Guidance	SS =	4.41			
	MS =	4.41	.18	1,221	.67
Reassurance of worth	SS =	2.40			
	MS =	2.40	.83	1,221	.36
Social integration	SS =	.03			
	MS =	.03	.01	1,221	.93
Attachment	SS =	63.73			
	MS =	63.73	9.94	1,221	.002

Table K (continued)

Variate	Statistic		F	df	p
Effect Sex					
Opportunities for nurturance	SS =	22.78			
	MS =	22.78	5.86	1,221	.02
Reliable alliance	SS =	14.55			
	MS =	14.55	4.70	1,221	.03
Effect Group					
Variate					
Social provisions	SS =	606.76			
	MS =	303.38	2.93	2,221	.06
Guidance	SS =	152.15			
	MS =	76.07	3.10	2,221	.05
Reassurance of worth	SS =	8.00			
	MS =	4.00	1.38	2,221	.25
Social integration	SS =	14.91			
	MS =	7.45	2.26	2,221	.11
Attachment	SS =	29.13			
	MS =	14.56	2.27	2,221	.11
Opportunities for nurturance	SS =	63.22			
	MS =	31.61	8.13	2,221	.0004
Reliable alliance	SS =	20.16			
	MS =	10.08	3.26	2,221	.04
Effect Interaction (Sex by Group)					
Variate					
Social provisions	SS =	268.71			
	MS =	134.36	1.30	2,221	.28
Guidance	SS =	107.78			
	MS =	53.89	2.20	2,221	.11
Reassurance of worth	SS =	7.26			
	MS =	3.63	1.25	2,221	.29
Social integration	SS =	4.54			
	MS =	2.27	.69	2,221	.50

Table K (continued)

Effect Interaction
(Sex by Group)

Variate	Statistic		F	df	p
Attachment	SS =	36.64			
	MS =	18.32	2.86	2,221	.06
Opportunities for nurturance	SS =	6.08			
	MS =	3.04	.78	2,221	.46
Reliable alliance	SS =	39.01			
	MS =	19.50	6.30	2,221	.002

Effect Error

Variate		
Social provisions	SS =	22904.07
	MS =	103.64
Guidance	SS =	5421.24
	MS =	24.53
Reassurance of worth	SS =	641.61
	MS =	2.90
Social integration	SS =	727.64
	MS =	3.29
Attachment	SS =	1417.49
	MS =	6.41
Opportunities for nurturance	SS =	858.91
	MS =	3.89
Reliable alliance	SS =	684.04
	MS =	3.10

Table L

MANCOVA (Sex by Group) of the UCLA Loneliness Scale and the Global Self-rating with Social Desirability as a Covariate

Effect / Covariate Variate	Statistic		F	df	p
UCLA scale	SS =	639.67			
	MS =	639.67	8.36	1,223	.004
Self-rating	SS =	1.02			
	MS =	1.02	1.66	1,223	.20
Effect Sex					
Variate					
UCLA scale	SS =	480.99			
	MS =	480.99	6.29	1,223	.01
Self-rating	SS =	.13			
	MS =	.13	.21	1,223	.65
Effect Group					
Variate					
UCLA scale	SS =	171.40			
	MS =	85.70	1.21	2,223	.33
Self-rating	SS =	3.12			
	MS =	1.56	2.55	2,223	.08
Effect Interaction (Sex by Group)					
Variate					
UCLA scale	SS =	88.86			
	MS =	44.43	.58	2,223	.56
Self-rating	SS =	1.43			
	MS =	.72	1.17	2,223	.31
Effect Error					
Variate					
UCLA scale	SS =	17053.15			
	MS =	76.47			
Self-rating	SS =	136.87			
	MS =	.61			

Table M

ANCOVA (Sex by Group) of the Chronicity of Loneliness with Social Desirability as a Covariate (n = 51)

Effect	Statistic		F	df	p
Covariate	SS =	.79			
	MS =	.79	.83	1,44	.37
Effect Sex	SS =	5.41			
	MS =	5.41	5.64	1,44	.02
Effect Group	SS =	2.03			
	MS =	1.02	1.06	2,44	.36
Effect Interaction (Sex by Group)	SS =	2.93			
	MS =	1.47	1.53	2,44	.23
Effect Error	SS =	42.15			
	MS =	.96			

Note. df is greatly reduced as chronicity ratings are available only for those subjects who indicated that they felt lonely at the time of testing.

Table N

MANCOVA (Sex by Group) of the Items of the PIL Test with Social Desirability as a Covariate

Effect Covariate

Variate	Statistic		F	df	p
Exuberant	SS =	3.72			
	MS =	3.72	3.50	1,217	.06
Exciting	SS =	3.14			
	MS =	3.14	1.96	1,217	.16
New	SS =	1.64			
	MS =	1.64	.86	1,217	.36
Enjoyable	SS =	2.84			
	MS =	2.84	1.84	1,217	.18
Fulfilling	SS =	1.83			
	MS =	1.83	1.89	1,217	.17
Worthwhile	SS =	2.34			
	MS =	2.34	1.24	1,217	.27
Pleasurable	SS =	4.94			
	MS =	4.94	3.26	1,217	.07
Clear goals	SS =	.09			
	MS =	.09	.08	1,217	.78
Life meaningful	SS =	2.35			
	MS =	2.35	2.60	1,217	.11
Progress	SS =	.03			
	MS =	.03	.03	1,217	.86
Reason for life	SS =	21.17			
	MS =	21.17	8.47	1,217	.004
World meaningful	SS =	10.19			
	MS =	10.19	5.44	1,217	.02
Meaning possible	SS =	1.94			
	MS =	1.94	1.33	1,217	.25
Have purpose	SS =	.0007			
	MS =	.0007	0.00	1,217	.98
Plans when retire	SS =	2.19			
	MS =	2.19	1.51	1,217	.22

Table N (continued)

Effect Covariate Variate	Statistic		F	df	p
Responsible	SS =	4.22			
	MS =	4.22	5.09	1,217	.03
Free to choose	SS =	19.52			
	MS =	19.52	7.97	1,217	.005
Prepared for death	SS =	9.83			
	MS =	9.83	3.75	1,217	.05
No suicidal thoughts	SS =	9.13			
	MS =	9.13	2.66	1,217	.10
In control of life	SS =	1.94			
	MS =	1.94	1.33	1,217	.25
Effect Sex Variate					
Exuberant	SS =	10.74			
	MS =	10.74	10.09	1,217	.002
Exciting	SS =	3.56			
	MS =	3.56	2.23	1,217	.14
New	SS =	13.55			
	MS =	13.55	7.05	1,217	.009
Enjoyable	SS =	.15			
	MS =	.15	.10	1,217	.75
Fulfilling	SS =	7.86			
	MS =	7.86	8.10	1,217	.005
Worthwhile	SS =	12.85			
	MS =	12.85	6.80	1,217	.01
Pleasurable	SS =	5.94			
	MS =	5.94	3.93	1,217	.05
Clear goals	SS =	1.64			
	MS =	1.64	1.44	1,217	.23
Life meaningful	SS =	2.22			
	MS =	2.22	2.45	1,217	.12
Progress	SS =	6.02			
	MS =	6.02	6.10	1,217	.01

Table N (continued)

Effect Sex Variate	Statistic		F	df	p
Reason for life	SS =	.03			
	MS =	.03	.01	1,217	.92
World meaningful	SS =	.17			
	MS =	.17	.09	1,217	.76
Meaning possible	SS =	.82			
	MS =	.82	.57	1,217	.45
Have purpose	SS =	4.84			
	MS =	4.84	4.00	1,217	.05
Plans when retire	SS =	12.57			
	MS =	12.57	8.66	1,217	.004
Responsible	SS =	1.24			
	MS =	1.24	1.50	1,217	.22
Free to choose	SS =	7.86			
	MS =	7.86	3.21	1,217	.08
Prepared for death	SS =	10.39			
	MS =	10.39	3.96	1,217	.05
No suicidal thoughts	SS =	.15			
	MS =	.15	1.79	1,217	.18
In control of life	SS =	.35			
	MS =	.35	.14	1,217	.71
Effect Group Variate					
Exuberant	SS =	7.63			
	MS =	3.81	3.58	2,217	.03
Exciting	SS =	29.22			
	MS =	14.61	9.13	2,217	.0002
New	SS =	43.80			
	MS =	21.90	11.39	2,217	<.0001
Enjoyable	SS =	.25			
	MS =	.13	.08	2,217	.92
Fulfilling	SS =	24.47			
	MS =	12.23	12.61	2,217	<.0001

Table N (continued)

Effect Group

Variate	Statistic		F	df	p
Worthwhile	SS =	10.30			
	MS =	10.30	2.73	2,217	.07
Pleasurable	SS =	8.39			
	MS =	4.19	2.77	2,217	.06
Clear goals	SS =	1.79			
	MS =	.90	.79	2,217	.46
Life meaningful	SS =	33.80			
	MS =	16.90	18.69	2,217	<.0001
Progress	SS =	2.98			
	MS =	1.49	1.51	2,217	.22
Reason for life	SS =	77.43			
	MS =	36.72	15.50	2,217	<.0001
World meaningful	SS =	21.04			
	MS =	10.52	5.61	2,217	.004
Meaning possible	SS =	33.83			
	MS =	16.91	11.60	2,217	<.0001
Have purpose	SS =	15.22			
	MS =	7.61	6.27	2,217	.002
Plans when retire	SS =	1.87			
	MS =	.93	.64	2,217	.53
Responsible	SS =	.79			
	MS =	.40	.48	2,217	.62
Free to choose	SS =	20.44			
	MS =	10.22	4.17	2,217	.02
Prepared for death	SS =	154.11			
	MS =	77.05	29.39	2,217	<.0001
No suicidal thoughts	SS =	19.24			
	MS =	9.62	2.81	2,217	.06
In control of life	SS =	119.49			
	MS =	59.75	23.16	2,217	<.0001

Table N (continued)

Effect Interaction
(Sex by Group)

Variate	Statistic		F	df	p
Exuberant	SS =	6.07			
	MS =	3.03	2.85	2,217	.06
Excited	SS =	2.47			
	MS =	1.24	.77	2,217	.46
New	SS =	6.22			
	MS =	3.11	1.62	2,217	.21
Enjoyable	SS =	10.13			
	MS =	5.06	3.28	2,217	.04
Fulfilling	SS =	5.16			
	MS =	2.58	2.66	2,217	.07
Worthwhile	SS =	.33			
	MS =	.17	.09	2,217	.92
Pleasurable	SS =	.18			
	MS =	.09	.06	2,217	.94
Clear goals	SS =	1.06			
	MS =	.53	.46	2,217	.63
Life meaningful	SS =	1.28			
	MS =	.64	.71	2,217	.50
Progress	SS =	1.82			
	MS =	.91	.92	2,217	.40
Reason for life	SS =	5.07			
	MS =	2.54	1.01	2,217	.36
World meaningful	SS =	.56			
	MS =	.28	.15	2,217	.86
Meaning possible	SS =	1.73			
	MS =	.87	.59	2,217	.55
Have purpose	SS =	3.19			
	MS =	1.60	1.32	2,217	.27
Plans when retire	SS =	1.73			
	MS =	.87	.60	2,217	.55
Responsible	SS =	.16			
	MS =	.08	.10	2,217	.91

Table N (continued)

Effect Interaction
(Sex by Group)

Variate	Statistic		F	df	p
Free to choose	SS =	.20			
	MS =	.10	.04	2,217	.96
Prepared for death	SS =	13.14			
	MS =	6.70	2.56	2,217	.08
No suicidal thoughts	SS =	5.77			
	MS =	2.89	.84	2,217	.43
In control of life	SS =	5.97			
	MS =	2.99	1.16	2,217	.32

Effect Error

Variate		
Exuberant	SS =	231.05
	MS =	1.06
Exciting	SS =	347.28
	MS =	1.60
New	SS =	417.02
	MS =	1.92
Enjoyable	SS =	334.85
	MS =	1.54
Fulfilling	SS =	210.61
	MS =	.97
Worthwhile	SS =	409.77
	MS =	1.89
Pleasurable	SS =	328.59
	MS =	1.21
Clear goals	SS =	246.52
	MS =	1.14
Life meaningful	SS =	196.25
	MS =	.90
Progress	SS =	214.18
	MS =	.99

Table N (continued)

Effect Error

Variate	Statistic	
Reason for life	SS =	542.16
	MS =	2.50
World meaningful	SS =	406.54
	MS =	1.87
Meaning possible	SS =	316.34
	MS =	1.46
Have purpose	SS =	263.32
	MS =	1.21
Plans when retire	SS =	314.79
	MS =	1.45
Responsible	SS =	179.71
	MS =	.83
Free to choose	SS =	531.82
	MS =	2.45
Prepared for death	SS =	568.99
	MS =	2.62
No suicidal thoughts	SS =	743.87
	MS =	3.43
In control of life	SS =	559.74
	MS =	2.58

Table O

ANOVA (Sex by Group) of the Social Desirability Scale

	Statistic	F	df	p
Effect Sex				
	SS = 0.00			
	MS = 0.00	0.0	1,225	.99
Effect Group				
	SS = 33.70			
	MS = 16.85	3.25	2,225	.04
Effect Interaction (Sex by Group)				
	SS = 12.71			
	MS = 6.35	1.22	2,225	.30
Effect Error				
	SS = 1167.94			
	MS = 5.19			

Appendix D

Group Differences on Items of the PIL Test

Table A

Group Differences on Items of the PIL Test as Structured by Factor Analysis

Factor	Group means			
Satisfaction	Nonrel.	Noncon.	Cons.	p
Items				
exuberant	4.95	4.77	5.18	.03
exciting	4.75	4.47	5.31	.0002
new	4.44	4.20	5.22	<.0001
enjoyable	5.25	5.32	5.24	ns
fulfilling	5.16	5.00	5.75	<.0001
worthwhile	5.01	5.09	5.49	.07
pleasurable	5.22	4.50	5.03	.06
Meaning				
Items				
clear goals	5.86	5.90	6.08	ns
life meaningful	5.56	5.70	6.43	<.0001
progress	5.00	4.86	5.14	ns
reason for life	4.33	4.79	5.65	<.0001
world meaningful	4.22	4.22	4.81	.004
meaning possible	5.00	5.18	5.89	<.0001
have purpose	5.22	5.32	5.83	.002
Remaining items				
plans when retire	6.04	6.06	6.22	ns
responsible	5.89	5.79	5.89	ns
free to choose	4.82	4.51	5.15	.02
prepared for death	4.11	4.06	5.81	<.0001
no suicidal thoughts	5.16	5.18	5.79	.06
in control of life	5.45	5.15	3.64	<.0001