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2003

SPIRITUALITY AND THE QUALITY OF LIFE:
RELATIONSHIPS BETWEEN EXISTENTIAL WELL-BEING
AND ASPECTS OF LIFE FUNCTIONING

BY

BETTINA BIRGIT HÖPPNER

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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IN
PSYCHOLOGY

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Abstract

The focus of this thesis is the role of spirituality within the quality of life. This role is explored in a macro-level approach by investigating the overall relationships between existential well-being, of which spirituality is seen as a part of, and life functioning. This macro-level investigation is then followed by a more detailed, variable specific micro-level delineation of relationships.

Recognizing the fact that spirituality cannot be discussed without an implicit reference to the overall concept of religion, the connections between spirituality and religion is explicitly discussed, although this connection is not the focus of this study. Thus, by way of providing the proper context within which the findings of this thesis are to be located, this thesis discusses the recent increased interest in spirituality and religion within psychological literature, current trends in the research regarding both spirituality and religion, including the emerging schism between these two topics, and draws attention to the need for clarity and sophistication in the discussion of any concept of spiritual or religious interest.

Empirical data is presented on a sample of 419 undergraduate students (273 female) of a New England state university gathered for the purposes of a Student Affairs quality of life assessment. As part of the preliminary analyses, the development of an existential spirituality scale is presented. The main analysis, a canonical correlation analysis between psycho-existential variables (i.e. purpose in life, self-esteem, satisfaction with life, existential spirituality, social extrinsic religiosity and personal extrinsic religiosity) and selected life functioning variables pertaining to undergraduate students, revealed one dominant relationship between

these two groups and two marginal relationships. The dominant relationship ($R^2 = .60$) describes a link between high self-esteem, purpose in life, and satisfaction with life on the one hand, and high coping skills, family affect, family communication, social responsibility, and health, and low experienced stress and family conflict on the other hand.

The role of existential spirituality in the macro-level connection between existential well-being and life functioning was found to be of marginal importance. The micro-level investigation was conducted through follow-up multiple regressions of the life functioning variables. Here, the findings of the macro level investigation were echoed by the lack of significance of spirituality in predicting most of the life-functioning variables, with the only exception being social responsibility.

Future directions and limitations of this study are discussed.

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Tell me not, in mournful numbers,

“Life is but an empty dream!”

For the soul is dead that slumbers,

And things are not what they seem.

- Henry Wadsworth Longfellow

“A Psalm of Life”

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Spirituality and the Quality of Life:

Relationships Between Existential Well-being and Aspects of Life-functioning

The focus of this thesis is the role of spirituality in life functioning, or more generally, as it pertains to the quality of life, loosely defined. Thus, it is the goal of this paper to explore the relationships between spirituality and the quality of life.

Before this goal can be pursued in greater detail, however, some general background has to be provided, which provides the basis for this effort.

Recent years have witnessed a revival of interest in spiritual and religious matters within the field of psychology. The initial interest was pioneered by such notable psychologists as William James (1902), G. Stanley Hall (1917), and Edwin Starbuck (1899) at the turn of last century, during the birth-hours of psychology. In the decades that followed their enthusiasm for this area, interest in spiritual and religious matters diminished until it reached virtual non-existence during the heyday of behaviorism. The advent of humanistic psychology during the 1960s, with its view of the human being as a holistic, meaningful entity, put such complex concepts as spirituality and religiosity back within the grasp of psychology, yet psychology as a whole continued to bypass this area.

Now, one century after the initial interest in spiritual and religious matters, psychology's interest seems to have reawakened. The reasons for this resurgence of interest are complex. Two reasons, however, stand out as being cited most often. First, the interest in studying spiritual matter is attributed to the increased longevity of individuals. Here, it is believed that spiritual matters increase in salience as the average

life-expectancy increases, a trend which is evidenced by an increased concern with spiritual matters in later life (e.g. Erikson, Erikson, & Kivnick, 1986; Koenig, 1992). Second, the interest in studying spirituality is also commonly attributed to the pervasiveness and persistent nature of religious belief, practice, and experience among, for instance, the US populace (Hill et al., 2000). Other suggested reasons include a lack of spiritual preparation to cope with life in today's technologically fast paced, information society (e.g. Damon, 1995, Goleman, 1995; Coles, 1997), and an increased experience of socially disconnected, more fragmented personal lives, with little sense of connectedness and community (e.g. Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; House, Landis, & Umberton, 1988).

Thus, the reasons for the re-awakening of the interest in spiritual and religious matters appear to be manifold and complex. Regardless of their nature, however, the evidence for the existence of this trend is quite compelling. For illustrative purposes one may, for instance, consider current publication practices within the field of psychology, as presented in Figure 1. Here, the number of articles on the general topic area of spirituality and religion currently (November 2002) available via the psychological reference engine PsycINFO are presented by their year of publication. In order to represent the general topic area in as concrete terms as possible, three different, frequently-used keywords from this topic area were chosen, by which the publication trends were mapped. Namely, these keywords were spirituality, religiosity, and religion.

As representative as these three keywords are, they come with a caveat. Namely, the definition and thus the use of these keywords changes slightly from author

Figure 1. Publication Rate of Articles on Spirituality, Religiosity, and Religion

to author. Different authors interpret these terms slightly differently based on what their specific research goals are or how they have conceptualized these terms. Unfortunately, this means that no straightforward definition of these terms can be given here, as it does not exist. Instead, a general description of the use of these terms in psychological research is given here.

First, the keyword “religion” within psychological research is the broadest of the three keywords. For the most part, religion has been studied as a demographic variable within psychology. Here, attention has been paid to specific denominations and to the factors that are associated with membership to them. In this sense, research using the keyword “religion” tends to be more general and somewhat static. As the concept of religion has long been relevant within psychology, publication trends regarding this term are mapped in Figure 1 as a frame of reference.

Second, the keyword “religiosity” generally denotes a more dynamic understanding, conceptualization and study of matters pertaining to religion. Specifically, the concept of religiosity describes a person’s subjective attitude towards religion. In essence, it describes the nature and extent to which a person has integrated religion into his or her life, both in terms of social aspects and inner-personal feelings. It denotes the personal meaning individuals derive from religion. As such, the concept of religiosity appears to be a useful bridge between the general content area of religion and the specific topic of spirituality.

Third, and last, the keyword “spirituality” generally accompanies research articles that focus on spiritual matters without confining them to a religious arena. Thus, these articles tend to focus in on ideas that are obviously addressed by various

religions, such as the belief in a higher being or an individual's transcendental existence, but choose to approach these topics without zeroing in on a particular religion.

In Figure 1 the publication trends in regards to these three keywords are mapped over the last century. Here, several things can be noted. First, it should be noted that overall the publication rates in the general content area of spirituality and religion have markedly increased since the beginning of the 1980s. This is true for spirituality, religiosity, and religion.

The second interesting note is the 'spikes' in the publication rate of articles discussing religion. Prior to the 1980s, there are two sudden and short-lived increases in the publication rates regarding religion, one in the late 1920s – early 1930s, and one in the late 1960s. The abnormally high publication rate of articles discussing religion in the late 1960s corresponds nicely to the advent of humanistic psychology, as pointed out earlier. This movement in psychology, of course, does not happen in isolation. Rather, it is simply an expression of the larger historical context, as presented in Figure 2. Here, it can be easily seen, for instance, that the publication rate regarding religion increases after the Cuban Missile Crisis (1962) and during the Vietnam War.

Even more interesting, from a psychological research perspective, is the following decline of the publication rate regarding religion, and the corresponding increase of the publication rate regarding religiosity. Before this time, the concept of religiosity was discussed in no more than a handful of articles per year, and more often than not in none at all. Yet at this point, religiosity comes into existence, most likely propelled forward through the publication of Allport and Ross' (1967) paper on

Figure 2. Publication rates with historical context.

extrinsic and intrinsic religiosity. From this time forward, publication rates of articles discussing religiosity continue to increase.

By far the most interesting theme to note in Figure 1, from the perspective of this thesis, is the ‘birth’ of the concept of spirituality within psychology in the early 1980s. Here, papers with the keyword spirituality are published for the first time, excepting some isolated exceptions during the first 80 years of the century. After the onset of publications on spirituality, the publication rate steadily increases during the early 1980s, a trend similar to that of the publication rates regarding the keywords religion and religiosity. In the early 1990s, after the fall of the Berlin Wall in 1989, however, the publication rate regarding spirituality skyrockets. Both the publication rates regarding religion and religiosity continue to increase over those years as well, but they do not increase as rapidly as the publication rate regarding spirituality. In fact, by 2001 the rate of articles published on spirituality is very close to the rate of articles published on religion overall, a publication volume which was never reached regarding the concept of religiosity.

Viewed in that light, two speculations seem plausible: first, that that some aspect of the concept of spirituality has a more general appeal to modern-day researchers and readers than religiosity, as evidenced by the greater publication rate of spirituality; and second, that this appeal is not subsumed by the overall topic area of religion, as evidenced by the lack of impact of the publication rate regarding spirituality on the publication rate regarding religion.

Apart from the tremendous increase in the publication volume regarding all three keywords and, thereby, spiritual and religious matters in general, it should also be noted

that this publication volume is not limited to less-respected journals. In fact, articles on spiritual and religious matters also start to appear in prestigious scholarly journals (e.g. *American Journal of Public Health*, *Journal of the American Medical Association*, *Journal of Consulting and Clinical Psychology*, and *Journal of Personality and Social Psychology*), as Thoresen (1999) notes. Furthermore, special issues on spirituality, religion, and health are featured by several journals (e.g. *Journal of Health Psychology*, *Journal of Adult Development*).

In view of this obviously increased attention spirituality and religion receive within psychology, it is somewhat surprising that some authors maintain that the empirical study of spirituality, religiosity, and religious matters continues to fight an uphill battle to gain acceptance within the broader discipline of psychology (Wulff, 1996; Hill, 1999). According to these researchers, empirical and theoretical conservatism still hold the sway. This point is well taken if one considers, for instance, the publication patterns of five relevant, prestigious American Psychological Association (APA) journals from their earliest publication to date, as illustrated in Table 1.

Table 1. Publications in APA journals concerning spirituality, religiosity, and religion.

<i>APA Journal</i>	<i>Keyword</i>		
	Spirituality	Religiosity	Religion
Journal of Consulting and Clinical Psychology	2	9	17
Journal of Counseling Psychology	2	9	26
Health Psychology	0	1	1
Journal of Personality and Social Psychology	2	15	38
Psychology and Aging	0	4	0
Total	6	38	82

Note: Current as of October 22, 2002.

Here, it is noticeable that these APA journals overall appear to favor religious themes (i.e. religiosity and religion) over spiritual themes. Given the recent increase in interest in spirituality as shown in Figure 1, it is somewhat curious that the APA publication trends do not reflect the general trend at all. In fact, the pattern illustrated in Table 1, with 5% of the relevant papers focusing on spirituality, 30% on religiosity, and 65% on religion, resembles the publication pattern of the 1980s more closely than the publication ratios of recent years. As such, this pattern may suggest empirical conservatism.

Also of note is the complete absence of spirituality as a topic of interest from the journals *Psychology and Aging* and *Health Psychology*. Considering that one of the most cited reasons for the reawakening of psychological interest in spirituality and religion is, as mentioned earlier, the increased longevity of individuals and their increased concern with spiritual matters in later life (e.g. Erikson, Erikson, & Kivnick, 1986; Koenig, 1992), it seems curious that journals devoted to health and aging appear to be bypassing this topic. After all, in the broader literature considerable attention has been given in the past to the possible connection between health, both physical and mental, and some mixture of spirituality, religiosity, and religion (for a detailed review, refer to Levin, 1994; for a more current, succinct review, refer to Thoresen, 1999). Given that growing body of literature, it seems almost ironic that the only article published in *Health Psychology* regarding religion focuses on the lack of association between religious involvement and mortality (Sloan & Bagiella, 2001).

A schism between spirituality and religion

Mapping publication trends of spirituality, religiosity, and religion as was done in Figure 1 nicely illustrates the recent psychological interest in spiritual and religious matters. Such an exercise, however, also draws attention to the apparent schism between the discussion of spirituality and the discussion of religion (which religiosity is a part of). To understand this schism, it is necessary to recognize that the emergence of spirituality as a noteworthy concept on its own is a recent development. In fact, it is quite possibly part of a larger socio-cultural trend away from institutionalization and towards individualization (Pargament, 1999). Historically, spirituality did not 'exist' separately from religion. Instead, the nature of one's spiritual experience was defined by one's religion. After all, commonly the only access to spiritual ideas and experiences were offered through religious leaders, who instructed individuals and communities in their spiritual beliefs. Thus, the choosing of one's religion was automatic, a pragmatic result of one's family, geographic location and societal status. In today's society, however, where the flow of communication and the mobility of individuals are both greatly improved, the embracing of a religion has become a much more personal effort. It has in fact become so personal that now individuals appear to be picking and choosing from a variety of religious and spiritual offerings, a trend that Bibby (1987) duped 'religion à la carte'.

One result of this trend is that one's spirituality no longer has to be defined by one's religion. Another result is that now, after the emergence of spirituality as a stand-alone construct, the link between spirituality and religion is not as obvious as it used to be. Consequently, assertions, that being spiritual does not imply being religious, and

being religious does not mean to be spiritual, have become commonplace in published articles (Pargament, 1999). Coupled with these clarifications is a growing body of literature illuminating just what these differences are that have provoked such assertions (e.g. Zinnbauer, Pargament, Scott, 1999; Hill et al., 2000;).

Applied highlights of these differences may be found in the research linking spirituality and/or religion to happiness and well-being. Here, the majority of the research points to a positive association between some form of spirituality or religiosity and happiness and well-being (Ellison, 1991; Harvey, Bond & Greenwood, 1991; Kehn, 1995; Levin & Taylor, 1998; Emmons, Cheung & Tehrani, 1998; French & Joseph, 1999). Nonetheless, some studies suggest the lack of any relationship (Lewis, Lanigan, Joseph & de Fockert, 1997; Lewis, 2002), or even a negative association between these two constructs (Landau, Beit-Hallahmi & Levy, 1998). Thus, it appears as though the topic of spirituality and religiosity may be more complex than an argument over positive versus negative associations might suggest (Kau & Phua, 2001). This complexity is believed to be based on a conceptual difference between spirituality and religion, a difference that is rarely made apparent in the literature, even though the effects of the one may be ‘confounding’ the study of the other (e.g. Sloan, Bagiella, & Powell, 1999; Daaleman, Kuckelmann Cobb & Frey, 2001).

For instance, many studies have emphasized the importance of a belief in a God-like figure on physical as well as psychological well-being. However, these studies have tended to examine the belief in God from a religious perspective (Johnston, Sandler & Griffin-Shelley, 1987; Maton, 1989; Spilka, 1989; Idowu, 1992; Blaine & Crocker, 1995; Buri & Mueller, 1993). A religious context, however, makes it unclear,

which attitude exactly leads to the psychological and/or physiological well-being of the individual. Is it the social aspect of practicing a religion that improves the quality of life? Is it the comfort the routine of engaging in religious activities may be offering? Or is it something completely different that invokes this effect?

However, even though many hard-to-reconcile findings in the literature suggest a substantial complexity to the topic of spirituality and religion, these two concepts are rarely teased apart in the research.

Despite these shortcomings, it has become abundantly clear in recent years that some mixture of spirituality and religion has a positive association with a wide range of positive states, abilities, and attitudes, such as mental health (Ventis, 1995), coping ability (Pargament, 1997), self-esteem (Ellison, 1993), and the realization of personal strengths (Maton & Salem, 1995). Some part of this 'mixture' also has salience to recovery from such diverse things as divorce (Nathanson, 1995), homelessness (Montgomery, 1994), sexual assault (Kennedy, Davis & Taylor, 1998), and substance use (Muffler, Langrod & Larson, 1992). In terms of physical health, this mixture of spirituality and religion has been demonstrated to lower the rates of heart disease, cirrhosis, emphysema, myocardial infarction, strokes, kidney failures, cancer mortality, cardiac surgery mortality, and overall mortality (Seybold & Hill, 2001). Further, it has shown effects in lowering systolic and diastolic blood pressure as well as increasing positive health habits and longevity (Seybold & Hill, 2001). (For a more detailed discussion, please refer to Levin, 1994; Larson, Swyers, & McCullough, 1998).

The problem, from a conceptual point of view, is simply the lack of a clear differentiation between the effects of the overall concepts of spirituality and religion.

For the most part the literature on spirituality within psychology is as inextricably as unnecessarily interwoven with the literature on the general topic area of religion. This trend is evidenced by the perpetual habit of researchers to fail to differentiate between the effects of religion and spirituality (Turner, Lukoff, Barnhouse & Lu, 1995) and to use such terms as 'spirituality', 'religiosity', 'religion', and 'faith' interchangeably (Turner et al., 1995). Presumably, these habits stem from the desire to add linguistic variety to one's writing (Spilka & McIntosh, 1996), but the problem is that such lack of clarity and precision serve ill in addressing issues of a complex and multi-faceted nature. As the general topic area of spirituality and religion is undoubtedly both, complex and multi-faceted, (Hill, Pargament, Hood, McCullough, Swyers, Larson & Zinnbauer, 2000), the adverse effect of these habits on the study of the general topic area of spirituality and religion is considerable.

Ironically, despite the lack of a clear differentiation between these two concepts within the literature, the terms spirituality and religion have emerged with quite different connotations. Hill et al. (2000) suggest that "as spirituality has become differentiated from religion (and religiousness), it has taken with it some of the elements formerly included within religion" (p. 60). As a result, a picture of 'negative religiousness' and 'positive spirituality' has been drawn. Here, religion has been reduced to a complex imagery of priests and churches, dogmas and doctrines, churches and cathedrals, institutions and political meddling (Zinnbauer et al., 1999). In this way, religion has come to be viewed as mundane, extrinsic faith at best, and otherwise as an institutional hindrance to achieving the potentials that spirituality holds.

Spirituality on the other hand, has become to some extent synonymous with a vague but vast realm of human potential (Pargament, 1999), identified with such things as personal transcendence, supraconscious sensitivity, and meaningfulness (Spilka & McIntosh, 1996). This is not to say that spirituality is 'limited' to this vast realm. One only needs to leave the realm of the psychological literature, and present this concept to a wider audience to appreciate its complexity and vagueness more fully:

"I started asking friends and acquaintances: 'What does spirituality mean to you?' Manda was succinct: 'Knowing you are connected to everything'. Jim was even briefer: 'Nothing'. Dorothy said: 'God! I don't know. It's nothing to do with churches. It's more to do with sunsets, the sea, things like that. The open air and natural beauty. Water. And birds. Definitely something to do with birds'. Robert said: 'I think it comes down to three questions: Where do we come from? Where are we going? And why are we here?' Eric said: 'A connectedness to some place. In my younger days – religion. Like knowing a place. Knowing people.' Margaret said: 'One of those glimmers in time, when you have the feeling of how life really is, and the wholeness of it.' David told me that his *son* was a very spiritual person: 'He's an atheist, mind you. But a very spiritual atheist'. Then a young woman at the hairdressers pulled me up short. She turned the question on me. 'Are *you* a spiritual person?', she asked, 'can you read my fortune?'" (Leibrich, 2002, p. 145; italics in original)

In summary, while a plethora of research suggest a strong link between a religious/spiritual construct and the quality of life, conclusive research in this area is hampered by two problems: one, the failure of the literature to differentiate between the effects of spirituality and the effects of religion; and two, an abundance of increasingly vast and vague connotations for both terms instead of a clear definitions arrived at by consensus.

Thus, in order to pursue the goal of this thesis, to study the role of spirituality in the quality of life, a step back has to be taken in order to go forward. The step back consists of first examining the overall relationship between two relevant constructs, psycho-existential well-being and life-functioning, where both spirituality and religiosity are grouped within the variables describing psycho-existential well-being.

The step forward is based on the success of the step back. Namely, should a link between psycho-existential well-being and life-functioning exist, as the literature suggests, then the role of spirituality in the quality of life can be explored more concretely.

First, however, a couple of comments should be given here regarding the use of the terms spirituality and religiosity within this thesis.

Within this thesis, spirituality is defined as a person's underlying belief system regarding spiritual matters, such as the existence of a higher being, the possession of a soul, and the meaningfulness of life in general and one's own life in particular. In order to discuss spirituality in this fashion, a new scale has been developed as part of this thesis. The development of this scale is discussed at length at a later point. Suffice it to say here that the purpose in designing this scale was to avoid tapping into religious connotations and traditions when approaching these issues.

For the assessment of religiosity, Allport and Ross' (1967) conceptualization of the term was chosen. Allport and Ross (1967) designed a scale in which they differentiate between two types of religiosity, namely extrinsic and intrinsic religiosity. Extrinsic religiosity, within this framework, describes one's embracing of the social aspect of religion. Here, the individual experiences religion and its meaning through its

lessons on morality, the refuge it may offer in times of trouble and confusion, and the comfort it holds in offering a community of people that regularly come together.

Intrinsic religiosity, on the other hand, is a more personalized, integrated religiosity. It reflects the individuals desire to understand the meaning of life through spiritual means, and to integrate these insights into daily life and the personal experience thereof.

Since intrinsic religiosity, as envisioned by Allport and Ross (1967) seemed to be closely related to spirituality, as conceptualized here, it was not assessed in this study in order to avoid redundancy. Extrinsic religiosity, on the other hand, tapped into the part of the overall spirituality-religion mixture that the developed scale was not designed to tap into. Thus, it was included in the study.

The motivation behind picking these two concepts was not to be in a position to contrast the roles of spirituality and religiosity, and through extension between spirituality and religion. In fact, such an overall comparison would be misplaced at this point, given the fact that only aspects of both concepts were chosen for this study. But more to the point, the examination of the concepts of spirituality and religiosity through the mechanism of contrast would entail a very narrow point of view of the general topic area of spirituality and religion at large. Such a mechanism would be limiting because, first, one would almost certainly completely bypass the potentially rich and dynamic interactions between these two constructs (Hill et al., 2000). Second, and perhaps even more importantly, the mechanism of contrast alone cannot fully describe the one or the other concept, as they would both be limited to each other's vocabulary and conceptualization. To discuss, for instance, spirituality from a religious point of view, not only invites but compels the imposition of a religious frame-work upon the

conceptualization of spirituality, regardless of whether or not that may be appropriate, purposeful, or constructive. Likewise, to explore religion from a spiritual point of view would invite the neglect of the many facets of religion that are not part of spirituality. One simply cannot expect to have one gown that fits all. Nor can one expect to have one gigantic framework that fits all constructs.

Consequently, it is not the goal of this paper to describe spirituality in its divergence from religiosity in specific or religion in general. Nor is it to create a gigantic framework, which houses both, the overall concept of spirituality, and the overall concept of religion. Rather, the goal in picking the concepts used in this study, spirituality and religiosity, was to use two different aspects of the spirituality-religion mixture that have minimal overlap, and thus allow for clearer interpretation of the findings.

The current study is utilizing a campus-wide survey on the quality of life as the basis for its data (e.g. Disch, Harlow, Campbell & Dougan, 2000). As such, there are a number of life functioning variables that can be addressed in relation to spirituality. However, before such a specific address can be made, the overall relation between the general concepts of how one feels about oneself and the way one expresses oneself to an outer world needs to be explored. For this purpose, these two domains need to be specified.

Psycho-existential well-being

To capture the way a person feels about him- or herself, a number of psycho-existential variables were chosen. The first three of these are purpose in life, self-esteem, and satisfaction with life. The concept of purpose in life is routinely used as a

dimension of existential belief systems, and is oftentimes applied to the study of behavioral outcomes, such as drug abuse (Harlow, Newcomb & Bentler, 1986; Newcomb, Vargas-Carmona & Galaif, 1999; Minehan, Newcomb & Galaif, 2000), or adolescent problem behaviors (Shek, 1997), and overt attitudes, such as boredom proneness (MacDonald & Holland, 2002). Thus, the concept of purpose in life was judged to be highly relevant to the topic under study.

The concept of self-esteem is of course as close as one can get to one's feeling about oneself and well-being. As such, it is one of the most widely discussed constructions in psychological, education, lay and popular discourse (Ellis, 1998), and could not be missing in a list of psycho-existential variables.

The concept of satisfaction in life poses an interesting conundrum in terms of its conceptualization as either an existential variable or a life-functioning variable. The complexity arises because satisfaction with life may be understood as both a descriptor of the quality of one's life and a reflection of one's inner notions about oneself, particularly if it is conceived of as a subjective concept, as it is in this study. As the subjectivity of this concept appeared to be a central part of its definition (Diener, Emmons, Larsen, & Griffin, 1985), it was conceptualized in this study as a psycho-existential variable. This conceptualization is in line with relevant research, in which, for instance, satisfaction in life has been modeled as a facet of an overriding factor of meaning and purpose in life (Harlow & Newcomb, 1990). Further, satisfaction with life has been demonstrated to be closely related to other psycho-existential variables, such as self-esteem. Here, the close relationship between self-esteem and well-being has been found in a variety of different populations, including teenagers, the elderly and

middle-aged individuals, in America, Australia and Asia (Orpen, 1994; Reitzes, Mutran & Fernandez, 1996; Button, Loan, Davies & Sonuga-Barke, 1997; Chung & Suh, 1997; Takahashi, Tamura & Tokoro, 1997). Here, self-esteem has been found to be a powerful predictor of well-being and the quality of life, an association that has been repeatedly reported in the literature (Diener, 1984; Hong & Giannakopoulos, 1996).

Added to these psycho-existential variables are spirituality and extrinsic religiosity, both the social and personal aspects of it. Arguably, extrinsic religiosity may have less to do with one's existential beliefs and more with one's outward expression. But as the role of spirituality in reference to a number of psycho-existential variables was of concern in this study, it seemed appropriate to add extrinsic religiosity to this domain, so as to provide a frame of reference for the concept of spirituality.

Life-functioning

Now that the psycho-existential domain has been specified, attention needs to be turned to the variables used in this study to exemplify the life functioning domain. Here, the first thing to be noted is that all of the chosen variables are relevant to an assessment of the quality of life of undergraduate students, as the data is based on a campus-wide quality of life assessment. Namely, the variables chosen in this study were stress, coping, health, academic success, alcohol consumption, family functioning, and societal attitudes, such as social responsibility and attitudes toward lesbians and gay men. As the role of spirituality in regards to all of these variables is the focus of this thesis, a discussion of each of their relations to spirituality is provided next.

Spirituality and stress and coping. For the most part, the discussion of spirituality within the scope of stress and coping has taken place in more acute and

traumatic scenarios. Here, spirituality is often times linked to coping within the context of end of life issues (e.g. Van Ness & Larson, 2002), AIDS (e.g. Gray & Carson, 2002), cancer (e.g. Strang & Strang, 2001), and other severe trauma such as coping with parental loss (Angell, Dennis & Dumain, 1998) or refugee and torture trauma (Holtz, 1998). Applications to less acute situation, such as daily stress (Kim & Seidlitz, 2002) have been less well studied.

Spirituality and family functioning. Family functioning in reference to spirituality is mostly discussed in terms of therapy, in this case family and marriage counseling (Giblin, 1996). Again, as in other areas previously discussed, there is great ambiguity around the term and the function of spirituality. Nonetheless, even though therapists remain unclear whether one should regard spirituality here as a part of a culture, a subset of belief systems, or a 'constructivist languaging system' (Giblin, 1996), its apparent importance in counseling is asserted (Griffith & Rotter, 1999).

Spirituality and social responsibility. Myers (2000) describes contemporary US society as a paradox. He does so, by pointing to the record breaking material wealth that is accompanied by a "deep spiritual poverty" (p. 414), as he calls it, which is reflected in the disturbing social problems of today. Yet Myers (2000) also asserts that there is a trend toward optimism, connected with increased self-esteem and social responsibility.

Social responsibility, however, is not readily connected in the minds of many to either spirituality or religion. Although most if not all religions teach social morals and responsibility to some extent, the relationship between social responsibility and spirituality, or even religion, is less well documented within the psychological literature.

In early studies, little support has been found for the hypothesis that religious persons manifest more socially responsible behavior (Wilson & Kawamura, 1967). On a closer look, intrinsic religiosity was found to be linked to social responsibility (Benson, 1980). The current study seeks to investigate the link between the concept of social responsibility and spirituality more concretely by exploring to what extent spirituality may predict social responsibility.

Spirituality and Attitudes towards Lesbians and Gay Men. Attitudes towards lesbians and gay men have rarely been studied from the view-point of spirituality. A recent dissertation (Taylor, 2000) approached this area from a religious orientation point of view, and found a negative association between orthodox religiosity, which is to say an orthodox incorporation of religion into one's understanding of one's self and the world at large, and positive attitudes towards lesbians and gay men. Further, Batson, Floyd, Meyer & Winner (1999) point to antipathy of intrinsically religious individuals towards violators of conventional values, using lesbians and gay men as a target example, thereby strengthening a link between religiosity and negative attitudes toward lesbians and gay men. This antipathic sentiment appears to be limited to the rejection of homosexual behavior rather than of lesbians and gay men themselves (Bassett, Baldwin, Tammaro, Mackmer, Mundig, Wareing & Tschorke, 2002). However, the topic overall is woefully understudied.

Spirituality and health. To a great extent, the discussion of spirituality and its relation to physical health has taken place outside of psychology. The reluctance of scientific work to focus on spirituality, especially in regards to physical health, may be explained by the Cartesian Principle of Reductionism that so strongly underlies Western

science (Seaward, 2000). According to Seaward (2000), due to this principle, we have oftentimes failed to recognize the importance of human spirituality in the health and healing process.

Regardless of this principle, spirituality and religion have not been ignored in the study of physical health. Earlier in this paper, a number of associations between the ill-defined spirituality-religion mixture and physical health have already been noted (please refer to page 13). Suffice it to add at this point that such findings are not, as a matter of course, limited to Western phenomena. For example, Idowu (1992) was able to demonstrate remarkable connections between spirituality, self-esteem and health in his study of the Oshun Festival, an African traditional religious healing process. As this apparently successful ritual is undertaken to improve physical health, it demonstrates how a strong self-esteem rooted in a belief in something supernatural can benefit psychological as well as physical well-being.

Spirituality and alcohol consumption. The study of spirituality and religion within psychology probably has the longest history in its application to the recovery from alcoholism. Here, spirituality has long played an important role (Fehlandt, 1904; Alcoholics anonymous, 1939). Both spirituality and self-esteem are concepts frequently used in treatment programs for alcoholics (Johnston, Sandler, & Griffin-Shelley, 1987). Johnston et al. (1987) view spirituality as a complex combination of feelings, thoughts, and attitudes about oneself in the world. They argue that when this spirituality is positive, it works to regulate self-esteem in a healthy way. Alcoholics, however, typically feel cynical and lifeless. Kurtz (1979) compared alcoholism to a misguided thirst for transcendence. Johnston et al. (1987) approach the situation of the alcoholic

by discussing the self-esteem of the individual in terms of the interplay between a positive and negative perspective on life. The negative perspective on life may be understood as low or negative spirituality. The interplay between these two perspectives lies in the active choosing and adoption of either position. Johnston et al. (1987) argue that the alcoholic has abdicated the responsibility for this choice. In order to re-establish a positive spirituality and a healthy self-esteem, Johnston et al. (1987) continue, one has to separate spirituality from concepts of formal religion, define spirituality, and have the alcoholic recognize her or his negative, caustic view of her- or himself and the world. Only then can she or he "accept the choice and responsibility to live with the reality of life on a daily, creative basis" (Johnston et al., 1987, p. 1). They propose that the individual needs to acknowledge the limitations of negative, hindering spiritual beliefs before she or he can replace them with positive, reinforcing beliefs.

The proposed study will not focus on alcoholism, but rather on alcohol consumption overall. As alcohol consumption is relevant to campus life in general, it appeared prudent to include it in the proposed, campus based study. It also appears plausible to believe that the amount of alcohol consumption may be linked to spirituality and self-esteem in many similar ways as in alcoholism.

Spirituality and academic success. Academic standing and scholastic achievement have so far rarely been included in the discussion of spirituality. On the rare occasion that spirituality has been examined in regards to academic standing and achievement, it has been found to be a positive predictor of academic attitudes (Jagers, Smith, Mock, & Dill, 1997) as well as academic performance (Walker & Dixon, 2002).

Goal of this study

In summary, the goal of this paper, as stated earlier, is to explore the role of spirituality in the quality of life.

To achieve this goal, two levels of inquiry are taken. One of these levels pertains to the relationships between two groups of variables, namely, psycho-existential variables and life-functioning variables, where spirituality is grouped within the variables describing psycho-existential well-being. Within this scope, particular attention is paid to the role of spirituality within these overall relationships.

The other level of inquiry is a more specific, micro-level inquiry. On this level, the major focus is on the relationship between the observed variables themselves rather than on the latent or combined concepts underlying them. Here as well as in the macro-level approach, special attention is paid to the role of spirituality.

More concretely, the specific hypotheses of this study are that:

1. Psycho-existential well-being in general significantly relates to life functioning.
2. Spirituality in particular significantly predicts the life functioning variables assessed in this study.

Method

Participants

This study was conducted at the University of Rhode Island (URI) within the scope of the Student Quality of Life and Satisfaction (SQOLAS) Project. One of the goals of the SQOLAS Project is to assess and monitor the current quality of life among URI undergraduate students. As the current study was part of this overall project, it was

administered to undergraduate students only at the URI Kingston campus. Participants were proactively and randomly recruited using a stratified random sampling design where participants were selected from large general education courses (required for graduation), reflecting a large cross-section of the entire undergraduate population.

The sample for this survey consisted of 419 undergraduate students of the University of Rhode Island above the age of 18. Most of the respondents (91.8%) were of Caucasian ethnic background, and two thirds (65.9%) of this sample were women. The vast majority of the respondents were of heterosexual sexual orientation (98.0%) and of college-traditional age (95.2%). Students of lower class standing were unintentionally over-sampled, with only 12.3% seniors and 16.4% juniors. About half of the respondents (55.3%) lived on-campus during the academic year 2000-2001, an arrangement that drastically decreased with increasing class standing. The most frequently indicated major for students of lower class standing was an undecided major for men (27.2%) and health sciences for women (19.6%). For students of upper class standing, men indicated most frequently majoring in business, economics, and management (27.3%), and women indicated most frequently being a social science major (30.5%).

Procedure

To obtain a representative sample of the URI undergraduate population, a random sampling approach was chosen. Thus, general education requirement courses as listed in the URI Course Bulletin 2001 were identified to be used to recruit participants, as these courses are required for all URI students regardless of field of study or other non-random variables. For the identified courses, the respective

instructors were contacted to obtain permission to administer the survey upon which this study is based. In the classes for which the instructor's permission could be obtained, surveys were distributed either before class or at the end of class, depending on the instructor's preference.

At the time of the survey distribution, the researcher or one of her trained assistants first explained the purpose of the study, delineated the nature of participation, and gave a brief overview of the survey packet, which included an IRB approved informed consent form, a raffle information sheet, and the 7-page survey itself. Then the researcher or one of the assistants invited any questions the potential participants might have. After all questions had been answered, the survey packets were passed out to every student in the lecture hall to be filled out at the students' discretion. In order to give the students an incentive to participate in the survey, three prizes of \$100 each were offered, for which the winners were determined through a raffle. Participation in the raffle was not required for participation in the study.

To collect the surveys, participants were asked to disassemble their survey packets into three parts: the consent form, the raffle information sheet (optional), and the survey itself. After collection, the surveys were numbered for the purpose of data management. Consent forms were not numbered and filed separately so as to make any identification of the survey participant impossible.

During the early part of the data collection, surveys were picked up at the following class meeting. This procedure hampered the return of the surveys severely due to a variety of logistical problems (e.g. instructors' unexpectedly canceling class or dismissing class early, etc.). Thus, during the later part of the project, surveys were

distributed and collected in the same sitting. In both scenarios, the instructors were not present during the survey administration and/or collection so that the respondents' anonymity could be maintained.

Figure 3. Response rates to the SQOLAS 2001 survey

Figure 3 describes the response rate of these procedures, both procedure-specific and overall. As can be seen in Figure 3, the response rate increased considerably during the later part of the project, during which the surveys were administered in class, jumping from a response rate of 10.6% to 47.6%. The overall response rate of the SQOLAS 2001 Survey was 30.9%. The response rate calculated by weighting the response rates of the different data collection procedures by their percentual sample contribution (i.e. 16.4% for pick-up next class and 83.6% for in-class administration) was 41.5%.

Of the 421 surveys initially collected for this study, 419 were included in the analysis. One survey had to be disregarded because the participant indicated being less

than 18 years of age; the other survey strongly suggested an indiscriminant response bias evidenced through carelessness, and thus was disregarded out of concern for the validity of the answers.

Measures

The instrument used for this study was the Student Quality of Life and Satisfaction (SQOLAS) 2001 Survey. This instrument consists of 155 items, containing 14 demographic items, 9 URI Career Service specific items, and 132 items of the various scales and measures. The survey was constructed following the guidelines of Schuh & Upcraft (2001). The scales are described below in the order in which they appear on the survey. The survey itself is included in appendix A.

Satisfaction with life scale. The Satisfaction with Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985) was used to assess the respondents' experienced satisfaction with life. The scale consists of 5 items on a 7-point Likert scale that give statements describing one's satisfaction with life. The respondent is asked to indicate his or her agreement with these statements (0 = strongly disagree, 1 = disagree, 2 = slightly disagree, 3 = neither agree nor disagree, 5 = slightly agree, 6 = agree, and 7 = strongly agree). For instance, the respondents would indicate to what degree they perceive their lives to be close to ideal or whether or not they have gotten the important things in life they wanted. This scale relies upon the cognitive, judgmental process of evaluating one's satisfaction with life, according to one's own standards. Thus, this scale, unlike comparable scales, leaves the respondent free to weight various domains such as health or material wealth and various feeling states such as loneliness in whatever way she or he chooses.

The SWLS has desirable psychometric properties with a test-retest coefficient of .82 and an alpha coefficient of .87 (Diener et al., 1985). In the current study, the standardized alpha coefficient for internal consistency was assessed to be .87.

Purpose-in-life test (PIL-R). A slightly revised version (PIL-R: Harlow, Newcomb & Bentler, 1987) of the Crumbaugh and Maholick's (1964) Purpose-in-Life Test (PIL) was used to assess the participants' perceived purpose in life. The original version of the PIL as well as the here used revised version, are based on Frankl's (1965) constructs of meaning in life and noogenic experience. The PIL-R consists of 20 items on a 7-point Likert scale (0 = strongly disagree, 1 = disagree, 2 = slightly disagree, 3 = neither agree nor disagree, 4 = slightly agree, 5 = agree, and 6 = strongly agree), and assesses the respondents' attitude towards their lives in terms of experienced meaning, purpose and appreciation of their lives. For instance, respondents were asked to indicate whether or not they perceive their lives as empty, or whether or not life seems exciting to them.

In the PIL-R, the original 20 items were rephrased for ease of presentation. Nine items were phrased to reflect a positive sense of meaning in life; and the remaining 11 were phrased to reflect a negative sense of meaning in life. Harlow et al. (1987) discerned four major constructs within this scale, for which the reliability estimates are given in parentheses: purpose in life (.86), meaninglessness (.78), happiness (.79), and suicidality (.80).

Split-half reliabilities for the PIL have yielded values ranging from .85 to .92 (Crumbaugh, 1968; Amodeo, Kurtz & Cutter, 1992; Carroll, 1993). Test-retest

reliabilities range from .83 to .79 (Meier & Edwards, 1974; Reker & Cousins, 1979).

The overall standardized alpha coefficient for this scale in the present study was .86.

Rhode Island stress and coping inventory. The Rhode Island Stress and Coping Inventory (RISCI; Fava, Ruggiero & Grimley, 1998) is a 10-item Likert scaled measure that assesses perceived stress and coping. Five of the items assess the frequency of experienced stress and the remaining five items assess the frequency of successful coping. Coefficient alphas of .85 for the stress subscale and .87 for the coping subscale were reported (Fava et al., 1998). Higher scores on the stress subscale indicate higher perceived stress in one's life, and higher coping scores indicate more sophisticated or effective coping. The authors reported correlations of .63 for stress, and -.67 for coping with anxiety, depression, loss of behavioral/emotional control, and psychological well-being, as measured by the Mental Health Inventory (MHI-5; Stewart, Hays, & Ware, 1988). In the present study, the internal consistency of the scale was assessed to be .72 for the stress subscale and .77 for the coping subscale.

Family functioning. The Family Functioning Scale (FFS) (Tavitian, Lubiner, Green, Grebstein & Velicer, 1987) is a 40-item measure, rated on a 5-point Likert scale that consists of five orthogonal factors: (1) positive family affect; (2) family communications; (3) family conflicts; (4) family worries; and (5) family rituals. Only the first three subscales were relevant to the present study, and so were included.

In order to reduce response bias, the items on this scale are randomly distributed with regard to their respective subscales. Some items were also negatively keyed to reduce social desirability and acquiescence as sources of error. Reliability for the scale factors ranged from .91 for positive family affect to .62 for family worries (Tavitian et

al., 1987). In the present study, the standardized alpha coefficient for the three subscales overall was assessed to be .72. Assessed separately per subscale, the alpha coefficients were assessed to be .89, .76, and .86 for 'family communications', family conflicts' and 'positive family affect' respectively.

Social responsibility. The Social Responsibility Scale (SRS: Berkowitz & Lutterman, 1968) is rated on a 5-point Likert scale (0 = strongly disagree, 1 = disagree, 2 = neutral/unsure, 3 = agree, and 4 = strongly agree), and provides 8 statements reflecting social responsibility (or the lack thereof). Respondents indicate, for instance, whether or not they believe they can do something about current events or public affairs, or whether or not they believe voting is a meaningful thing to do. The items of this scale are tied into traditional values and are therefore likely to have a conservative, individualist theme. Nonetheless, a high score on the SRS has been linked to interest in national and local politics, active membership in organizations, and money donations to educational and religious institutions (Berkowitz & Lutterman, 1968). In the present study, the internal consistency as measured through the standardized alpha coefficient was assessed to be .65, which is unexpectedly low.

Spirituality. The World View Scale (WVS: Höppner, 1999) consists of 12-items rated along a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree". The goal of this scale is to assess the degree of a variety of spiritually relevant belief systems, including: 1) belief in a higher, benevolent force; 2) belief in free will; and 3) belief in a meaningful and transcending existence. Sample items include: "God/a Divine Being exists", "I make choices in life freely", "I am more than my body". The

development of this scale was part of the effort to be precise in the discussion of spirituality as it pertains to this study.

Age universal I-E scale. Religious orientation was first conceptualized and quantified through Allport and Ross' 20-item Religious Orientation Scale (1967). Religious orientation has meanwhile been re-conceptualized in a variety of different ways. As the intrinsic component (*I*) of Allport and Ross' initial conceptualization of religiosity was captured in terms of other variables of this study (e.g. existential spirituality, purpose in life), only the extrinsic portion (*E*) of a shortened version of the Age Universal I-E Scale (AUIE-12; Maltby, 1999) was used in this study. The original Age Universal I-E Scale (Gorsuch & Venable, 1983) is based on Allport and Ross' I-E scale, with alpha coefficients of .75 for *E* and .68 for *I*. The six extrinsic religiosity items used in this study were derived by Maltby (1999) through a factor analysis of the original Universal Age I-E Scale (Gorsuch & Venable, 1983), and may be conceptualized as two components of extrinsic religiosity, an extrinsic-personal and an extrinsic-social component.

The subscales used in this study, personal extrinsic religiosity and social extrinsic religiosity, consists of 3 items each, rated on a 5-point Likert scale (0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, and 4 = strongly agree). Personal extrinsic items describe one's focus on religion and prayer as a means of attaining peace, comfort, and protection. Social extrinsic items describe one's focus on religion and service attendance as a means of making friends and being part of a community.

In the present study, the overall internal consistency of the six extrinsic religiosity items as measured by the standardized alpha coefficient was .81. Assessed

separately per subscale, the alpha coefficients were .72 and .89 for ‘personal extrinsic religiosity’ and ‘social extrinsic religiosity’, respectively.

Attitudes toward lesbians and gay men. The Attitudes toward Lesbians and Gay Men (ATLG: Herek, 1988) Scale is a brief measure of heterosexuals’ attitudes toward gay men and women. The 10 items of the short version of the ATLG (ATLG-S: Herek, 1988) tap into heterosexuals’ affective responses to homosexuality and to gay men and lesbians, and are scored along a 5-point Likert scale. Respondents indicate, for instance, whether or not they believe male homosexuality to be a natural expression of sexuality and whether or not they think state laws regulating private, consenting lesbian behavior should be loosened. For the subscales, attitudes towards lesbians are considered separately from attitudes towards gay men (and vice versa).

The ATLG and its subscale have consistently shown high level of internal consistency. With college student samples completing a written version of the ATLG or its short forms, alpha levels are typically greater than .85 for the subscales and .90 for the full scale (Herek, 1987a, 1987b, 1988). Test-retest reliability was originally demonstrated with alternate forms (Herek, 1988). Correlations were $r = .90$ for the ATLG and its alternate.

In the present study, the overall internal consistency for this scale was assessed to be .90. Assessed separately per subscale, the standardized alpha coefficients were .80 and .89 for ‘attitudes toward lesbians’ and ‘attitudes toward gay men’ respectively.

Self-esteem scale. Rosenberg’s (1965) self-esteem scale consists of 10 items rated on a 4-point Likert scale. Half of the items were negatively keyed to reduce social desirability and acquiescence as sources of error. This scale possesses satisfactory

psychometric properties, with a Guttman scale reproducibility coefficient of 0.92 and test-retest reliability correlation over two weeks of 0.85 (Silber & Tippet, 1965).

In the present study, the internal consistency of this scale as assessed through the standardized alpha coefficient was .88.

Health Outcomes Questionnaire. The Health Outcomes Questionnaire (HOQ: Morrow, 2000) assesses the utilization of health care facilities and the frequency of health problems. In the proposed study, only the frequency of health problem items was utilized. The participants were instructed to indicate the number of times she or he has experienced a certain illness and/or condition within the past year. 18 items of common illnesses/conditions follow, which the participant can rate in terms of the frequency of experiencing them, ranging from never having experienced them to seven or more times, in increments of two (e.g. 1-2 times, 3-4 times, etc.).

The point of this scale was its descriptive power, which was of primary importance to the SQOLAS 2001 survey. In terms of inferential usability, however, this scale was very cumbersome. To derive at least some partial meaning, the frequency of common ailments and sicknesses (i.e. cold, headache, back pain, ear infection, sinus infection, flu, abdominal pain, sore throat, urinary tract infection, asthma, and shortness of breath) were summed to arrive at an overall sickness frequency score.

To improve the assessment of health somewhat, a single item was added which asked the respondents to rate their health on 4-point scale, ranging from poor to excellent.

Participation in sports: A single item assessed the participants' physical recreation habits. The item read: "Do you engage in physical recreation?" Participants

were instructed to indicate all ways in which they engage in sports by indicating whether or not they are NCAA athletes, play intercollegiate or club sports, play sports with friends, or do not play sports at all. While a single item has limited reliability, it was felt that the brevity of the questionnaire was more important than a more thorough assessment of this variable.

Alcohol Consumption. Alcohol Consumption was assessed along two dimensions: 1) frequency of consumption; and 2) quantity of consumption. Both of these dimensions were indicated based on the 30 days prior to the survey completion.

Demographics. Demographic information was assessed according to gender, age, religion, sexual orientation, ethnic background, class standing, major in college, grade point average, living arrangement, memberships in sororities/fraternities and/or clubs, and family socio-economic status.

Results

Missing Data

In preparation for the analyses of this study, the issue of missing data was addressed. In the present study, two kinds of missing data were distinguished: (1) ipsative non-response to a scale item; and (2) missing data point for a variable used in the overall analyses. Each is described in turn.

Within psychological research the utilization of scales is common practice, as many of the concepts and ideas of interest (e.g. self-esteem, life satisfaction) cannot be reliably measured by a single item. Instead, multiple item scales are utilized, where each item is assumed to measure the same underlying concept with roughly equal

reliability. For a final variable value or data point, the value of all scale items is simply averaged. Ipsative non-response arises when a participant responds to the majority of the items on any given scale but fails to answer all items.

A missing data point, on the other hand, is the case in which an entire variable value is missing. If this variable is measured through a single item (e.g. age), non-response to that item results in a missing data point. If the variable is measured through a scale (e.g. self-esteem), the resulting data point is missing when a substantial percentage of the items have missing values.

For the present study, a data point was said to be missing if an excess of 20% of the items on any given scale were not completed. In cases where 20% or less of the items were missing, the missing item was treated as an ipsative non-response. Namely, the missing item value was replaced by the mean of the scores of the remaining items on that scale by that participant.

The above detailed approach is commonplace and widespread within psychological research. Usually, however, this technique is not discussed as a missing value approach, but is rather seen to be a natural part of the scale definition and its scoring (Schafer & Graham, 2002). Because this approach is a widespread practice, it was adopted for the present study.

Only recently (Schafer & Graham, 2002) were some concerns raised regarding the justifiability of this approach. In brief, these difficulties are both statistical and conceptual: (1) statistically, by using a reduced set of items on a scale (i.e. the available ones), the reliability of that scale decreases; and (2) conceptually, an averaging of scores involves the redefinition of the overall concept measured by the scale to the concept as

measured through the available items. On the bright side, the authors pointed out that although largely understudied, this method can be reasonably well behaved given certain criteria: (1) if the scale reliability is high (i.e. with an alpha coefficient greater than .70); and (2) if each group of items to be averaged seem to form a single, well-defined domain. In the present study, both criteria were met: for those scales for which this approach was chosen, the internal consistency exceeded .75, and principal component analyses of each scale used confirmed its supposed structure (be it uni-dimensional or multi-dimensional), thereby lending support to the assumption that each item represents the underlying construct roughly equally well. Further, the rate of ipsative non-response replacement though item means in the present study was minimal. Namely, it was used in 38 instances, where no more than 2 items per scale were replaced in this fashion. Thus, the originally chosen approach to address ipsative non-response was judged justifiable.

In terms of missing variable data points, a more complicated approach was chosen. In general, problems arising from missing data are less serious in cases where less than 5% of the data points are missing, and thus most methods of dealing with missing values are largely believed to yield very similar results (Tabachnick & Fidell, 1999).

In the case of the present data set, however, the problem of missing values was more substantive. It was relatively mild in terms of missing data points, where a total of 350 data points or 2.1% were missing. In terms of per variable missing data, however, substantive percentages were missing for the following four demographic variables: (1) 12.6% of the participants did not indicate their grade point average, (2) 11.7% did not

indicate their annual family income, and (3) 5.3% did not indicate their major in college and their age.

Overall, only 274 cases had complete data. Thus, the conventional method of listwise deletion would have resulted in the deletion of 34.6% of the cases, a rate that is clearly unacceptable.

Instead, an approach recently recommended as ‘the state of the art’ in missing data analysis (Schafer & Graham, 2002) was chosen. Namely, Bayesian multiple imputation (MI) was used to (1) impute reasonable data values given the information of the overall data set, and to (2) maintain the element of uncertainty of the missing data through the generation of multiple, equally feasible data sets. For this purpose, the software application NORM version 2.03 (2001 update) developed by J. L. Schafer (described in detail by Schafer, 1997) was used.

In terms of the number of necessary imputations, Schafer & Olsen (1998) illustrated that “in many applications 3-5 imputations are sufficient to obtain excellent results” (p.548). Thus, for this study, 5 imputations were conducted, resulting in 5 equally feasible complete data sets. Each data set was analyzed using conventional complete case analysis tools through the software package SAS version 8.01. These analyses consisted of an overall canonical correlation between the psycho-existential variables and the life-functioning variables, which were followed up with individual multiple regressions for each life-functioning variable using the psycho-existential and demographic variables as predictors. The results of the analyses across imputed data sets were combined using the formulas given by Rubin (1987) for multiple imputation.

Measurement Development

The measurement development of the spirituality scale used in this study required several steps. First, the issue of missing data had to be addressed. This address represented somewhat of a special case to the procedures outlined above. Here the ipsative non-responses on given items were equivalent to missing data points, unlike in the rest of the data set, as the scale itself was not yet fully developed and explored (i.e. internal consistency and structure were unknown). Thus, even though the rate of missing data was minimal, (0.3% of all data points, hypothetically resulting in listwise exclusion of 2.4% of the 419 cases) the multiple imputation approach was chosen here as well for the sake of consistency.

As such, using the software application NORM version 2.03, the expectation maximization (EM) algorithm was run to compute maximum-likelihood estimates of parameters (means and covariances) under the normal model. The procedure converged after 6 iterations, utilizing NORM's default starting values (i.e. using the observed data for means and standard deviations, and zeros for covariances). Next, data augmentation was run for a total of 500 cycles, producing an imputation at every 100th cycle for a total of 5 imputations. For these cycles, the NORM default non-informative prior distribution was used. The 5 imputed data-sets were then analyzed separately through complete case analysis.

The complete case analysis in this case was a principal component analysis (PCA), which was performed using the statistical software package SAS version 8.01. However, before the PCA could be conducted, the number of components to be retained had to be determined. Unfortunately, the conventional approach to this decision, the

eigenvalue-greater-than-one rule (Kaiser, 1960), typically overestimates and sometimes underestimates the number of components to be retained (Zwick & Velicer, 1986). The problem with these wrong estimations is two-fold. In the case of over-extraction, variables are diffused across a large component space, which may result in component splitting, in few high loadings on components, and in the habit of researchers attributing too great importance to trivial components. In the case of under-extraction, the variables are compressed into a small component space, which results in the loss of information, which in turn may cause the neglect of an important factor or in the distortion of one or more factors (O'Connor, 2000). Hence, it is clear that the determination of the correct number of components is essential.

To this end, two methods in particular have been shown to yield optimal solutions (Zwick & Velicer, 1982, 1986; Wood, Tataryn & Gorsuch, 1996). These are (1) the minimum average partial (MAP) procedure (Velicer, 1976) and (2) the parallel analysis (Horn, 1965). The minimum average partial (MAP) procedure (Velicer, 1976) involves the partialing out of each component from the correlation matrix, until the resulting partial correlation matrix approaches the identity matrix. Parallel analysis (Horn, 1965) involves the comparison of the observed eigenvalues to eigenvalues derived from random data matrices. Components are retained if the eigenvalue observed exceeds the average of the eigenvalues of the random matrices. Although the rationale of parallel analysis is not as rigorous as that of the MAP procedure, as the same criticisms that apply to the Kaiser (1960) rule may also be applied to parallel analysis, both methods have been among the most accurate procedures currently available (Velicer, Eaton & Fava, 2000).

As neither of these two procedures is a standard part of currently available commercial statistical software packages (e.g. SAS and SPSS), add-on programs had to be utilized. These add-on programs (O'Connor, 2000) take the form of program specific syntax using either the "Proc iml" or the "matrix" function for SAS or SPSS, respectively. As the "Proc iml" function is not a standard component of SAS installations, and was thus unavailable to me, SPSS version 10.0 was used to conduct O'Connor's (2000) add-on programs for the MAP procedure and parallel analysis for each one of the 5 previously imputed data-sets.

For the MAP procedure (Velicer, 1976), the correlation matrices of the 12 items of the World View Scale were used.

For parallel analysis (Horn, 1965), 100 permutations of the 5 raw data sets were generated. For the permutations, each parallel data set is based on column-wise random shufflings of the values in the raw data matrix using Castellán's (1992) algorithm. The distributions of the original raw variables are exactly preserved in the shuffled versions used in the parallel analyses. Thus, the permutations of the raw data set are highly accurate and most relevant, especially in cases where the raw data are not normally distributed or when they do not meet the assumption of multivariate normality (O'Connor, 2000).

The MAP procedure as well as parallel analysis yielded the exact same results for each of the 5 imputed data-sets. A closer inspection of the imputed data-sets revealed that these data-sets were in fact identical to each other. Unfortunately and perplexingly, however, the results of the two procedures of obtaining the correct number of components to be retained did not agree with each other. Namely, the MAP

procedure yielded one component to be retained, with a smallest average squared correlation of .025, while parallel analysis yielded 3 components, with a difference of .119 between the eigenvalue for the 3rd component of the permuted raw data and the observed data. An inspection of the scree plot underlined this duality rather than deciding it one way or the other.

Thus, rather than choosing the results of one procedure over the other, possible explanations for this discrepancy were explored. Hence, 3 PCAs, with 1 component, 2 components, and 3 components, respectively, involving the 12 world view variables and all 419 cases were conducted in SAS version 8.01, using the oblique rotation PROMAX (Hendrickson & White, 1964). [Aside: as the imputed data-sets had been found to be in fact identical, there was no need to run the respective PCAs 5 different times.]

Component loadings were interpreted at a cut-off value of .40.

The most informative PCA result, involving 3 components, is presented in Table 2. Here, it can be seen that the resulting structure is not a simple one. For instance, it should be noted that one component, labeled tentatively 'existential spirituality', appears to be the most clearly distinguished component, with component loadings ranging from .45 to .85. Further, the proportion of the variance explained by this factor is 31.5% with an eigenvalue of 3.78, thereby making it the dominant component of the set of three components.

The other two components explain less variance, 12.0% and 10.6% respectively, and are at the bare minimum in terms of variables needed for identifiability. In addition, for each component, one variable (i.e. items 6, 7, 9) has an additional substantial loading, which is to say a loading that approaches the .40 cut-off value, onto

Table 2. Oblique PCA of 12 worldview items with 3 components

Component Label	Item No.	Item	Component Loadings	
1 Existential Spirituality	3	I have a soul.	.85	-.02
	4	I am more than my body.	.77	-.03
	5	God or a Divine Being exists.	.83	-.06
	6	My thoughts and feelings influence my reality.	.45	.34
	8	There is a guiding, benevolent force to the universe.	.74	-.06
	12	Once I die, nothing of me will be left.*	.64	.06
2 Personal Control	1	I am in control of my life.	-.06	.76
	7	My life has no meaning.*	.28	.42
	11	I make choices in life freely.	-.05	.75
3 Philosophical Control	2	Coincidence is the guiding force of the universe.*	-.12	-.18
	9	Free will is a myth.*	-.03	.35
	10	Life is random, and you just have to do your best to get by.*	.15	-.06
percent of variance explained			31.5%	12.0%
				10.6%

Note: '**' denotes reverse-coded items; loadings of .40 or higher are bold-faced.

another component. According to the previously stated criteria these loadings are not significant. However, they certainly are substantial, and as such suggest an underlying complexity. In short, they border on being complex variables. As the second and third components are at the bare minimum for identifiability, the presence of a possible complex variable renders them unstable and weak. This assessment is further underscored by the components' low internal consistency, as measured through the alpha coefficient. Here, the second component has an alpha coefficient of .50, and the third component has an alpha coefficient of .48.

Thus, it appeared as though only the first component was viable. Interestingly enough, the results of the PCA with one component confirmed the structure of this first component, with only those items that loaded onto the first factor loading onto the only factor. The fact that the other items did not load onto this only factor suggested under-extraction. A PCA with two components, however, did not appear to adequately redress this problem of under-extraction, as the resulting matrix abounded with unique and complex variables. Thus, the PCA with three components resulted in the simplest structure, with the caveat that two of its components appear to be inadequately captured. The three-component structure is further supported by the low inter-factor correlations, which range from .15 to .28.

In conclusion, it appears as though the dimensionality of spirituality as measured by the World View Scale is indeed three-fold, but that the WVS in its current form simply was not able to adequately measure all three aspects. Thus, for the purpose of further analyses in this study, only the dominant component was considered.

To maximize the sensitivity of this one component, it was further streamlined by excluding one item (item 6) from it, which might easily be argued to be in fact complex. Statistically and conceptually, the component appeared to be more stable and concrete after the removal of this item.

Thus, the resulting variable retained from this scale was measured by 5 items, and was labeled 'existential spirituality'. The internal consistency of this new sub-scale as measured through the standardized alpha coefficient was .84.

Main Analysis

A canonical correlation was performed between the set of psycho-existential variables and the set of life-functioning variables using the PROC CANCORR function in SAS V8. The set of psycho-existential variables included purpose in life, self-esteem, satisfaction with life, social extrinsic religiosity, personal extrinsic religiosity, self-esteem, and existential spirituality. Thus, high scores and high loadings of these variables reflected greater perceived purpose in life, higher self-esteem, greater satisfaction with life, a greater perceived importance of religion in forming social interaction, a greater perceived importance of religion in offering solace in times of trouble, and a greater belief in spiritual concepts such as a soul, a divine being, and a transcendental existence. The set of life-functioning variables, loosely defined, included grade point average, self-rated health, where higher scores reflect better health, frequency of alcohol consumption, quantity of alcohol consumption, coping, where higher scores reflect better coping ability, stress, where higher scores reflect greater experienced stress, family communications, where higher scores reflect better functionality of communications, family conflicts, where higher scores reflect increased

conflict, family positive affect, attitudes towards lesbians and gay men, where higher scores reflect greater acceptance and open-mindedness, frequency of common sicknesses and ailments, number of different settings for sports involvement, and an importance rating of the university Career Services department.

The results of the canonical correlation analysis are presented in Table 3. To correct for missing data, the analysis was conducted five times, once for each whole-data set missing value imputation; the overall result was obtained by the combination of the five different results using the formulas given by Rubin (1987). According to Rubin (1987), the overall estimate is simply the average of the individual estimates. Or, more formally, where $\hat{Q}_j$ is the scalar quantity of interest, as for instance the canonical coefficient, obtained from data set j ($j = 1, 2, \dots, m$), and where U_j is the standard error associated with $\hat{Q}_j$, the overall, combined estimate is given by

$$\bar{Q} = \frac{1}{m} \sum_{j=1}^m \hat{Q}_j \quad [1]$$

The combination for the overall standard error is not quite so straightforward. Here, according to Rubin (1987), two types of variances have to be calculated first, the within-imputation variance, $\bar{U}$, and the between-imputation variance, B , which are given by the following equations:

$$\bar{U} = \frac{1}{m} \sum_{j=1}^m U_j \quad [2]$$

and
$$B = \frac{1}{m-1} \sum_{j=1}^m (\hat{Q}_j - \bar{Q})^2 \quad [3]$$

The total variance, T , is a combination of the within-imputation variance and the between-imputation variance, as given through the equation:

Table 3. Canonical correlation analysis

	Canonical Correlation	Standard Error	Squared Canonical Correlation	p value
Relationship 1	.773 [.773, .812]	.020	.598	< .0001
Relationship 2	.409 [.328, .489]	.041	.167	< .0001
Relationship 3	.305 [.217, .393]	.045	.093	.0002

Note: Multilevel structure is taken into account; 95% confidence intervals for the parameters are included in the brackets.

$$T = \bar{U} + \left(1 + \frac{1}{m}\right)B \quad [4]$$

Finally, the overall standard error is simply the square root of the total variance, T . In the case, in which the between-imputation variance is sufficiently small, it follows then that Rubin's (1987) combined standard error is essentially the square root of the within-imputation variance.

The results presented in Table 3 were arrived at through the use of Rubin's (1987) equations, as recommended by Schafer (1997). It should be noted, however, that in the case of the present data-set, the between-imputation variance was less than .001 for each canonical coefficient. This suggests that the estimates are fairly stable.

As can be seen in Table 3, the first canonical correlation was .77 (60% overlapping variance). The second was .41 (17% overlapping variance). The third was .31 (9% overlapping variance). The fourth, fifth, and sixth canonical correlations were not significant at an alpha level set at .05, and are thus not presented in Table 3.

The first canonical correlation is by far the most dominant one out of the three. The second one is only of marginal interest, and the third one could in fact be argued to be uninformative, as the Rubin's (1987) confidence interval around the point estimate includes zero. As this third canonical correlation, however, was conceptually interpretable and informative, it is presented with the other two canonical correlations.

The nature of the relationships of these three canonical correlations is presented in Table 4. Here, the correlations between the individual variables and their respective canonical variate are given. For each of the correlations, a 95% confidence interval around the mean of the five imputed data-sets is given, to allow a glimpse at the

Table 4. Canonical relationships between the psycho-existential and the life-functioning variables.

	Variate 1	Variate 2	Variate 3	Total
psycho-existential variables				
PIL	.882 [.876, .887]	--	--	
SAT	.709 [.704, .715]	--	--	
SELF	.882 [.876, .888]	--	--	
REL_SOC	--	--	.761 [.699, .824]	
REL_PER	--	.590 [.539, .642]	.484 [.382, .587]	
SPIR	--	.661 [.642, .679]	--	
percent of variance	.338	.129	.140	.607
redundancy	.202	.022	.014	.238
life functioning variables				
STRESS	-.466 [-.472, -.460]	.563 [.550, .576]	--	
COPING	.714 [.708, .720]	--	--	
FAMCOM	.496 [.486, .505]	--	--	
FAMCON	-.421 [-.428, -.413]	--	--	
FAMAFF	.650 [.645, .655]	--	--	
SOC	.649 [.643, .655]	.447 [.423, .470]	--	
ATLG	--	--	-.569 [-.619, -.518]	
SICK	--	.477 [.449, .506]	--	
HEALTH	.465 [.450, .481]	--	--	
percent of variance	.122	.112	.069	.303
redundancy	.072	.019	.006	.097

Note: In the absence of associated standard errors for the coefficients, a 95% confidence interval around the mean of the m imputed data-sets is included in the brackets. Percent of variance in the variables is the portion that is explained by a canonical variate. Redundancy is the degree of an association between a set of variables and the canonical variate for the other set of variables.

variation in the estimation of these correlations between the imputed data-sets. These variations tended to be very small for high correlations (e.g. interval range of .012 for self-esteem with the first canonical variate), and somewhat larger for low correlations (e.g. interval range of .205 for personal extrinsic religiosity with the third canonical variate). The size of the range of these confidence intervals did not appear to be related to either scale reliability or rate of missingness. It did, however, seem to be related to the size of the correlation.

In the absence of established guidelines for the interpretation level of correlations to canonical variates, guidelines regarding factor loadings were borrowed. Here, loadings are generally interpreted at the .32 level (Tabachnick and Fidell, 1999). For the present study, a somewhat more conservative approach was chosen, and correlations were interpreted as informative at the .40 level. In Table 4, only variables that had a correlation of .40 or higher with one or more canonical variate are presented. Of the psycho-existential variable, all are included in Table 4. Of the life functioning variables, the variables grade point average, importance of career services, frequency and quantity of alcohol consumption, and the number of sports settings were excluded from Table 4, as none of these variables achieved a correlation of .40 or higher with any of the canonical variates. Thus, the information in these variables was not captured by any of the three, presented canonical variates.

Of the psycho-existential variables, three correlated with the first canonical variate. These are purpose in life (.882), self-esteem (.882), and satisfaction with life (.709). Of the life functioning variables, seven correlated with the first canonical variate. They are, in order of strength of correlation, coping (.714), positive family

affect (.650), social responsibility (.649), family communication (.496), stress (-.466), health (.465), and family conflict (-.421). Thus, the first pair of canonical variates indicates that a positive, meaningful and satisfied attitude towards oneself is associated with good coping skills, higher family functioning, reduced stress, and good health.

The second pair of canonical variates is characterized by the following correlations. Of the psycho-existential variables, two correlated with their respective canonical variate: existential spirituality (.661) and personal extrinsic religiosity (.590). Of the life-functioning variables, three correlated with their variate: stress (.563), frequency of common ailments (.477), and social responsibility (.447). Thus, the second pair of canonical variates indicates that spiritual beliefs (e.g. belief in a soul, a divine being, etc.) and practices (e.g. praying to experience solace) are associated with stress itself, and potential sources of stress, such as ailments and social responsibility.

The third pair of canonical variates, as mentioned before, is statistically close to un-interpretable, but is conceptually interesting, and thus worth exploring. Of the psycho-existential variables, two correlated with their third canonical variate: social extrinsic religiosity (.761) and personal extrinsic religiosity (.484). Here it should be noted, however, that the latter is on the borderline in terms of meaningfulness, as the confidence interval around the mean includes values below the chosen cut-off point of .40. Of the life-functioning variables, only one variable correlated with its canonical variate: attitudes towards lesbians and gay men (-.569). Thus, the third pair of canonical variates suggests that high extrinsic religiosity, especially as it pertains to social gains, is associated with negative and disapproving attitudes towards lesbians and gay men.

As a follow-up, for each of the life-functioning variables presented in Table 4, a multiple regression analysis was conducted, where all the psycho-existential and several demographic variables were used as predictors and the respective life functioning variable as dependent variable. The goal of these follow-up multiple regressions was to determine the relative predictive power of the specific variables used as predictors, especially in regards to existential spirituality. It was also noted which type of variable, demographic or psycho-existential, had more predictive power.

In all, nine multiple regressions were conducted using SAS REG, one for each of the relevant life functioning variables. To protect the Type I error rate, the Bonferroni adjustment was used. Namely, the conventional alpha of .05 was divided by the number of tests (i.e. nine multiple regressions), resulting in the adjusted alpha of .006, which was used as the interpretation level for the estimates. The results of each of these multiple regression analyses, including b-weights, standard errors, test statistics, p-level, and 95% confidence intervals, are presented in Tables 7 through 15 in appendix B. A summary of these results is presented in Table 5, which gives the standardized regression coefficients. Excluded from this table were regression coefficients for predictors that were not significant at the .006 level, which is the Bonferroni corrected .05 level.

As can be seen in Table 5, the nine life functioning variables differed in their predictability based on the psycho-existential and selected demographic variables. The adjusted R-squared ranged from .295 for coping to .088 for frequency of sicknesses and ailments. Thus, combined predictions ranged from small (i.e. $\geq .06$) to large (i.e. $\geq .25$) effect size (Cohen, 1992).

Table 5. Follow-up multiple regression coefficients.

Predictors	HEALTH	COPING	STRESS	FAMCOM	FAMCON	FAMAFF	SOC	SICK	ATLG
GENDER	--	--	--	.176	--	--	--	.231	.314
AGE	--	--	--	.206	--	--	--	--	--
CLASS	--	--	--	--	--	--	--	--	--
MO_ED	--	--	--	--	--	--	--	--	--
PA_ED	--	--	--	--	--	--	--	--	--
INCOME	--	--	--	--	--	--	--	--	--
PHI	--	.262	--	--	--	.280	.318	--	--
SAT	.247	--	--	--	--	--	--	--	--
SPLF	.209	.343	-.341	.200	-.212	.207	.184	-.180	--
REL_SOC	--	--	--	--	--	-.135	--	--	--
REL_PER	--	--	--	--	--	--	--	--	--
SPIR	--	--	--	--	--	--	.153	--	--
Adjusted R ²	.180	.295	.183	.199	.117	.257	.287	.088	.116

Note: For each of the nine dependent variables there were from one to three significant predictors. The adjusted R² values suggest a range of effect sizes, from small (e.g. .088, .116, .117), to large (e.g. .257, .287, .295) (Cohen, 1992).

Health, in order of importance, was significantly predicted by satisfaction with life (.247), and self-esteem (.209). Coping was significantly predicted by self-esteem (.343) and purpose in life (.262). Stress was significantly predicted by self-esteem (-.341). Family communications was significantly predicted by age (.206), self-esteem (.200), and gender (.176) (0 = male, 1 = female). Family conflict was significantly predicted by self-esteem (-.212). Positive family affect was significantly predicted by purpose in life (.280), self-esteem (.207), and social extrinsic religiosity (-.135). Social responsibility was significantly predicted by purpose in life (.318), self-esteem (.184), and existential spirituality (.153). Frequency of common sicknesses and ailments (e.g. cold, headache) was significantly predicted by gender (.231) and self-esteem (-.180). And lastly, attitudes towards lesbians and gay men were significantly predicted by gender (.314), such that females had more positive attitudes.

The best predictor overall of all the psycho-existential and demographic variables was by far self-esteem, which was a significant predictor for eight out of the nine life functioning variables. It also had the largest overall standardized estimate (.343 for coping) for the regression with the greatest adjusted R squared value overall (.295).

The second best predictors overall were gender (0 = male, 1 = female) and purpose in life, which were a significant predictors for three out of the nine life functioning variables. Gender was a particularly powerful predictor for attitudes towards lesbians and gay men, where being female predicted more positive attitudes towards lesbians and gay men, a factor that explained 11.6% of the variance. Purpose in life was a particularly powerful predictor for social responsibility.

In all three instances in which purpose in life was a significant predictor, self-esteem was also a significant predictor. Furthermore, these three regressions, with coping, social responsibility, and positive family affect being the dependent variables, had the greatest variances accounted for (.295, .287, and .257, respectively) of the nine regressions.

The other psycho-existential and demographic variables significantly predicted the life function variables only sporadically (i.e. satisfaction with life, social extrinsic religiosity, personal extrinsic religiosity, existential spirituality for the psycho-existential variables, and age for the demographic variables). Most of the demographic variables did not predict the life functioning variable at all (i.e. college class standing, mother's education, father's education, family income). Thus, the psycho-existential variables appear to have more predictive power than the demographic variables.

Typically, the regressions with the more variance accounted for included more psycho-existential predictors than demographic predictors. In the three highest explained variances cases, the predictors were only psycho-existential variables.

Post hoc analyses

At the recommendation of my thesis committee, three additional analyses were conducted post-hoc. These analyses were designed to (1) test the consistency of the psycho-existential variable domain, (2) investigate the relationship between the full spectrum of the concept of spirituality, as defined in this study, and life-functioning, and (3) to assess the presence of a difference in spirituality between students of lower class standing (i.e. freshmen) and students of higher class standing (i.e. sophomores, juniors and seniors). The results of these post-hoc analyses are presented next.

Consistency of the psycho-existential well-being domain. To better understand the relationships between the variables that were originally grouped as psycho-existential variables, a PCA was conducted on these six variables. To determine the number of components to be retained, both the MAP procedure (Velicer, 1976) and parallel analysis (Horn, 1965) were conducted. The MAP (Velicer, 1976) procedure indicated for all five imputed datasets that one component should be retained where the smallest average squared correlation was .090. Parallel analysis (Horn, 1965) indicated consistently for all five imputed datasets that two components should be retained.

Thus, PCA's using PROMAX rotation, were conducted in two ways: (1) by extracting one component; and (2) by extracting two components. The results of the PCA extracting one component indicated that all six psycho-existential variables, satisfaction with life, purpose in life, self-esteem, existential spirituality, personal extrinsic religiosity, and social extrinsic religiosity, loaded significantly onto one component, as evidenced by a loading of .40 or higher. The three highest loading variables were, in order, purpose in life, satisfaction with life, and self-esteem, all of which had a component loading of .70 and above.

The results of the PCA extracting two components are presented in Table 6. Here, it can be seen that the extraction of two components yields a simple structure, where satisfaction with life, purpose in life, and self-esteem form one component, and existential spirituality, personal extrinsic religiosity, and social extrinsic religiosity form the another component. The correlation between these factors is .286, which is not significant given the cut-off of .40 used in this study.

Table 6. PCA with PROMAX rotation of the psycho-existential variables

	Component 1	Component 2
PIL	.850	.187
SELF	.848	.026
SAT	.809	.197
REL_SOC	.031	.703
REL_PER	.101	.874
SPIR	.253	.597
inter-component correlation	.286	

Thus, the six psycho-existential variables used in this study are sufficiently different from each other to be conceptualized as forming two separate factors, just as the trend in the forming of the canonical variates suggested. However, they are not entirely unrelated, as they share enough variance to load onto one component.

Relationship between the three spirituality subscales and life-functioning. In order to explore the relationship between the full spectrum of spirituality as defined in this study and life functioning, a canonical correlation analysis was conducted. Here, all three subscales of the WVS formed one group of variables, and the 11 life-functioning variables used in the previous canonical correlation formed the other group of variables. The results of this analysis are presented in Table 7.

Here it can be seen that all three possible canonical correlations are in fact significant, but that the first canonical correlation represents the dominant relationship with a correlation of .62 (39% overlapping variance). The second canonical correlation was substantially smaller with a correlation of .35 (13% overlapping variance), and the third canonical correlation was only .15 (2% overlapping variance).

The nature of the relationships of these three canonical correlations is presented in Table 8. Here, the correlations between the individual variables and their respective

canonical variate are given. As before, for each of the correlations, a 95% confidence interval around the mean of the five imputed data-sets is given, and only correlations are shown in Table 8 which were .40 in magnitude or higher.

The first canonical variate is characterized by the following correlations. Of the spirituality subscales, all three correlated significantly with the first canonical variate. In order of strength of the correlation, their correlations were .896 for personal control, .588 for philosophical control, and .479 for existential spirituality. Of the life-functioning variables, social responsibility (.784), coping (.612), positive family affect (.544), family communication (.509), and physical health (.446) all correlated positively with the first canonical variate.

It is interesting to note that the first canonical relationship between the three spirituality subscales and the life-functioning variables looks very similar to the first canonical relationship between the psycho-existential well-being variables and the life-functioning variables. Here, the spirituality subscales forms a variate that echoes the emphasis on personal control and self-determination that the first canonical variate of the psycho-existential variables has. Furthermore, the same life-functioning variables that were related to that psycho-existential variate are also correlated with this canonical variate. The only variables that are missing as significant correlations with this variate are stress and family conflict, which both previously had a negative and relatively weak correlation.

. For the second canonical variate only one of the three spirituality subscales is significantly related to it. This subscale is the existential spirituality subscale, the only subscale included in earlier analyses, which has a correlation of .791 with the second

canonical variate. Likewise, for the life-functioning variables only a limited number of variables are significantly correlated with the second canonical variate. These two variables are both pertaining to alcohol consumption. Namely, the quantity of alcohol consumption has a correlation of $-.694$, and the frequency of alcohol consumption has a correlation of $-.448$ with the second canonical variate. Thus, existential spirituality, the belief in a higher being and one's own transcendental existence, is negatively associated with alcohol consumption.

Similar to the second canonical variate, only one of the three spirituality subscales is significantly related to the third canonical variate. Here, philosophical control, the extent to which one believes in free will and an ordered universe, has a correlation of $-.723$ with the third canonical variate. Of the life-functioning variables, only attitudes towards lesbians and gay men ($-.613$) and quantity of alcohol consumed ($.446$) are significantly correlated. Thus, a belief in coincidence and randomness is associated with negative attitudes towards lesbians and gay men and moderately high amounts of alcohol consumption.

In conclusion, it has to be reiterated that the second and third subscale of the WVS are not reliably measured. As such, the canonical correlation analysis presented here serves merely exploratory purposes.

Differences in spirituality according to academic class standing. In order to assess the existence of a difference in spirituality between students of lower class standing (i.e. freshmen) and students of higher class standing (i.e. sophomores, juniors and seniors), a multivariate analysis of variance (MANOVA) was conducted. Here, class standing was treated as the only independent variable, and the three subscales of

spirituality as the three dependent variables. As only 2.86% of the data necessary for this analysis was missing, the regular complete-case analysis approach was chosen instead of the multiple imputation method used otherwise in this thesis. The results of this analysis are presented in Table 9.

In this table it can be seen that class standing (i.e. freshmen versus higher) did account for some statistically significant differences in spirituality. Namely, in terms of the spirituality subscale on philosophical control, freshmen scored significantly lower with $F(1, 405) = 5.4$, with $p = .021$. There were no statistically significant difference between freshmen and students of higher class standing regarding the other two subscales.

Discussion

The goal of this study was to identify the role of spirituality in the quality of life. To this end, two levels of inquiry were used. First, a macro-level investigation of the relationship between existential well-being, of which spirituality is seen to be a part, and life functioning was conducted in the form of a canonical correlation analysis. Second, a micro-level investigation of the predictive power of the psycho-existential variables, including spirituality, for the individual life functioning variables was conducted in the form of several follow-up multiple regressions.

Before any of these analyses could be conducted, however, a suitable scale for spirituality had to be developed. Hence, before the results of the two levels of inquiry are discussed, a few comments regarding the development of this scale for spirituality are in order.

A measure for spirituality: Existential spirituality

As pointed out earlier, a scale for spirituality was to be developed that would address issues of spiritual matter while avoiding reference to specific religious domains. The issues to be addressed included beliefs such as in a benevolent, higher being, one's own transcendental existence, free will, and a meaningful ordering of the universe. It was hoped that these issues could be addressed without specific religious references, because a need in the literature exists to differentiate between the effects of religion and spirituality. Thus, a scale that is as much removed from a religious context as possible would allow greater interpretability.

This scale development was partially successful. The partial success lies in the successful measure of one aspect of spirituality that was labeled 'existential

spirituality'. The concept of 'existential spirituality' here derived describes the existential beliefs a person holds. These existential beliefs mainly pertain to the possibility of a transcendental existence (e.g. soul, an existence beyond the pure physical form one holds) and the ordering of the philosophical world. A person of high existential spirituality is conceptualized here to be a person who believes in a transcendental existence and in a benevolent, theistic ordering of the universe.

The advantage in using this measure of spirituality rather than a more comprehensive one is that the narrowness of this construct allows a certain degree of precision in the interpretation of it. As it happened, however, this measure of spirituality resulted in an even narrower focus than desired.

Originally, the measure was designed to also include the dimension of experienced control, in a personal and a philosophical sense. While the results of the PCA suggest the presence of these dimensions, these two aspects of spirituality could not be measured in a satisfactory fashion. The variable sampling of this study (i.e. the number of items written for this scale) was simply too limited to adequately capture these two additional concepts, should they in fact be part of the underlying structure of spirituality as conceptualized in this study. Given the current data, that possibility certainly exists, but is by no means ascertained. A replication with increased variable sampling may shed more light on this issue.

As a consequence of this partial success in measuring spirituality in a non-religious fashion is the fact that spirituality cannot be discussed within the findings of this study in the desired and anticipated breadth of the concept. As only one aspect of spirituality was adequately measured, namely existential spirituality, only that aspect of

spirituality can be discussed at this point. That fact certainly limits the scope of this discussion, but cannot be escaped.

The connection between psycho-existential well-being and life-functioning

The most important finding of this study was that the relationships between psycho-existential well-being and several life-functioning aspects are substantial within an undergraduate population. Particularly self-esteem, purpose in life, and satisfaction with life, in order of importance, seemed to be able to explain a substantial amount of the variance of the life functioning variables.

Also of interest is the multi-dimensionality of the relationship between the constructs of psycho-existential well-being and life functioning. In the present study, at least two types of links between these two overall groups of variables were found. The more informative and dominant link describes a relationship of high psycho-existential well-being and healthy life-functioning. Here, high self-esteem, purpose in life, and satisfaction with life are positively linked to good coping, high positive family affect, social responsibility, family communication, health, and low stress and family conflict, in order of importance. In essence, this relationship describes the conjunction of healthy experience and expression.

The other link describes the relationship of existential beliefs and personal meaning in religion to a not so clear-cut mixture of life-functioning variables. Here, a person's experienced stress, the frequency of common ailments and illnesses, and social responsibility are combined to form a construct that may tentatively be called life-stress. Thus, whereas the first relationship informatively described a healthy connection, this relationship seemingly pertains to barriers to higher life functioning.

Of course, the causal directionality and structural nature of either of these two relationships remains unclear. Any suggestion to this regard based on the results of this study would not only be speculative and unwarranted, as the approach chosen was a correlation one. Thus, while the existence of a link between the two constructs of interest could be tested, and was in fact found, the nature of these relationships cannot be more accurately outlined due to the inferential limitations of this design (i.e. cross-sectional) and its analysis (i.e. correlational). Other study designs (i.e. longitudinal) matched with more specific hypotheses and structures (i.e. structural equation modeling) would be better suited for that task.

What may be noted, however, is the seemingly conceptual divergence among the chosen psycho-existential variables. It was noted earlier, that two of these variables, satisfaction with life and extrinsic religiosity, were added to this construct with a little hesitation. In the case of satisfaction with life, the results would suggest that its designation as a psycho-existential variable was an ample one. After all, satisfaction with life was an influential part of the first and most important canonical variate without being collinear with the other variables. Thus, it would appear that satisfaction with life does in fact contribute an important and relevant facet to the concept of psycho-existential well-being.

In contrast, extrinsic religiosity appeared to be sufficiently different to not adequately fit within the scope of psycho-existential well-being. Originally, it had not been conceived of as a psycho-existential variable either, but it was believed that due to the spiritual component in the construct of psycho-existential well-being, extrinsic religiosity might exhibit a certain degree of relevance in terms of a frame of reference.

Instead, neither extrinsic religiosity nor existential spirituality appeared to fit within the scope of psycho-existential well-being. Considering that the heart of this study was to investigate the role of spirituality in the context of the quality of life, this finding was rather unexpected.

To further investigate this unexpected finding, a post-hoc analysis was conducted. In this analysis, the group of variables here designated as psycho-existential variables, namely purpose in life, satisfaction with life, self-esteem, both social and personal extrinsic religiosity, and existential spirituality, were factor analyzed to determine their underlying structure. Here it was found that this group may in fact conceptually be divided into two groups. The first group consists of purpose in life, satisfaction with life, and self-esteem, and the second group consists of both aspects of religiosity, social and personal, and existential spirituality. The correlation between these factors was fairly low, indicating a certain level of divergence from the first group. However, it was also found that a factor solution with only one component would result in a component on which all six of these variables would load significantly. Thus, while the results suggest a certain degree of divergence between purpose in life, satisfaction with life, and self-esteem on the one hand, and social extrinsic religiosity, personal extrinsic religiosity, and existential spirituality on the other hand, there is also evidence to suggest that it remains meaningful to discuss these six variables within one group.

The relevance of spirituality to life functioning

The most noteworthy thing about the relevance of spirituality as measured in this study (i.e. existential spirituality) to life functioning is its absence. This lack of

relevance is evidenced by the results of the follow-up multiple regressions. Here, it was found that the psycho-existential variables in general out-competed demographic variables in their predictive power of life functioning variables. Against expectations, however, the role of existential spirituality in this predictive power was close to non-existent. Here, the only exception was a small predictive capacity of existential spirituality in terms of social responsibility, a finding that echoes to a small extent the findings of Benson (1980).

What was less surprising was the fact that extrinsic religiosity, both personal and social, did not appear to be particularly good predictors of life functioning either. In fact, personal extrinsic religiosity did not significantly predict any life functioning variable at all, and social extrinsic religiosity predicted low positive family affect.

This finding in itself is not so interesting. What is interesting, however, is that existential spirituality and extrinsic religiosity significantly predicted different aspects of life functioning. That divergent pattern suggests that at least existential spirituality and extrinsic religiosity were measured sufficiently independent from each other to allow for a clearer interpretation.

One explanation for the failure to identify the relevance of spirituality on life functioning is the fact that spirituality was measured and analyzed in this study in a restrictively narrow fashion, as pointed out earlier. Thus, spirituality was not assessed to the extent originally desired for the purposes of this study. Consequently, it is less surprising that its role was found to be less influential than anticipated.

It should also be pointed out that the failure to find relevance of existential spirituality to life functioning of this study might also be in part a result of the

inadequate measuring of some of the life functioning variables. Several of these variables, in particular health, academic success, and involvement in sports, were measured in a psychometrically unsound manner. The reason for this poor measurement simply lay in the fact that the survey from which the present data was derived was collected for descriptive purposes rather than inferential ones, as the survey was primarily designed for the purposes of the Student Affairs office of the University of Rhode Island. Thus, expediency was chosen over psychometric quality in some instances, so as to maintain an acceptable overall survey length.

Consequently, the results presented here may at first glance suggest a greater irrelevance of existential spirituality to life functioning than may actually be the case. This possibility is underscored by the results of the post-hoc analysis regarding the canonical correlation between all three subscales of spirituality and life-functioning. Here, three significant correlations were found. Furthermore, the dominant canonical correlation was very similar in its characterization to that of the previously discussed canonical correlation. Only in this case, it was the spirituality subscales alone that related in very similar ways to the life-functioning variables as the psycho-existential well-being variables had.

Thus, this exploratory analysis suggests that there may be a much greater relevance of spirituality in the quality of life than suggested by the main analysis of this thesis, if spirituality is analyzed in a less narrow fashion.

It should also be taken into consideration that the sample for this study consisted predominantly of undergraduate students of lower class standing. In particular, freshmen were over-sampled in this study. Here, the concern is that it is quite plausible

that the participants' view on spiritual matters may be somewhat skewed in a reactionary way to their upbringing. In particular freshmen, who have left home for the first time in their life, may well over-react against former attitudes towards spiritual matters as a way of asserting their independence. These reactionary views, however, would not necessarily be as representative as the more maturely formed views of students who have been on their own somewhat longer.

The post-hoc analysis of the differences in spirituality between freshmen and students of higher class standing supports this stance partially. Here, significant differences are observable regarding the views of the philosophical ordering of the universe, where freshmen are more likely to believe in coincidence and a random ordering of the universe. Since differences in spirituality are observable despite the similar ages of these respondents, it seems plausible that reactionary attitudes toward spiritual matters may contort the picture somewhat.

In summary, then, the limitations of this study include several things. As pointed out in this discussion already, they include a too narrow measuring of spirituality, and the limitations implicit in a cross-sectional and correlational design. Additionally, some of the life functioning variables were measured in psychometrically unsound manners for the sake of expedience.

In addition to these already mentioned limitations is the low response rate to the survey, on which the data for this thesis is based. This response rate was only 41.5%, a fact that in itself suggests that the sample upon which this data is based may in fact not be a representative sample of the University of Rhode Island undergraduate population. For instance, it is very plausible that the respondents of this survey may for instance be

among the more socially responsible individuals of this campus. Were that so, the generalizability of the findings of this study would be severely limited.

Consequently, the room for future improvements and directions is vast. For one, it would be interesting to see to what extent the findings of this study may be generalizable to other populations, such as different age groups, ethnic backgrounds, and different socio-economic status. Here, of course, special attention should be paid to ensure a greater response rate than in this study so that the consideration of these non-random confounds may be eliminated.

Further, it would be interesting to explore the nature of the here-described relationships more concretely through the use of longitudinal designs (as experimental designs hardly seem feasible within the study of spirituality). To that end, it would be vital to either improve upon the measure of spirituality used in this study (i.e. to increase the number of items to measure all underlying concepts reliably) or to use a different measure altogether. Either alternative would further the topic under study.

In conclusion, it should be noted that the study of spirituality within psychology deserves increased recognition and attention, for which it may well need increased sophistication in its discussion and investigation. Given the marked increase in attention spirituality has received in recent years throughout the literature, and given the resistance of APA journals to accommodate that trend to at least some extent, it seems that the field of psychology is somewhat divided as to the place spirituality should hold within psychology. Personally, I am convinced that the study of spirituality within psychology is not only a philosophically stimulating but potentially useful avenue of exploration, as it offers a new way of thinking about old issues. Fortunately, the recent

movement toward a more positive psychology (Seligman & Csikszentmihalyi, 2000) not only seems to recognize this potential, but also encourages this type of inquiry. It is my sincere hope that the rest of the field will follow suit.

Appendix A

Student Quality of Life and Satisfaction Survey

SQOLAS 2001 Student Quality of Life and Satisfaction

Note: This instrument is confidential and anonymous. You cannot be identified in any manner. You must be at least 18 years old to participate in this study. We ask you to please respond to all items as honestly as possible. This survey is a general attitude and concerns survey related to how students feel about various aspects concerning their lives as college students. You can refuse to participate and you can refuse to respond to any item. We ask you to PLEASE respond to all of the items if possible.

If you are at least 18 years old, if you have read the above note, and if your questions have been answered, you have agreed to be a participant in this study. Thanks!

Survey questions? Call x4922

RESPONSE CODE

For these sets of questions, please use the numerical scale to indicate your level of agreement. The scale is:

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neither agree nor disagree

5 = slightly agree

6 = agree

7 = strongly agree

Your Life	Your Response
1. In most ways, my life is close to ideal.	1 2 3 4 5 6 7
2. The conditions of my life are excellent.	1 2 3 4 5 6 7
3. I am satisfied with my life.	1 2 3 4 5 6 7
4. So far I have gotten the important things I want in life.	1 2 3 4 5 6 7
5. If I could live my life over, I would change almost nothing.	1 2 3 4 5 6 7

Living your Life	Your Response
1. I am usually completely bored.	1 2 3 4 5 6 7
2. Life to me seems always exciting.	1 2 3 4 5 6 7
3. In life, I have no goals or aims at all.	1 2 3 4 5 6 7
4. My personal existence is utterly meaningless and without purpose.	1 2 3 4 5 6 7
5. Every day is constantly new and different.	1 2 3 4 5 6 7
6. If I could choose, I would prefer never to have been born.	1 2 3 4 5 6 7
7. After retiring, I would do some of the exciting things I have always wanted to do.	1 2 3 4 5 6 7
8. In achieving life goals I have made no progress whatsoever.	1 2 3 4 5 6 7
9. My life is empty, filled only with despair.	1 2 3 4 5 6 7
10. If I should die today, I would feel that my life has been worthwhile.	1 2 3 4 5 6 7
11. In thinking of my life, I often wonder why I exist.	1 2 3 4 5 6 7
12. As I view the world in relation to my life, the world completely confuses me.	1 2 3 4 5 6 7
13. I am not a very responsible person.	1 2 3 4 5 6 7
14. Concerning a person's freedom to make his or her own decisions, I believe one is absolutely free to make all life choices.	1 2 3 4 5 6 7
15. With regard to death, I am prepared and unafraid.	1 2 3 4 5 6 7
16. With regard to suicide, I have thought of it seriously as a way out.	1 2 3 4 5 6 7
17. I regard my ability to find a meaning, purpose, or mission in life as very great.	1 2 3 4 5 6 7
18. My life is in my hands and I am in control of it.	1 2 3 4 5 6 7
19. Facing my daily tasks is a source of pleasure and satisfaction.	1 2 3 4 5 6 7
20. I have discovered no mission or purpose in life.	1 2 3 4 5 6 7

RESPONSE

IN THE LAST MONTH, how often was each of these statements true of your life?

- 1 = never
2 = seldom
3 = occasionally
4 = often
5 = frequently

Managing your Life		Your Response				
1.	I was able to cope with difficult situations.	1	2	3	4	5
2.	I felt overwhelmed.	1	2	3	4	5
3.	I was able to cope with unexpected problems.	1	2	3	4	5
4.	I felt stressed by unexpected events.	1	2	3	4	5
5.	I successfully solved problems that came up.	1	2	3	4	5
6.	I felt that I had more stress than usual.	1	2	3	4	5
7.	I felt able to cope with stress	1	2	3	4	5
8.	I felt that there was not enough time to complete my daily tasks.	1	2	3	4	5
9.	I felt able to meet demands.	1	2	3	4	5
10.	I was pressured by others.	1	2	3	4	5

RESPONSE

For these items, please use the following alternatives to express how you see the family in which you grew up.

- 1 = never
2 = rarely
3 = sometimes
4 = frequently
5 = always

Your Family		Your Response				
1.	The children of my family fight with each other.	1	2	3	4	5
2.	People in my family have to be reminded when they are asked to do something.	1	2	3	4	5
3.	People in my family do not care enough about what I need.	1	2	3	4	5
4.	Members of my family argue about money.	1	2	3	4	5
5.	My family accepts me as I am.	1	2	3	4	5
6.	People in my family listen when I speak.	1	2	3	4	5
7.	I feel respected by my family.	1	2	3	4	5
8.	People in my family hit each other.	1	2	3	4	5
9.	When I have questions about personal relationships, I talk with family members.	1	2	3	4	5
10.	I let my family know when I am sad.	1	2	3	4	5
11.	I let family know when I feel upset.	1	2	3	4	5
12.	People in my family yell at each other.	1	2	3	4	5
13.	My family sees me as a hopeless case.	1	2	3	4	5
14.	People in my family use my things without asking.	1	2	3	4	5
15.	In my family, we talk about what is right and wrong with regard to sex.	1	2	3	4	5
16.	Family members are critical of each other's eating habits.	1	2	3	4	5
17.	When things are going wrong in my family, someone gets blamed.	1	2	3	4	5
18.	In my family, we talked about the physical changes that go along with growing up.	1	2	3	4	5
19.	I tell people in my family when I am angry with them.	1	2	3	4	5
20.	I feel loved by my family.	1	2	3	4	5
21.	I let people in my family know when I feel afraid.	1	2	3	4	5
22.	People in my family are not interested in what I do.	1	2	3	4	5
23.	I feel like a stranger in my own house.	1	2	3	4	5
24.	People in my family discuss their problems with me.	1	2	3	4	5

RESPONSE CODE

For these two sets of questions, please use the following code for your responses:

SA = strongly agree

A = agree

U/N = unsure/neutral

D = disagree

SD = strongly disagree

Attitudes	Your Response				
1. It is no use worrying about current events or public affairs; I can't do anything about them anyway.	SA	A	N	D	SD
2. Every person should give some of his time for the good of his town or country.	SA	A	N	D	SD
3. Our country would be a lot better off if we didn't have so many elections and people didn't have to vote so often.	SA	A	N	D	SD
4. Letting your friends down is not so bad because you can't do good all the time for everybody.	SA	A	N	D	SD
5. It is the duty of each person to do his or her job the very best he/she can.	SA	A	N	D	SD
6. People would be a lot better off if they could live far away from other people and never have to do anything for them.	SA	A	N	D	SD
7. At school, I usually volunteered for special projects.	SA	A	N	D	SD
8. I feel very bad when I have failed to finish a job I promised I would do.	SA	A	N	D	SD

World View	Your Response				
1. I am in control of my life.	SA	A	U	D	SD
2. Coincidence is the guiding force of the universe.	SA	A	U	D	SD
3. I have a soul.	SA	A	U	D	SD
4. I am more than my body.	SA	A	U	D	SD
5. God or a Divine Being exists.	SA	A	U	D	SD
6. My thoughts and feelings influence my reality.	SA	A	U	D	SD
7. My life has no meaning.	SA	A	U	D	SD
8. There is a guiding, benevolent force to the universe.	SA	A	U	D	SD
9. Free will is a myth.	SA	A	U	D	SD
10. Life is random, and you just have to do your best to get by.	SA	A	U	D	SD
11. I make choices in life freely.	SA	A	U	D	SD
12. Once I die, nothing of me will be left.	SA	A	U	D	SD

RESPONSE

For these items, please use the following response code:

SD = strongly disagree

D = disagree

N = neutral

A = agree

SA = strongly agree

Religion	Your Response				
1. What religion offers most is comfort in times of trouble and sorrow.	SD	D	N	A	SA
2. I go to church/religious service because it helps me make friends.	SD	D	N	A	SA
3. I go to church/religious service mainly because I enjoy seeing people I know there.	SD	D	N	A	SA
4. Prayer is for peace and happiness.	SD	D	N	A	SA
5. I go to church/religious service mostly to spend time with my friends.	SD	D	N	A	SA
6. I pray mainly to gain relief and protection.	SD	D	N	A	SA

RESPONSE CODE

Please indicate your level of agreement with this set of statements by using the scale below:

strongly disagree

1

2

3

4

5

strongly agree

Opinions		Your Response				
1.	Lesbians just can't fit into our society.	1	2	3	4	5
2.	State laws regulating private, consenting lesbian behavior should be loosened.	1	2	3	4	5
3.	Female homosexuality is a sin.	1	2	3	4	5
4.	Female homosexuality in itself is no problem, but what society makes of it can be a problem.	1	2	3	4	5
5.	Lesbians are sick.	1	2	3	4	5
6.	I think male homosexuals are disgusting.	1	2	3	4	5
7.	Male homosexuality is perversion.	1	2	3	4	5
8.	Male homosexuality is a natural expression of sexuality in men.	1	2	3	4	5
9.	Homosexual behavior between two men is just plain wrong.	1	2	3	4	5
10.	Male homosexuality is merely a different kind of lifestyle that should not be condemned.	1	2	3	4	5

RESPONSE

For this set of questions, please use the following code for your responses:

SD = strongly disagree

D = disagree

A = agree

SA = strongly agree

Self		Your Response			
1.	On the whole, I am satisfied with myself.	SD	D	A	SA
2.	At times I think I am no good at all.	SD	D	A	SA
3.	I feel I have a number of good qualities.	SD	D	A	SA
4.	I am able to do things as well as most other people.	SD	D	A	SA
5.	I feel I have not much to be proud of.	SD	D	A	SA
6.	I certainly feel useless at times.	SD	D	A	SA
7.	I feel I am a person of worth, at least on an equal plane with others.	SD	D	A	SA
8.	I wish I could have more respect for myself.	SD	D	A	SA
9.	All in all, I am inclined to feel that I am failure.	SD	D	A	SA
10.	I take a positive attitude toward myself.	SD	D	A	SA

RESPONSE CODE

WITHIN THE PAST YEAR, how often have you had any of these listed illnesses and/or conditions

Your Health		Your Response				
		Never	1-2 times	3-4 times	5-6 times	7+ times
1.	Common cold	0	0	0	0	0
2.	Headaches	0	0	0	0	0
3.	Ear infection	0	0	0	0	0
4.	Back pain	0	0	0	0	0
5.	Heart palpitations	0	0	0	0	0
6.	Sinus infection	0	0	0	0	0
7.	Flu	0	0	0	0	0
8.	Abdominal pain	0	0	0	0	0
9.	High blood pressure	0	0	0	0	0
10.	Sore throat	0	0	0	0	0
11.	Sexually transmitted diseases	0	0	0	0	0
12.	Fractured/broken bones	0	0	0	0	0
13.	Tightness in the chest	0	0	0	0	0
14.	Urinary tract infections	0	0	0	0	0
15.	Asthma attacks	0	0	0	0	0
16.	Menstrual pain	0	0	0	0	0
17.	Shortness of breath	0	0	0	0	0
18.	Blacking out/passing out	0	0	0	0	0

GETTING CAREER INFORMATION TO YOU

What is the best way for you to receive information regarding

Career Services? (Check only one)

- ☐ Direct mail to permanent address
☐ Direct mail to school address
☐ Five Cent Cigar
☐ Email
☐ Posters
☐ Handouts
☐ Voice Mail
☐ Residence Hall Programs
☐ Through Professors announcing info
☐ Career Website
☐ Other _____

How frequently do you use BEACON?

- ☐ never
☐ infrequently
☐ sometimes
☐ frequently
☐ very often
☐ not aware of BEACON

Please provide any comments concerning other career services and events that would assist you in meeting your career goals. (continue on back)

HEALTH AND SPORTS

IN GENERAL, how would you rate your physical health?

- ☐ Poor
☐ Fair
☐ Good
☐ Excellent

Do you engage in physical recreation? Please mark each of the following statements that applies to you with a check:

- ☐ I am a NCAA athlete
☐ I play intercollegiate sport(s)
☐ I take part in club sport program(s)
☐ I play sports with my friends
☐ I don't play sports

ALCOHOL CONSUMPTION

Within the past 30 days, on how many occasions have you consumed alcohol? _____

Within the past 30 days, on those occasions on which you drank, how many drinks did you consume on average? _____

Within the past 30 days, how often (if at all) has your drinking caused you to ...? (please write number of occasions on line)

- ☐ Have a hangover
☐ Miss a class
☐ Do something you later regretted
☐ Argue with friends
☐ Forget where you were and what you did

USING CAREER SERVICES

How important is the Career Services Department to you in assisting you to reach your goals?

- ☐ not important
☐ somewhat important
☐ important
☐ very important
☐ extremely important

Have you ever used or visited Career Services at Roosevelt Hall?

- ☐ yes
☐ no

If yes, how satisfied were you with the services and information provided?

- ☐ very satisfied
☐ satisfied
☐ somewhat satisfied
☐ somewhat dissatisfied
☐ dissatisfied
☐ very dissatisfied

If no, why haven't you used Career Services? (check all that apply)

- ☐ felt it was too early
☐ took too long to get an appointment
☐ Haven't felt the need to
☐ Don't know where the office is
☐ Didn't know about Career Services
☐ None of the events appealed to me
☐ I wasn't encouraged by faculty
☐ I wasn't encouraged by other students
☐ I felt the events are only for seniors
☐ I didn't feel my major applied to Career Services
☐ Schedule conflicts
☐ Didn't think they handled grad school issues
☐ Used the career website but didn't visit
☐ Other _____

CAREER SERVICES FEATURES

Which of the following items would be most important to you concerning Career Services. Please check your top THREE choices:

- ☐ Seeing a career advisor
☐ Career testing
☐ Resume or cover letter help
☐ Help for undecided major
☐ On-campus interviews
☐ Full-time jobs
☐ Internship jobs
☐ Summer or part-time jobs
☐ Job fairs
☐ Finding an alumni mentor or contact

Which of the following career events would you have interest in attending in the future:

- ☐ Walk-in Quick Questions
☐ Job fairs
☐ Graduate school fairs
☐ On-campus interviewing
☐ Company presentations
☐ Job search skills workshops (interviewing, resume writing, networking)
☐ Job search using technology workshops
☐ Undecided major workshops
☐ Workshops on what to do at Job Fairs

Assuming that jobs for all levels of students are available at the following events (full-time, summer, internship) which of the following specific events would you be interested in attending in the future?

(Check all that apply)

- ☐ Monster BEACON Beach Party
☐ Internship and Co-op Job Fair
☐ Summer and Internship Job Fair
☐ Graduate School Expo
☐ Engineering and Technology Job Fair
☐ Business Job Fair

YOU

Gender:

- ☐ Male
☐ Female

Age: _____

Religion:

- ☐ Catholic
☐ Protestant
☐ Jewish
☐ Buddhist
☐ Hindu
☐ Sikh
☐ Other Religion (please specify) _____
☐ Agnostic/questioning
☐ Atheist
☐ non-religious, but spiritual

Sexual Orientation:

- ☐ heterosexual
☐ gay/lesbian
☐ bisexual
☐ transgender

Ethnic Background:

- ☐ American Indian/Alaskan Native
☐ Black/African American
☐ Hispanic/Latino/a
☐ White/Caucasian
☐ Asian American/Pacific Islander
☐ Other (please specify) _____

YOU THE STUDENT

Class Standing:

- ☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior

Major in College:

- ☐ Social Sciences
☐ Natural Sciences
☐ Mathematics and Engineering
☐ Business and Management
☐ Humanities
☐ Arts and Design
☐ Health
☐ Resource Economics
☐ Other (please specify) _____
☐ Undecided

Grade Point Average to Date: _____

(if freshman, please give High School GPA)

Living Arrangement:

- ☐ on campus
☐ off campus

Member of sorority/fraternity?

- ☐ yes
☐ no

Are you a member of a URI club?

- ☐ yes
☐ no

YOUR FAMILY

Mother's Education:

- ☐ no High School Diploma or equivalent
☐ High School Diploma or equivalent
☐ Bachelor of Arts/Science
☐ Masters/graduate degree
☐ Ph.D./M.D./J.D.

Father's Education:

- ☐ no High School Diploma or equivalent
☐ High School Diploma or equivalent
☐ Bachelor of Arts/Science
☐ Masters/graduate degree
☐ Ph.D./M.D./J.D.

Annual Family Income:

- ☐ Less than \$10,000
☐ \$10,000 - \$20,000
☐ \$20,000 - \$30,000
☐ \$30,000 - \$50,000
☐ \$50,000 - \$70,000
☐ \$70,000 - \$100,000
☐ More than \$100,000

Thank you for your participation!!!

Additional Tables

Table 10. Multiple regression: Health

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	2.05	.400	1683	5.12	< .0000	1.27	2.83	0
GENDER	-.152	.075	8976	-2.02	.0439	-.30	-.01	-.101
AGE	-.019	.016	939	-1.20	.2313	-.05	.01	-.067
CLASS	.053	.040	204	1.33	.1838	-.03	.13	.077
MO_ED	.002	.043	347	.05	.9631	-.08	.09	.002
FA_ED	-.059	.038	759	-1.54	.1244	-.13	.02	-.083
INCOME	.067	.024	270	2.74	.0066	.02	.11	.142
SAT	.157	.039	20052	4.04	.0001	.08	.23	.247
PIL	.026	.069	2460	.38	.7072	-.11	.16	.026
REL_SOC	-.031	.043	40126	-.73	.4660	-.12	.05	-.037
REL_PER	-.036	.047	315975	-.78	.4382	-.13	.06	-.043
SELF	.327	.092	416180	3.55	.0004	.15	.51	.209
SPIR	.015	.051	23899	.30	.7675	-.08	.11	.016

Note: Multilevel structure is taken into account.

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Table 11. Multiple regression: Coping

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	.853	.310	5918	2.76	.0059	.25	1.46	0
GENDER	-.052	.058	494612	-0.86	.3903	-.17	.06	-.039
AGE	-.003	.013	2324	-0.27	.7882	-.03	.02	-.014
CLASS	.031	.030	726	1.02	.3066	-.03	.09	.053
MO_ED	.001	.032	16697	0.03	.9747	-.06	.06	.001
FA_ED	-.030	.030	849	-1.01	.3111	-.09	.03	-.050
INCOME	.002	.020	96	0.11	.9142	-.04	.04	.005
SAT	.005	.030	213545	0.17	.8617	-.05	.06	.009
PIL	.226	.053	35468	4.22	<.0000	.12	.33	.262
REL_SOC	-.003	.035	879	-0.09	.9316	-.07	.07	-.004
REL_PER	.024	.039	259	0.60	.5477	-.05	.10	.033
SELF	.453	.072	152882	6.27	<.0000	.31	.59	.343
SPIR	.017	.040	15300	0.42	.6766	-.06	.10	.020

Note: Multilevel structure is taken into account.

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Table 12. Multiple regression: Stress

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	2.733	.419	308	6.53	<.0000	1.91	3.55	0
GENDER	.185	.077	2585	2.41	.0160	.03	.34	.121
AGE	.024	.017	131	1.37	.1722	-.01	.06	.082
CLASS	-.017	.039	354	-.043	.6702	-.09	.06	-.024
MO_ED	.063	.043	603	1.46	.1450	-.02	.15	.077
FA_ED	-.009	.039	376	-.023	.8152	-.09	.07	-.013
INCOME	-.020	.026	84	-.077	.4463	-.07	.03	-.042
SAT	-.041	.039	8746	-1.05	.2928	-.12	.04	-.064
PIL	-.085	.069	81364	-1.23	.2196	-.22	.05	-.092
REL_SOC	-.043	.044	2606	-.097	.3328	-.13	.04	-.050
REL_PER	.092	.049	1393	1.88	.0601	.00	.19	.108
SELF	-.539	.094	14836	-5.76	<.0000	-.72	-.35	-.341
SPIR	.044	.052	11984	0.84	.4028	-.06	.15	.044

Note: Multilevel structure is taken into account.

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Table 13. Multiple regression: Family communication

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	-2.211	.473	373489	-4.67	.0000	-3.14	-1.28	0
GENDER	.325	.091	68413	3.59	.0003	.15	.50	.176
AGE	.073	.019	185782	3.83	.0001	.04	.11	.206
CLASS	-.086	.045	8904	-1.90	.0570	-.17	.00	-.103
MO_ED	.032	.051	835	0.63	.5262	-.07	.13	.033
FA_ED	.010	.050	99	0.20	.8434	-.09	.11	.011
INCOME	.041	.030	165	1.36	.1748	-.02	.10	.071
SAT	.002	.048	2357	0.03	.9739	-.09	.10	.002
PIL	.146	.083	15089	1.76	.0783	-.02	.31	.117
REL_SOC	.015	.053	2429	0.29	.7733	-.09	.12	.014
REL_PER	.129	.057	302633	2.27	.0235	.02	.24	.125
SELF	.383	.112	5934	3.39	.0007	.16	.60	.200
SPIR	.094	.062	36764	1.52	.1289	-.03	.22	.078

Note: Multilevel structure is taken into account.

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Table 14. Multiple regression: Family conflict

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	2.844	.342	2533	8.31	< .0000	2.17	3.51	0
GENDER	-.035	.064	51333	-0.54	.5907	-.16	.09	-.027
AGE	-.022	.014	1096	-1.60	.1089	-.05	.01	-.093
CLASS	.024	.032	1973	0.74	.4609	-.04	.09	.042
MO_ED	-.062	.038	231	-1.65	.1005	-.14	.01	-.094
FA_ED	.080	.033	331	2.38	.0177	.02	.14	.136
INCOME	-.026	.021	194	-1.21	.2292	-.07	.02	-.066
SAT	-.032	.034	6773	-0.95	.3410	-.10	.03	-.061
PIL	-.109	.060	2082	-1.83	.0679	-.23	.01	-.129
REL_SOC	-.014	.037	88151	-0.39	.6970	-.09	.06	-.020
REL_PER	.043	.041	9111	1.06	.2899	-.04	.12	.062
SELF	-.275	.080	22422	-3.45	.0006	-.43	-.12	-.215
SPIR	.016	.044	15291	0.37	.7093	-.07	.10	.020

Note: Multilevel structure is taken into account.

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Table 15. Multiple regression: Family affect

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	1.413	.330	515	4.28	<.0000	.77	2.06	0
GENDER	.070	.062	1959	1.13	.2575	-.05	.19	.054
AGE	.006	.015	48	0.38	.7062	-.02	.04	.023
CLASS	-.037	.035	56	-1.08	.2863	-.11	.03	-.064
MO_ED	.015	.037	80	0.40	.6882	-.06	.09	.022
FA_ED	.011	.032	147	0.34	.7316	-.05	.07	.019
INCOME	.003	.012	350	0.14	.8861	-.02	.03	.007
SAT	.051	.032	1751	1.62	.1064	-.01	.11	.096
PIL	.243	.057	1119	4.29	<.0000	.13	.35	.280
REL_SOC	-.098	.035	10180	-2.81	.0050	-.17	-.03	-.135
REL_PER	.090	.038	11575	2.34	.0191	.02	.16	.126
SELF	.275	.078	467	3.52	.0005	.12	.43	.207
SPIR	-.050	.041	1692898	-1.23	.2202	-.13	.03	-.061

Note: Multilevel structure is taken into account.

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Table 16. Multiple regression: Social responsibility

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	1.183	.249	437	4.75	< .0000	.69	1.67	0
GENDER	.103	.046	43730	2.27	.0234	.01	.19	.105
AGE	.001	.010	278	0.09	.9248	-.02	.02	.005
CLASS	-.039	.023	4623	-1.73	.0839	-.08	.01	-.088
MO_ED	.030	.025	229773	1.21	.2270	-.02	.08	.058
FA_ED	-.037	.022	140056	-1.65	.0982	-.08	.01	-.080
INCOME	.014	.014	35376	1.01	.3149	-.01	.04	.046
SAT	-.014	.024	93732	-0.61	.5412	-.06	.03	-.035
PIL	.211	.041	124999	5.11	< .0000	.13	.29	.318
REL_SOC	-.008	.026	6305	-0.30	.7670	-.06	.04	-.014
REL_PER	.032	.029	5160	1.12	.2629	-.02	.09	.059
SELF	.187	.057	3047	3.29	.0010	.08	.30	.184
SPIR	.097	.032	2446	3.07	.0022	.03	.16	.153

Note: Multilevel structure is taken into account.

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Table 17. Multiple regression: Common ailments and sicknesses

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	16.766	3.479	15154	4.82	< .0000	9.95	23.58	0
GENDER	2.921	.677	1576	4.32	< .0000	1.59	4.25	.105
AGE	.162	.140	5205	1.15	.2490	-.11	.44	.005
CLASS	-.385	.331	3002	-1.16	.2452	-1.03	.26	-.088
MO_ED	.504	.377	585	1.34	.1813	-.23	1.24	.058
FA_ED	.155	.340	547	0.46	.6482	-.51	.82	-.080
INCOME	.113	.228	89	0.50	.6194	-.33	.56	.046
SAT	-.572	.351	1526	-1.63	.1029	-1.26	.12	-.035
PIL	.807	.616	1602	1.31	.1904	-.40	2.01	.318
REL_SOC	-.410	.392	1081	-1.05	.2955	-1.18	.36	-.014
REL_PER	.195	.422	4422	0.46	.6438	-.63	1.02	.059
SELF	-2.352	.828	3478	-2.84	.0045	-3.97	-.73	.184
SPIR	.204	.461	2320	0.44	.6577	-.70	1.11	.153

Note: Multilevel structure is taken into account.

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Table 18. Multiple regression: Attitudes towards lesbians and gay men

Variable	b	SE	df	t	p	95% CFI		β
						lower	upper	
Intercept	1.014	.500	2609	2.03	.0428	.03	1.99	0
GENDER	.574	.094	193432	6.11	<.0000	.39	.76	.314
AGE	.028	.020	2208	1.39	.1640	-.01	.07	.080
CLASS	.016	.049	476	0.33	.7432	-.08	.11	.019
MO_ED	.049	.053	1582	0.93	.3521	-.05	.15	.051
FA_ED	.012	.047	1978	0.26	.7941	-.08	.10	.014
INCOME	.003	.029	5104	0.11	.9129	-.05	.06	.005
SAT	-.042	.049	37591	-0.85	.3939	-.14	.05	-.054
PIL	.116	.085	4875539	1.36	.1724	-.05	.28	.094
REL_SOC	-.082	.054	18627	-1.50	.1324	-.19	.02	-.079
REL_PER	-.099	.060	3803	-1.64	.1004	-.22	.02	-.097
SELF	.166	.116	107281	1.43	.1523	-.06	.39	.088
SPIR	-.061	.065	5915	-0.93	.3508	-.19	.07	-.051

Note: Multilevel structure is taken into account.

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