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**A SOCIAL PSYCHOLOGICAL ANALYSIS OF RELIGIOUS DOUBTS:
INTEGRATIVE COMPLEXITY AND ATTRIBUTION BIASES**

By

Barbara Dallas McKenzie

(Bachelor of Arts, Honours, Wilfrid Laurier University, 1987)

THESIS

Submitted to the Department of Psychology

in partial fulfilment of the requirements

for the Master of Arts Degree

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1990

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The end has arrived! The task is completed! I wish to express my gratitude to a number of individuals (many unmentioned). Without their support and assistance, I could never have accomplished my goal. While I had expected to grow academically, my growth has also had extensive personal implications. Personally, doubts are a part of my faith. My academic endeavour has enabled me to accept my doubts, allowing my faith to grow and flourish.

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TABLE OF CONTENTS

Introduction	1
Review of the Literature	4
Religious Doubt	4
Religious Doubts: Necessary or Antithetical to Faith? . .	4
Two Recent Studies of Religious Doubt	7
Types of Religious Doubt	7
Authoritarianism, Religion and Religious Doubt . .	11
Theoretical Perspectives	14
Integrative Complexity	14
Religion and Integrative Complexity	16
Religious Doubts and Integrative Complexity . . .	21
Attribution Theory	23
Situational and Dispositional Attributions	24
Biases Affecting Attributions	24
Attribution Theory and Religion	25
The Biasing Effects of Authoritarianism and Orthodoxy	27
The Actor-Observer Bias and Religion	28
Religious Doubt and Attribution	30
Study 1: An Interview Investigation of Religious Doubts	34
Hypotheses	36
Attribution Biases for Religious Doubts	36
Integrative Complexity and Religious Doubt	37
Frequencies of Religious Doubts	37
Further expectations	38
Method	39
Participants	39
Materials	39
Procedure	40
Results	41

Treatment of the Data	41
The CO Scale and High, Medium and Low Orthodoxy Groups	41
The Preliminary Religious Doubt Scale	41
Attributional Scoring	42
Scoring for Integrative Complexity	42
Attributional Analyses	43
Integrative Complexity Analysis	48
Frequency of Religious Doubts	50
Further Expectations	50
Discussion	56
Hypothesis 1	56
Hypothesis 2	60
Hypothesis 3	63
Hypothesis 4	67
 Study 2: A Questionnaire Study of Religious Doubts	 73
Hypotheses	74
Religious Doubts and Integrative Complexity	74
Religious Doubts and Complexity for Topic Domain	74
Further Expectations	75
Method	76
Participants	76
Materials	76
Procedure	77
Results	78
The RD Scale and High, Medium and Low Doubt Groups	78
The RWA Scale and the CO Scale	78
Scoring for Integrative Complexity	80
Hypothesis Analysis	81
Further Analyses	85
Discussion	90

General Discussion	100
Summary	106
References	109
Appendix A: Allport's (1950) Varieties of Religious Doubts	115
Appendix B: Vignette Items Used by McKenzie & Hunsberger	117
Appendix C: Responses to Doubt Vignettes	120
Appendix D: Fall 1987 Screening Questionnaire	123
Appendix E: Spring 1988 Interview Schedule	134
Appendix F: Supplementary Analyses and Tables (Study 1)	150
Appendix G: Fall 1988 Questionnaire	156
Appendix H: Religious Doubt Scale, Analyses and Tables (Study 2)	172
Appendix I: Orthodoxy, Analyses and Tables (Study 2)	176
Appendix J: Authoritarianism, Analyses and Tables (Study 2)	180

LIST OF FIGURES

Figure 1: Causal Attributions for an Unexpected Death	31
Figure 2: Mean Complexity Scores Based on Thinking About Religious Doubts for Christian Orthodoxy Groups	51
Figure 3: Mean Complexity Scores for Thinking About (A) Doubts and their Resolution (B) Causes of Personal Doubts (C) People Doubting in General and (D) Overall Complexity Average for Religious Doubt Groups	53
Figure 4: Mean Complexity Scores by Topic and Religious Doubt Groups	82
Figure 5: Mean Complexity Scores by Topic and Christian Orthodoxy Groups	84
Figure 6: Mean Complexity Scores for Religious and Nonreligious Paragraph Topics over Time (1987 to 1988)	94

LIST OF TABLES

Table 1: Interrater Reliability Scores for Raters Scoring Complexity 43

**Table 2: Situational and Dispositional Responses to Religious Doubts
for Self and Others 44**

**Table 3: Situational and Dispositional Responses to Religious Doubts
for High and Low Orthodoxy Groups 45**

**Table 4: Responses (Yes, No, Maybe) to Whether Highly Religious
People Secretly Have Doubts by CO Groups 47**

**Table 5: Responses (Yes, No, Not Sure) to Whether Nonreligious
People Secretly Need Religion by CO Groups 47**

**Table 6: Correlations Between Complexity and Religious Doubt,
Christian Orthodoxy and Right Wing Authoritarianism, for
Thinking About Religious Doubts 49**

**Table 7: Interrater Reliability Scores for Religious and Nonreligious
Essay Completions 81**

ABSTRACT

This research explored religious doubts in two separate investigations, the first an interview study and the second a questionnaire-based survey. In the interview study, 80 persons of varied religious orientations (28 high, 25 middle and 27 low orthodoxy participants) as measured by Fullerton and Hunsberger's (1982) Christian Orthodoxy Scale, were selected from a sample of approximately 700 introductory psychology students. Respondents were asked about religious doubts they had experienced, the perceived causes of these doubts as well as their resolutions. Responses were coded for complexity of thinking to assess thought patterns related to these doubts. Complexity of thinking about religious doubts was related to experiencing religious doubts for three of four complexity measures with those experiencing more doubts being more complex in their thinking about religious doubts. Attribution biases for perceived causes of these doubts for self and others were also examined. Attributions were predominantly situational with participants making significantly more situational attributions for others' doubts than for their own. This suggested attributions for others' doubts are not prone to an actor-observer bias. Additionally, highly orthodox individuals tended to believe others were more like them than they actually were, suggesting support for a self-based false consensus effect. The second (questionnaire) study compared integrative complexity scores for religious and nonreligious content areas for 276 introductory psychology students who reported differing levels of religious doubts. Religious doubts were not correlated with thinking about a nonreligious issue and only

weakly correlated with a religious issue. This was consistent with the speculation that complexity of thinking is domain-specific. Religious doubt is moderately related to religious doubts for the religious doubt domain, weakly related for more traditional religious content, and not related for capital punishment (nonreligious domain).

INTRODUCTION

Why do people doubt religious teachings? Indeed, what kinds of doubts are most common, what instigates and alters these doubts, and how do they affect the doubters' lives? Psychologists have been interested in religious beliefs and behaviours since the formative years of the discipline of psychology (e.g., James, 1902). However, in spite of general agreement that religion plays an important role in human lives, psychologists have devoted little attention to religious doubts, the focus of this study.

The lack of related theory and empirical work is perplexing, especially in view of developments in social psychology which would seem to provide useful vehicles for the study and understanding of religious doubt. The present study utilizes an attribution theory framework (Heider, 1958; Kelley, 1967) to investigate perceived causes of religious doubts. In addition, ways of thinking about religious doubts are analyzed from the perspective of integrative complexity (Schroder, Driver & Streufert, 1967; Suedfeld & Tetlock, 1977). Both the attribution and integrative complexity literatures within social psychology are quite well-developed, and thus provide an excellent starting point for an examination of religious doubt.

It would be unfair to imply that psychologists have entirely ignored religious doubts. Some authors have offered preliminary analyses of such doubts (Allport, 1950; Clark, 1958; Starbuck, 1899) or the related topic of "religious skepticism" (Batson & Ventis, 1982). However, typically their contributions have been speculative and theoretical rather than empirical. Nor have these authors defined "religious doubt," apparently assuming that

this is "self-obvious." For the purposes of this paper, religious doubt will be viewed as a feeling of uncertainty toward, or questioning of, religious teachings.

Of course, for religious doubts to exist, the individual must generally be aware of (but not necessarily subscribe to) specific religious beliefs. For example, one's awareness of Darwin's theory of evolution has no relevance to the Biblical account of creation unless one is also familiar with the Biblical story. Similarly, if a conflict exists between the two accounts it can potentially be a source of doubt **only** for those individuals who are aware of inconsistencies or friction between the two positions.

That belief and doubt may coexist in an uneasy relationship was noted by Allport (1950), when he suggested that doubt was a collision between belief and experience. Others have made similar suggestions (Clark, 1958; Pratt, 1920; Starbuck, 1899). Pratt (1920), for example, pointed out that doubt "presupposes at least two rival claimants for belief both of which cannot be accepted as true" (p. 99). He suggested: (a) personal experience could disagree with theology's authority; and (b) morality and justice could oppose religious teachings. The theologian Paul Tillich (1957) has taken this one step further in suggesting that religious faith can be construed as necessarily leading to doubt, depending on one's conceptualization of faith:

If faith is understood as belief that something is true, doubt is incompatible with the act of faith. If faith is understood as being ultimately concerned, doubt is a necessary element in it. It is a consequence of the risk of faith. (p. 18)

Whether or not Tillich is right, there is ample evidence that doubts concerning religious teachings are common, and religious leaders have

expressed concern about such doubts (Bibby, 1987; Prus, 1976). Many a pulpit has resounded with admonitions to dispel doubts and to believe religious teachings without question.

The present project involved two separate investigations of religious doubt, an interview study and a questionnaire-based survey. In the first, participants of varying religious orientations were asked about the religious doubts they had experienced, the resolution of these doubts, and what they perceived to be the causes of these doubts. These responses were easily coded for complexity of thinking, allowing for social cognitive analysis of respondents' thought processes related to their doubts. An examination of attribution biases for perceived causes of religious doubts for self and others was also undertaken. The second (questionnaire) study involved a comparison of integrative complexity scores for religious and nonreligious content areas by respondents reportedly experiencing differing levels of religious doubt.

REVIEW OF THE LITERATURE

The review of the literature is grouped into two major sections, the first being an examination of work on religious doubts. In particular, two recent studies of religious doubt are reviewed, one of which utilized Allport's (1950) typology of religious doubts while the other examined relationships among religious doubts, religious orthodoxy and authoritarianism. The second section reviews social psychological concepts relevant to the present study (attribution theory and integrative complexity) and the manner in which these concepts will be used to study religious doubts.

Religious Doubt

Religious Doubts: Necessary or Antithetical to Faith?

Although a number of "psychology of religion" books have appeared recently (e.g., Batson & Ventis, 1982; Brown, 1985; Brown, 1987; Byrnes, 1984; Meadow & Kahoe, 1984; Paloutzian, 1983; Spilka, Hood & Gorsuch, 1985) which collectively referenced thousands of research projects, articles and books, an examination of these sources reveals few works which deal with the issue of religious doubt. A few writers (Abelson, 1959; Allport, 1950; Altemeyer, 1988; Baird, 1980; Starbuck, 1899) have discussed the concept of religious doubt and others (Brinkerhoff & Burke, 1980; Prus, 1976) have at least suggested its relevance for the social scientific study of

religion. However, the interest in religious doubt has tended to focus on issues such as the categorization of doubts (e.g., Allport, 1950 - see Appendix A) without any attempt to assess the resulting typology empirically. In addition, doubt has been mentioned in relation to conversion (e.g., Argyle & Beit-Hallahmi, 1975; Balch, 1980) or preconversion (Leuba, 1912; Gillespie, 1979), but rarely in relation to religious beliefs (Allport, 1950). Starbuck (1899) studied participants' responses to open-ended questions and found doubt was most likely to **follow** conversion, occurring in late adolescence.

By contrast, it has been suggested that religious doubt serves as an antecedent of apostasy.¹ Hunsberger (1983) found that apostates doubted and reacted against religious beliefs they had been taught, more than nonapostates. Balch (1980) and Wright (1984) both emphasized the importance of doubt in disengagement from religious cults. One might wonder whether, at least in some cases, doubt represents a disconfirmation of faith.

Starbuck (1899) pointed out that clergy and laypersons viewed doubt as closely allied with sin ("to doubt is to sin"), so confessions of doubt were often not verbalized. In a similar vein, Clark (1958) stated:

People differ in their estimate of the value of doubt. The official church attitude is that it is to be deplored as an obstacle to faith, at the worst a temptation of the Devil, at the best a sign of weakness. (p. 138)

Starbuck suggested that the church's position in this regard might be inappropriate since "doubts are a part of a development which is natural and normal if the personality is to attain its highest possibilities" (Starbuck,

¹ An apostate is an individual raised in a religious denomination who has changed her/his religious orientation to "none" (Hunsberger, 1983, p. 21).

1899, p. 242).

More recently, Allport (1950) suggested that religious doubt represented a collision between belief and experience. Analogous to Starbuck's theme that doubt was a normal part of development, Allport proposed that the development of "mature sentiment" was dependent upon "successive doubts and affirmations" (Allport, 1950, p. 102). For belief to grow and thrive, it had to be challenged by doubt (Allport, 1950; Clark, 1958). Similarly, the theologian Tillich (1957) argued that doubt is part of the very structure of faith:

If doubt appears, it should not be considered as the negation of faith, but as an element which was always and will always be present in the act of faith... serious doubt is confirmation of faith. It indicates the seriousness of concern, its unconditional character. (Tillich, 1957, p. 22)

Allport (1950), Clark (1958) and Tillich (1957) apparently agree that doubt is an important aspect of belief continuing after adolescence. However, little empirical research has been conducted to test their postulations.

Thus, there is some disagreement in the literature concerning the relationship between doubt and faith. Some authors view doubt as antithetical to faith (Balch, 1980; Hunsberger, 1983; Wright, 1984), but others view it as a necessary part of faith (Allport, 1950; Clark, 1958; Starbuck, 1899; and Tillich, 1957). If doubts are indeed a necessary part of faith, then highly religious people should have doubts. It is possible, however, that "official" positions viewing "doubt as sin" prevent people from expressing doubts. McKenzie and Hunsberger (1988) found that highly orthodox individuals reported very low levels of doubt. It should be noted, however, that their study focused on **current** doubts. If individuals had experienced doubts earlier in their lives, they would not have been revealed

in their study.

If the existence of doubts is important to faith, this does not mean highly religious people cannot find resolutions for such doubts. That is, religious people may periodically have doubts, and resolve these doubts, but at any given moment would not have many "current" doubts. Hood and Morris (1985) suggested that orthodoxy might be an "end-point" in the process of coming to conclusions about a faith position, while doubts might be an intermediate stage. The present study will address this issue by asking about current as well as previously experienced doubts.

In summary, there have been few attempts to psychologically analyze religious doubts and there has apparently been virtually no social psychological or other empirical research done in this area. However, there are some important issues to be resolved. Do highly orthodox people experience more or less doubt than their less orthodox cohorts? How do people think about these doubts and how do they resolve them? Two recent studies speak to these questions.

Two Recent Studies of Religious Doubt

Types of Religious Doubt

A study by McKenzie and Hunsberger (1988) provided an important stepping stone for the present project. Their investigation utilized vignettes developed to represent Allport's (1950) seven types of doubt, as well as "ritual doubt" as suggested by Clark (1958). These vignettes (see Appendix B) were modelled after items used by Prus (1976) in an examination of how clergy dealt with religious doubts.

For example, Allport's **referential doubt** was represented in the following vignette: *"Some people question the basis of religious beliefs, considering them to be man's creation to explain how we came to be, rather than the divine inspiration of God as the Bible would have us believe. To believe in God is thus really just a way of deceiving ourselves."* As for all vignettes, respondents were asked to rate the amount of doubt aroused by this issue for them personally, on an 11-point response format ranging from 0 ("none at all") to 10 ("a great deal").

Participants in this study were classified as high, medium and low orthodox based on their scores on the Christian Orthodoxy (CO) scale² (Fullerton & Hunsberger, 1982).

McKenzie and Hunsberger (1988) found that low orthodoxy respondents consistently reported significantly greater doubt across the vignettes than did the high orthodoxy participants. Those in the middle orthodoxy group were intermediate in their reported doubts (but tended to more closely resemble the low rather than the high orthodoxy group). Similarly apostates were significantly more likely to report doubts than nonapostates, and less doubt was also associated with higher reported frequency of church attendance, greater agreement with religious teachings, and more reported family emphasis on religion during childhood.

At face value it would thus seem that high orthodox individuals have fewer doubts than low orthodox persons. Thus, although some authors

² This scale is a balanced 24-item measure having strong psychometric properties (with a mean inter-item correlation ranging from .57 to .70 and Cronbach's alpha .97 or above in different samples). CO scores can potentially range from 24 to 168 with the +3 to -3 format used (converted to a 1 to 7 format for analysis). It is intended to assess the degree of acceptance of core Christian beliefs and is based primarily on the Nicene Creed.

(Allport, 1961; Clark, 1958; Starbuck, 1899) have claimed that doubt was an important aspect of mature or healthy faith, these results indicated that the highly orthodox were much less likely than low orthodox individuals to report doubts. This was not simply a relative difference - highly orthodox people reported very low absolute levels of doubt in this study. On the other hand, low orthodox participants and apostates consistently reported moderate levels of doubt, supporting previous suggestions that doubt may be associated with disengagement from religion (Balch, 1980; Hunsberger, 1983; Wright, 1984) rather than being part of "healthy faith."

McKenzie and Hunsberger (1988) speculated that many highly orthodox persons may have previously experienced religious doubts, but they would also (in their own minds) have adequately resolved these doubts. Thus, when asked how much doubt various issues (currently) cause them, they honestly respond "little or no doubt."

However, it is also possible that highly orthodox people do have frequent and/or intense religious doubts, but they refuse to either privately or publicly acknowledge these doubts. They may fear that admission of doubts will reflect negatively on their religiosity (Clark, 1958; Starbuck, 1899). This possible nonadmission of existing doubts is supported by Altemeyer's (1988) finding that about one-third of his authoritarian participants reported "secret" doubts about God which they claimed had never been revealed to anyone before. These doubts were elicited within a metaphorical "hidden observer" framework.³

³ Hilgard (1977) proposed that a dissociated consciousness occurred during hypnosis. Two conscious thoughts or processes were carried out with apparently limited awareness of the other activity. The second self has been called "the hidden observer." Although his approach differed somewhat, Altemeyer used this

The above possibilities may not be easy to assess. However, it would seem quite straightforward to at least ask highly orthodox participants to report **past** as well as current doubts, to see if this simple explanation could account for McKenzie and Hunsberger's findings of less doubt among highly orthodox persons.

Open-ended comments about religious doubt indicated that the vignettes used in the study were often interpreted differently by high and low orthodox respondents, suggesting that high and low orthodox people may interpret potential doubt-engendering situations differently. For example, vignette 7 (McKenzie & Hunsberger, 1988) points out that many atrocities have been committed in the name of Christ. Although this item apparently provoked reports of relatively high doubt, highly orthodox people were likely to attribute such atrocities to errors on the part of humanity rather than the result of Christianity. For example:

Religious belief is not the problem, but rather misguided people using religion as an excuse. (female, age 36, high CO)

This is a prime example of man warping and bending God's doctrine to fit his own purpose. Many verses may be taken out of context to explain one's own actions. (male, age 21, high CO)

Man corrupts the philosophy by negative actions and interpretations. War itself goes against Christian philosophy. Just because they are done in God's name doesn't mean God is present. (male, age 21, high CO)

On the other hand, low CO participants were more likely to suggest that such atrocities were indeed a result of Christianity, apparently causing them considerable "doubt":

as the basis for his technique which asked participants to reveal doubts which had been observed by a so-called hidden observer.

I have always thought Christianity was too political. For example, the Anglican Church was created for political reasons. (female, age 28, low CO)

If I was a religious person, that would be difficult to rationalize. (male, age 25, low CO)

No religion makes any person better than anyone else. I doubt Christianity every time I meet a religious person hypocritically practicing his faith - this occurs often and certainly upsets me. (male, age 22, low CO)

These differing interpretations by low and high orthodox could lead to greater doubt for low orthodox and less doubt for high orthodox persons respectively. One wonders whether these cognitive processes serve to help confirm previously held beliefs. As noted by Altemeyer (1988) the religious authoritarian "appears to have been inoculated against catching the truth" (p. 226) and is able to resist a great deal of disconfirming information. Additionally, much research by Snyder and his colleagues has examined the tendency of individuals to confirm hypotheses they hold about others. That is, they tend to ask questions which support rather than refute the beliefs they have about others (Snyder & Swann, 1978) or recall information which supports their beliefs (Snyder & Cantor, 1979). Such confirming behaviours may well enhance one's belief that one's position is "correct." As outlined later in this paper, this issue might well be related to both integrative complexity of thinking and causal attributions. However, before turning to these possibilities, a second recent investigation of religious doubt will be discussed.

Authoritarianism, Religion and Religious Doubt

In a recent book on authoritarianism, Altemeyer (1988) devotes a chapter to the relationship between authoritarianism and religion. In this

chapter, he presents a 10-item religious doubt scale which he tested with a group of undergraduate students and their parents. The inter-item correlation for the students was .32 and for the parents .39, while the respective Cronbach's alphas were .84 and .86. Thus the doubt scale would seem to have reasonable internal consistency. This scale will be used in the present research to further examine how experiencing religious doubts affects ways of thinking about religious and nonreligious issues as assessed by integrative complexity.

Altemeyer found his religious doubt scale was negatively correlated with religious orthodoxy as measured by the CO scale ($r = -.64$) as well as with authoritarianism as measured by the Right Wing Authoritarianism (RWA) scale⁴ ($r = -.41$) in a sample of over 450 students. Similar correlations were found with almost 500 parents ($r = -.60$ with CO; $r = -.35$ with RWA). McKenzie and Hunsberger (1988) found a similar negative correlation between Christian Orthodoxy and total scores on their religious doubt vignettes ($r = -.66$, $p < .01$) in their sample of 99 students. It is important to emphasize that, although orthodoxy and doubt are strongly negatively related, they appear to measure somewhat different aspects of one's religious orientation. Orthodoxy is a measure of acceptance of core Christian beliefs, while the religious doubt scale assesses a feeling of uncertainty towards, or a questioning of, religious teachings. This will be further examined in the present study. Such uncertainty or questioning may indeed reflect greater openness or flexibility about religious teachings (Altemeyer, 1988), and as such, doubt might reflect higher complexity of

⁴ The Right Wing Authoritarianism scale is a balanced 30-item measure developed by Altemeyer (1981) to measure authoritarianism.

thinking. Openness and flexibility are antithetical to authoritarianism and thus one would also expect that high authoritarians should not demonstrate high complexity of thinking about religious doubts.

Theoretical Perspectives

Two theoretical perspectives are important to the present study: integrative complexity and attribution theory. Integrative complexity will be presented first, as well as an overview of related research on religion. This will be followed by a discussion of the ways in which integrative complexity is believed to be related to religious doubts. Aspects of attribution theory relevant to the present paper are then presented, followed by an overview of attribution theory's application to psychology of religion. Finally, a discussion of how attribution theory will be used to examine people's explanations of the causes of religious doubts is presented.

Integrative Complexity

It has long been assumed that individuals actively process vast amounts of information in an effort to organize, simplify and make sense of their world, when dealing with people, and experiencing issues or events (Schroder, 1971; Fiske & Taylor, 1984). Information processing can be simple or complex and can be measured by assessing "integrative complexity", which has been found to vary with situational variables (Schroder, Driver & Streufert, 1967; Tetlock, 1983; Tetlock, 1981) as well as dispositional variables (Batson & Raynor-Prince, 1983; Schroder, Driver & Streufert, 1967).

When dealing with integrative complexity, two variables are usually considered: (a) **differentiation** "deals with the number of dimensions of a problem that are taken into account in evaluating or interpreting events" (Tetlock, 1985, p. 268); and (b) **integration** "refers to the development of

complex connections among differentiated characteristics" (p. 269). Integration thus has differentiation as a prerequisite. Items are scored on a 1-7 interval scale, with varying degrees of differentiation or distinctiveness measured by lower scores (i.e., 1 to 3) while higher scores on the scale reflect varying levels of integration of these differentiated parts. Emphasis is upon **how** a person thinks rather than **what** a person thinks; that is, the concern is not with the content 'tself, but rather how that content is organized.

According to Schroder et al. (1967), complexity is not domain specific (i.e., complexity was viewed as a personality trait reflecting a style of cognitive processing) but others have shown that it can vary across content areas (Lea, Hunsberger, Pancer & Pratt, 1988). Thus, Suedfeld et al., (1988) argued that "conceptual complexity is no longer viewed as a static trait, but rather as a product of interacting dispositional and situational tendencies" (p. 2) and has been renamed "integrative complexity".

Integrative complexity has been used to assess the level of reasoning sophistication in various domains, including politics (Suedfeld & Tetlock, 1977; Tetlock, 1985) and religion (Batson & Raynor-Prince, 1983; Hunsberger, Lea, McKenzie, Pratt & Pancer, 1988). Religious thinking is a domain which may elicit highly polarized and conflicting value issues in the individual's thinking (Hunsberger, 1980; Spilka, Hood & Corsuch, 1985) and has only recently been examined in the context of complexity (Batson & Raynor-Prince, 1983; Hunsberger, Lea, McKenzie, Pratt & Pancer, 1988; Lea, Hunsberger, Pratt & Pancer, 1988).

An example of religious thinking that is low in complexity (a score of 1) might be: "*People who believe in God will be saved*" (only one position

is presented; there is no differentiation). "Some people think believing in God leads to salvation and others think your good deeds will lead to salvation" would be given a score of three (displays differentiation). The statement: "Religious beliefs while alive, and one's good deeds helping other people combine to lead to salvation, which to my mind is eternal satisfaction and something we call heaven." would be scored a five (beliefs and deeds are differentiated and also integrated to produce a new product - salvation). A score of seven is extremely unusual and requires "the presence of an overarching principle or perspective" (Suedfeld et al., 1988, p. 53), discussing how the alternatives are related, not merely stating a connection exists. Scores of 2, 4 and 6 are intermediary points between the other scores (i.e., 1, 3, 5, 7), demonstrating some transition to the next level of complexity.

Religion and Integrative Complexity

Batson and Raynor-Prince (1983) studied participants who varied in religiosity and had them complete religiously-oriented sentence stems as well as some of Schroder, Driver and Streufert's (1967) Paragraph Completion Test (PCT) ("when I am in doubt...", "rules...", "when someone disagrees with me...", "when others criticize me, it usually means..." and "when I am confused..."). They found that measures of Quest⁵ and doctrinal orthodoxy (DO)⁶ were related to cognitive complexity. Their Religious Paragraph

⁵ Quest is defined by Batson (1976) as a religious orientation which involves a striving to understand religious and existential issues. It has been criticized (Hood & Morris, 1985) as an aspect of one's religiosity because it negatively values doctrinal orthodoxy.

⁶ The doctrinal orthodoxy scale (Batson & Ventis, 1982) consists of 12 items based on American Protestant belief statements all beginning with the proreligious statement, "I believe". The scale is scored on a +3 to -3 format.

Completion Task (RPCT) (Batson, 1971; Batson & Raynor-Prince, 1983), developed primarily to tap existential concerns, was modelled after Schroder, Driver and Streufert's (1967) Paragraph Completion Test (PCT). These existential stems were: "*when I consider my own death...*", "*when someone challenges my beliefs about God...*", "*when I am trying to decide whether to do something that may be morally wrong...*", and "*when questions about my purpose in life arise...*". Unfortunately, their small sample ($N = 35$) included only individuals who had expressed at least a moderate interest in religion. Nonreligious or weakly religious individuals would have provided a valuable comparison point. The paragraphs were evaluated for integrative complexity by independent raters using criteria to assess differentiation and integration based on Schroder et al. (1967).

The positive correlation between the Quest orientation and cognitive complexity ($r = .43$, $p < .01$) should not be surprising since both measures tap a process dimension and request related information. For example, an item in the Interactional scale used to measure the Quest orientation (Batson & Ventis, 1982, p. 153) is "*God wasn't very important to me until I began to ask questions about the meaning of my own life.*" A sentence stem in the RPCT is "*When questions about the purpose of my life arise...*" (Batson & Raynor-Prince, 1983, p. 43). Both scores apparently increase with openness to, and acceptance of, different perspectives. On the other hand, orthodoxy is a measure of content and thus the negative relationship found between doctrinal orthodoxy and integrative complexity ($r = -.37$, $p < .05$) is especially interesting, since orthodoxy should be unrelated to the measurement of complexity, a measure of process. It is possible that the negative relationship between orthodoxy and complexity is due to highly

orthodox individuals holding strongly to their doctrinal beliefs and not considering alternatives to the "accepted religious position" when discussing religious issues.

There are questions about the validity and reliability of the orthodoxy measure used by Batson and Raynor-Prince. The authors admit it is based on American Protestant belief statements, and thus, its applicability to Catholicism is questionable. However, Catholics constituted 40% of their sample. The orthodoxy scale used by Batson and Raynor-Prince (1983) could also be prone to demand characteristics, since all items are worded in one (proreligious) direction, making them susceptible to an acquiescence response set. Previous research has shown that "the more religious an individual is, the greater the probability he will be acquiescent in his responses" (Fisher, 1964, p. 784).

The relationship between orthodoxy and complexity was further examined (Hunsberger, Lea, McKenzie, Pratt & Pancer, 1988; Lea, Hunsberger, Pratt & Pancer, 1988) using the Christian Orthodoxy (CO) scale (Fullerton & Hunsberger, 1982). Traditional and existential religious issues were analyzed separately, since they were different topic domains. The relationship between Quest and RPCT (Batson & Raynor-Prince, 1983) was assumed to have been due to the existential items included in the RPCT. The relationship between orthodoxy and complexity was assessed in the two studies. The first examined the effects of religious salience (Hunsberger et al., 1988), while an explicit request for complexity (called a "prod") was

examined in the second (Lea et al., 1988)⁷.

It is possible that integrative complexity is affected by strength of commitments to one's religious position rather than being related to orthodoxy per se. Hood and Morris (1985) pointed out that those with more orthodox commitments would be assessed as less complex on paragraph completion measures because they were committed to certain beliefs. This would occur regardless of the complexity of thinking which led to that commitment. This led Lea et al., (1988) to assess whether the religiously orthodox could reason in more complex ways under other circumstances (such as within nonreligious domains) or when "prodded" to think more complexly. Although religious individuals may believe they have the "only" answer, the same type of response could also occur for those who are nonreligious, that is those who have rejected a religious solution for its antithesis. This would suggest the possibility of a curvilinear relationship between orthodoxy and complexity, since weak to moderate religiousness would represent the least "committed" (i.e., least extreme) position, which might reveal the greatest degree of complexity.

Lea et al. (1988) found a moderately strong relationship between complexity and orthodoxy on existential (but not on traditional) religious issues, especially for those who reported being at least moderately religious, replicating Batson and Raynor-Prince (1983). Authoritarianism had the strongest and most consistent (negative) relationship with complexity. When integrative complexity and its components (differentiation and integration)

⁷ This research was part of a program of research conducted at Wilfrid Laurier University by the complexity research team under the supervision of Professors Hunsberger, Pancer and Pratt. Frequent reference will be made to data collected by this WLU complexity research team throughout the paper.

were briefly explained, followed by a request that participants maximize complexity. Complexity scores were significantly higher than those of a no instruction control group. Only high and low orthodoxy participants were included in this study. If there is a tendency for people with extreme attitudes on an issue to be more simple than those with moderate attitudes, as de Vries and Walker (1988) suggest, then a lack of relationship for traditional religious paragraph completion tasks might well have been due to the exclusion of the middle of the distribution.

Hunsberger et al. (1988) failed to find a correlation between orthodoxy and complexity as had Batson and Raynor-Prince (1983), but authoritarianism, as measured by RWA (Altemeyer, 1981) was negatively correlated with existential PCT's, while Quest was positively correlated with complexity for a religious sub-sample. Hunsberger et al. (1988) also examined the effects of salience⁸, and it was not found to have a significant effect on complexity. Their results suggested the importance of Batson and Raynor-Prince's selection criteria (i.e., apparently only those participants at least moderately interested in religion were included). Authoritarianism had more potential as a predictor of complexity than orthodoxy, even though authoritarianism and orthodoxy were themselves highly correlated. Hunsberger's (1988) failure to find a negative correlation between complexity and orthodoxy compared to Lea et al.'s (1988) finding of such a relationship might have been due to the paragraph stems which varied across the two studies or to their different samples (one study included introductory

⁸ Salience, in this study, was manipulated by order of presentation of the religious attitudes material. One group received the religious material prior to the sentence completion task (high salience) while the other first responded to the sentence completion task (low salience).

psychology students, the other business students). There is also some suggestion that the relationship between integrative complexity and one's own position on an issue may be nonlinear (de Vries & Walker, 1988). Hunsberger et al. (1988) suggested this might explain why significant correlations between complexity and orthodoxy were not found when only high and low orthodoxy individuals were included, but significant correlations were found for a restricted sample (i.e., those interested in religion). Alternatively, it is possible that interest in a topic is a prerequisite for complexity.

Religious Doubts and Integrative Complexity

Since knowledge of a religious belief as well as an awareness of an inconsistency with that belief are viewed as necessary prerequisites to religious doubts, it would seem that integrative complexity should be positively correlated with religious doubts. By definition, a person having religious doubts is aware of two conflicting points of view. This conflict should mean that those experiencing religious doubts are able to differentiate on an issue, and tend not to categorically dismiss either alternative. Since average complexity scores are typically less than 3 for undergraduate student samples, one would expect that those with strong doubts would, on average, have higher complexity scores than those with weak or nonexistent doubts. Merely presenting conflicting points of view would produce a score of three. One would expect that a measure of religious doubts would therefore be correlated with a measure of complexity of thinking on reported religious doubts.

If the above reasoning is correct, one might wonder whether such

differentiation occurs mainly for religious doubts or whether it generalizes to other issues. Religious doubts are within a religious domain. Thus it would seem likely that such doubts could lead to greater complexity for a variety of religious issues, since doubters could tend to see (i.e., differentiate) two sides of these issues. In part doubters are not expected to refute (i.e., reject) one position or the other. If such refutation occurred it would lead to lower complexity scores, since a second position was recognized but rejected out of hand. Those who score high on the orthodoxy scale are more likely to only consider one position and a defense of that position or a rejection of any other position, thus lowering their complexity scores. Issues which are not within the religious domain (e.g., capital punishment⁹) are not likely to reveal similar relationships, since the issues are not directly linked to religious doubts. One would expect that complexity for those experiencing religious doubts will be domain specific and will not generalize to other nonreligious domains.

Participants' responses to the religious doubt vignettes in McKenzie and Hunsberger's (1988) study of religious doubt were inspected. It appeared to this author that many highly orthodox subjects had decided how they viewed a potentially doubt-arousing issue and they were not about to be swayed by further information, nor would they consider possible alternatives. Consequently, they responded in a relatively simple fashion (examples of their responses, as well as those of middle and low orthodoxy participants, can be found in Appendix C). This subjective analysis suggested that high CO participants tended to think less complexly about

⁹ Capital punishment is considered to be a nonreligious topic, consistent with other research (e.g., Pancer, Lea, Pratt & Hunsberger, 1989).

religious doubt issues, but research support for a relationship between orthodoxy and integrative complexity has been inconclusive (Batson & Raynor-Prince, 1983; Hunsberger, Lea, MacKenzie, Pancer & Pratt, 1988; Lea, Hunsberger, Pancer & Pratt, 1988). Some of the inconsistent findings may well have been due to a lack of domain specificity in assessment, and therefore further research seems warranted. Thus, the present research investigates the relationship between religious doubts and integrative complexity as well as the orthodoxy - integrative complexity relationship.

Attribution Theory

People infer causal explanations for their own and others' behaviour in order to help them interpret what goes on in the world around them. It is believed that such causal explanations arise out of an individual's desire to predict the future and control her/his environment (Fiske & Taylor, 1984). These perceived causal explanations form the basis of what has become known as "attribution theory". Perceived causes can be attributed either to the person (dispositional or internal attribution), to the environment (situational or external attribution) or to a combination of the two (Heider, 1958).

Attribution theory has many facets. In fact it has been suggested that "attribution theory is not really a theory but rather a collection of knowledge that shares basic but minimal commonalities" (Fiske & Taylor, 1984, p. 90). For the purposes of the present study we will focus on specific pieces of this "collection of knowledge". In particular, dispositional and situational attributions and biases in their use (specifically, the actor-

observer bias) will provide the basis for predictions in this investigation.

Situational and Dispositional Attributions

Most attribution theorists would agree that attributions can be broadly categorized into two main groups: (a) internal (or **dispositional**) attributions which see the cause of an event as stemming from the person; and (b) external (or **situational**) attributions which ascribe the cause to factors outside the person. Examples of internal attributions are such things as effort and ability, while luck or task difficulty are external attributions (Weiner, 1985). These attributions form the focus for most attributional research, including that which examines attributional biases, such as the actor-observer bias (Jones & Nisbett, 1972).

Biases Affecting Attributions

One of the fundamental findings of attribution theorists has been that actors are more likely to attribute their behaviour to external (situational) causes, viewing it as situationally determined, while observers are more likely to attribute this same behaviour to internal (dispositional) causes which are relatively enduring (Jones & Nisbett, 1972). This is called the **actor-observer bias**. While the actor-observer effect has been extensively researched (Jones & Nisbett, 1972; Goldberg, 1981), the results have not been entirely clear-cut. The bias can be attenuated by positive and negative outcomes, with positive outcomes being more likely to be dispositionally attributed while negative outcomes are more likely to be situationally attributed no matter who committed the behaviour, that is, either self or other (Taylor & Koivumaki, 1976). Thus, for example, if religious doubts are

viewed more positively, they will be more likely to be dispositionally rather than situationally attributed.

The **self-based (false) consensus effect** (Fiske & Taylor, 1984, p. 82) postulates that individuals tend to believe they are thinking or acting in the same fashion as they believe others would in the same situation. That is, our behaviour is not perceived as atypical but rather it tends to be perceived as typical. Thus, people perceive their own choices, judgements and attributes as relatively common and are likely to exaggerate the typicality of their own position when interacting with others (Harvey, Wells & Alvarez, 1978; Ross, Greene & House, 1977). Additionally, it has been suggested (Fiske & Taylor, 1984) that the self-based false consensus effect would provide justification "for religious and political oppression" through forcing one's beliefs on others. Thus, the self-based false consensus effect "biases an individual's estimates of deviance and normalcy" (Ross, Greene & House, 1977, p. 295). Viewing one's own behaviour/attitudes as common and "normal", one tends to view others who differ as being in the minority and "deviant".

Attribution Theory and Religion

Some researchers (Proudfoot & Shaver, 1975; Spilka, Shaver & Kirkpatrick, 1985) have suggested that attribution theory is a valuable research perspective for explaining people's religiosity. Spilka, Hood and Gorsuch (1985) argued that a major problem in the area of psychology of religion was the lack of theoretical focus for unifying research. They suggested that attribution theory could provide that theoretical focus, serving

as a basis for future research and helping to unify the psychology of religion. Many of the relevant published articles are theoretical (e.g., Proudfoot & Shaver, 1975; Spilka, Shaver & Kirkpatrick, 1985), including numerous postulations and suggestions for applying attribution theory constructs to religion. Among the empirical research articles which applied attribution theory to religion were those by Gorsuch and Smith (1983), Hunsberger (1983), Lupfer, Hopkinson and Kelley (1988), Pargament and Hahn (1986), Ritzema (1979), Ritzema and Young (1983), and Spilka and Schmidt (1983). Proudfoot and Shaver (1975) proposed that "attribution theory is especially promising for the study of religion because it deals directly with individuals' interpretations of their known experiences and behavior" (p. 317). Religion deals directly with how one interprets the world, the universe and one's existence. Therefore it makes sense that religion and attribution theory would intertwine.

Much of the research has focused upon supernatural attributions (i.e., to God and Satan), primarily examining highly religious participants (Gorsuch & Smith, 1983; Hunsberger & Watson, 1986; Pargament & Hahn, 1986; Ritzema, 1979; Ritzema & Young, 1983; Spilka & Schmidt, 1983). Although numerous interesting relative differences emerge, the absolute levels of attribution to God and Satan are extremely low (Hunsberger & Watson, 1986), suggesting that the focus for examining the relationship between attribution and religion should be broadened to other areas. Thus, the present research will focus upon attributional biases rather than supernatural attributions.

The Biasing Effects of Authoritarianism and Orthodoxy

Lupfer, Hopkinson and Kelley (1988) recently examined how secular attributions differed for people of various religious orientations. They hypothesized that orthodox Christians, as measured by the CO scale, and high authoritarians as measured by the balanced F scale (Cherry & Byrne, 1976), would overestimate dispositional causes and underestimate situational causes (i.e., commit fundamental attribution errors) as well as commit more "normative" errors¹⁰ than would people low on these characteristics. While orthodoxy was not significantly related to attribution errors, authoritarianism was significantly positively correlated with such errors. It seemed that high authoritarians were less attentive to the information presented in the vignettes. Lupfer et al. indicated that "alleged rigidity of authoritarians' cognitive processes might have rendered them less sensitive to the nuances of attributional analysis" (p. 396).

While normative and fundamental attribution errors were not significantly different for high orthodox individuals compared to less orthodox individuals, it is possible that other factors might have masked any relationship. Lupfer et al. (1988) proposed that including more nonfundamentalists¹¹ might have revealed undetected differences. They also suggested that attributional differences might only materialize "when judging behaviors which engage their religious values" (p. 397). The researchers

¹⁰ Normative attribution errors refer to the failure to make attributions based on Kelley's (1967) covariation principle using available distinctiveness, consensus and consistency information.

¹¹ A negatively skewed distribution of CO scores with a median of 161 indicated that the entire sample was highly orthodox, thus reducing the likelihood of finding orthodoxy differences.

suggested that the inclusion of actions which violated or reflected fundamentalist values could affect secular attributions for the highly religious.¹² They included a religious salience manipulation but no results were reported in this regard. (One supposes that no significant results were obtained). However, religious affiliation was provided in the biographies of the vignette characters and this might have been sufficient to make religion salient for both groups.

Although orthodoxy and authoritarianism are highly correlated, it is of interest to note that the pattern of attribution errors differed for these two variables. It could well be that the "alleged rigidity" might have affected only authoritarians. The present study will not examine the same attribution errors (i.e., normative and fundamental attribution errors) as did Lupfer et al. (1988). Since attribution errors were found for authoritarians but not for the orthodox by Lupfer et al., it is expected that authoritarianism will be related to greater actor-observer biases. In addition, Harvey, Wells and Alvarez (1978) suggested that the false consensus effect provided reasons for religious and political oppression. Thus it would seem likely that high authoritarians would be more prone to such biases.

¹² Hunsberger and Watson (1986) included references to both religious and nonreligious behaviours and found these influenced attributions for the highly religious group. People made more God attributions for positive religious referents than for negative religious referents and more Satan attributions when the religious referent was negative. Thus it is possible that such behaviours would affect normative attribution errors.

The Actor-Observer Bias and Religion

Hunsberger (1983) also extended attribution theory into the realm of religion by examining the actor-observer bias in perceptions of self and others. The study focused specifically on the causes (internal or external) of one's current religious position. Attributions were made for self, a religious other, and a nonreligious other. Significantly more dispositional (internal) attributions were made for self than for a religious other, but no differences were found for self and nonreligious others (i.e., there was a failure to demonstrate an actor-observer bias). Additionally, there were significant differences based on reported religious orthodoxy, such that the high orthodox group did not make significantly different attributions for self, a religious other, or a nonreligious other while the low orthodox group made significantly more external attributions for the religious other person (compared to self and a nonreligious other). Hunsberger (1983) suggested that high orthodox individuals might have minimized the importance of dispositional factors. Rather they emphasized situational determinants for their own and others' religious positions. An alternative explanation might be that the low orthodox individual views those who are religious as being more influenced by situational factors (e.g., upbringing, attending church) while the nonreligious are viewed as "choosing" their position. A single bipolar item was used to measure attribution responses (with situational and dispositional alternatives as end-points). The means for the high orthodox group were close to three for all attributions (self, a religious other, and a nonreligious other).

It is possible that religiosity is viewed as neither situational nor dispositional, or alternately, it is caused by both situational and dispositional

factors. Gorsuch and Smith (1983) suggested that people often believed that with effort and God's help they could achieve desired outcomes, suggesting the importance of both situational and dispositional factors. If both factors are important, then distinguishing between these attributions is important to understanding the way in which these attributions affect one's religious orientation.

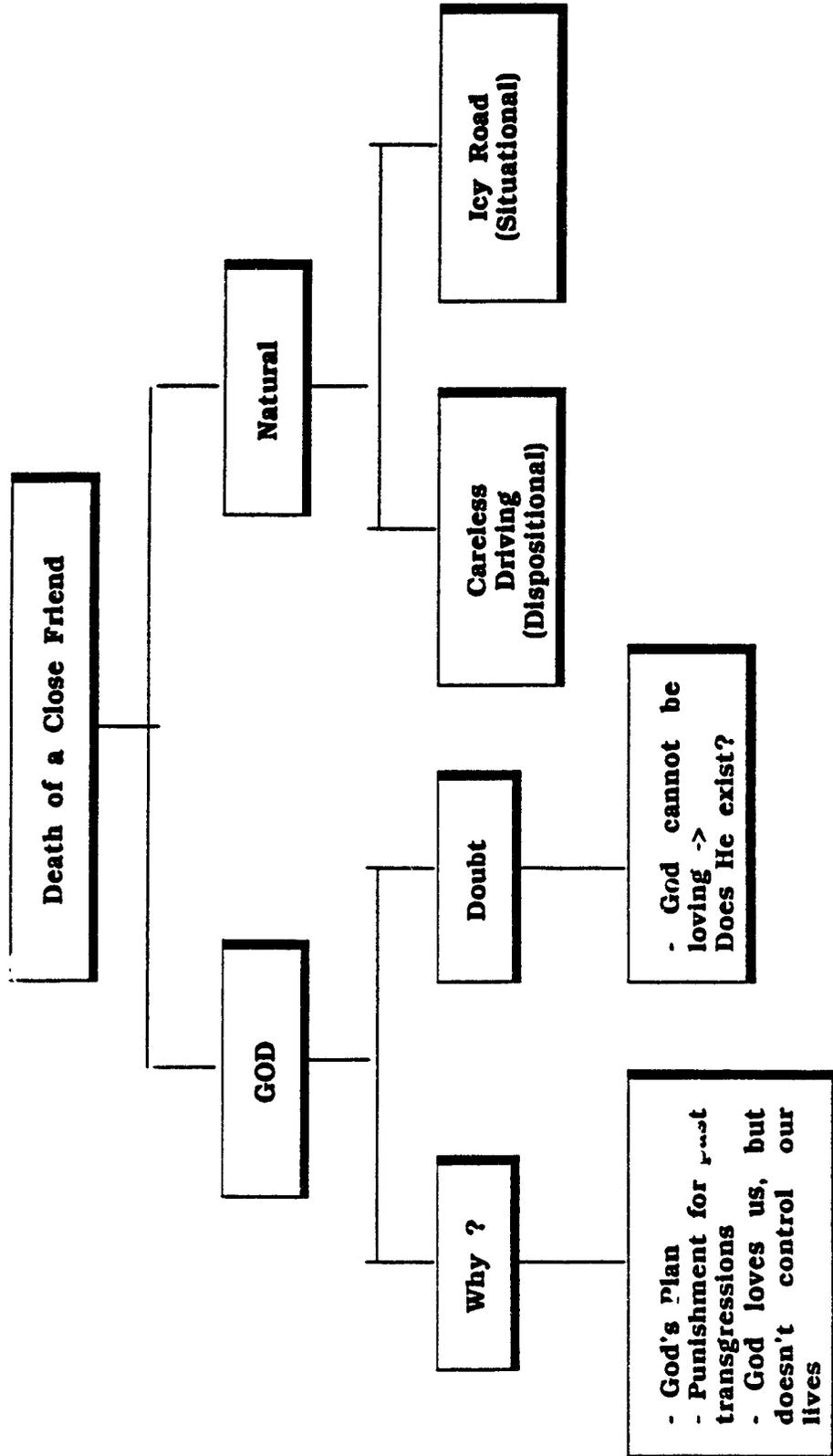
How one attributes causes for religious doubts (an aspect of one's religious orientation) would provide insight into the actor-observer bias in religiosity. For example attributions for religious doubts may differ from attributions for a person's religiousness. It is entirely possible that one's religious doubts are viewed more personally than religiosity and thus may be prone to an actor-observer bias which does not seem to occur for attributions with respect to a person's religiousness. Thus, the present study will examine differences in attributions for the causes of religious doubts for high, middle and low orthodoxy groups.

Religious Doubt and Attribution

While no previous research has addressed the relationship between doubt and attribution theory, some writers have suggested that attributions influence a person's religious beliefs (Spilka, Hood & Gorsuch, 1985) and thus attributions might also have an impact upon religious doubts.

Vergote (1985) suggested that religious doubt could follow the loss of a loved person (see Figure 1) and this would present "a conflict between expectation and experienced reality" (p. 58). When conflict or uncertainty is aroused, especially in a situation where an event is unexplained, Kelley (1967) argued that individuals engaged in causal analysis. Attributions of

Figure 1
Causal Attributions for an Unexpected Death



causality may determine whether or not the doubt is resolved. Such analysis is undertaken when one's beliefs and impressions have been seriously challenged by environmental events. Thus, when a close friend or relative dies unexpectedly in a car accident (i.e., an environmental event), causal analysis is likely to occur. When an individual engages in such causal analysis, often no straight-forward answers exist. For example, the blame could be placed on God. On the other hand, the blame could be placed on the situation (e.g., bad road conditions) or the individual (e.g., careless driving), but these might not provide satisfactory solutions. Such an event might have aroused doubt and the causal attribution (e.g., person, situation, God) will likely determine whether or not such doubt is resolved. For example, attribution to natural causes rather than God would permit a religious individual to retain some of his/her beliefs about God. If God is viewed as causing the event, then the attribution must go further and deal with how such an event could be allowed to occur, if God were loving. If the blame is attributed to past transgressions (i.e., punishment) then perhaps God is not so loving after all.

It is expected that a self-based consensus effect will influence whether or not individuals believe (a) "highly religious" individuals experience religious doubts and (b) "nonreligious" individuals need religion. If high orthodoxy individuals do report religious doubts, it is expected they will believe other religious individuals will experience religious doubts (to justify that they themselves reported at least one doubt). High orthodoxy individuals will believe religion is important to the nonreligious because religion is important to them, while low orthodoxy individuals will believe religion is not important to the nonreligious because it is not important to them.

This would suggest that causal attributions might be used to study people's religious doubts. An examination of attributional biases for the perceived causes of religious doubts will be undertaken. Participants will be interviewed, asking them about the religious doubts they have experienced, their resolution and what they believed were the causes of these doubts. These causes will be categorized into situational, dispositional, and "unspecified" categories. The categories of interest for the present investigation will be those of situational (external) and dispositional (internal) attributions.

STUDY 1:

AN INTERVIEW INVESTIGATION OF RELIGIOUS DOUBTS

This research was undertaken to increase our understanding of the ways in which individuals experience and deal with religious doubts. Based on previous research (e.g., Starbuck, 1899; McKenzie & Hunsberger, 1988), it can be assumed that many individuals do experience religious doubt. Since highly orthodox people apparently doubt very little (or at least do not freely admit to their religious doubts, regardless of type) (McKenzie & Hunsberger, 1988), it would seem that the frequencies of doubts reported by high, medium and low orthodoxy groups should differ¹³. In addition, it is expected that causal attribution patterns for religious doubts will differ for the different orthodoxy groups. Although there exists no directly relevant research, it is suggested that individuals high on Christian orthodoxy will make more dispositional attributions for others' religious doubts, while the low orthodoxy people will make more situational attributions. Also, in spite of Hunsberger's (1983) failure to find an actor-observer bias within a religious context, it is expected that an actor-observer bias will be apparent regarding attributions for one's own versus others' religious doubts. Unlike religious beliefs, which people might view as being attributable to one's upbringing (such as family socialization and church attendance) doubts can be viewed as more personal and thus individually based.

¹³ Previous research assessed **intensity** of religious doubts while the present study focused on **frequency** of religious doubts.

Integrative complexity will also be assessed, permitting an examination of the level of reasoning sophistication for religious doubts. It is argued that experiencing religious doubts is related to higher complexity levels, since doubts would seem to occur when one is aware of two or more conflicting positions.

Thus, the present study examines the relations between religiosity and doubt, the types of attributions made for causes of religious doubt, and complexity of thinking about doubts.

Hypotheses

Attribution Biases for Religious Doubts

1. Based on the *actor-observer bias* (Jones & Nisbett, 1972), it is expected that, overall, participants will make more situational attributions for their own doubts relative to others' doubts which should be more dispositionally attributed.

Additionally, it is expected that low orthodoxy participants will make more dispositional attributions for their own doubts than will the high orthodoxy participants. This expectation is based on the fact that low orthodoxy participants will view religious doubts more positively, since they do not contradict their personal religious position. This will attenuate but not eliminate the actor-observer effect.

2. Based on the *self-based false consensus effect* (Fiske & Taylor, 1984), if participants themselves reported doubts, it is hypothesized that they will believe that "highly religious individuals secretly have religious doubts" (question 6).¹⁴ It must be noted that the data were collected prior to the generation of this hypothesis, and therefore an assessment of the self-based false consensus effect was necessarily limited. Generally such assessment is based on percentage estimates of people holding similar/dissimilar positions. It was not possible to assess whether low religious people have

¹⁴ Based upon a subjective analysis by the author of the interviews while they were conducted, almost all participants reported experiencing some religious doubt. Therefore, this hypothesis is in part based on the fact that people did report experiencing religious doubts themselves.

doubts since participants were not asked this question. Similarly the question concerning "a need for religion" was asked only with respect to nonreligious people as the target, not highly religious people. Assessment of this hypothesis is thus restricted, and largely exploratory.

High and low CO groups will be compared to determine if there are differences in the self-based false consensus effect for orthodoxy groups. It is hypothesized that high CO participants will believe religion is more necessary for nonreligious people, while low CO people will tend to believe religion is not necessary (question 7). This is based on the assumption that the highly religious believe they themselves need religion (certainly Altemeyer, 1988, suggested that many high RWA participants claimed they "needed" religion).

Integrative Complexity and Religious Doubt

3. It is hypothesized that there will be a positive correlation between integrative complexity level in thinking about religious doubts and the extent to which participants report doubting religious teachings.

Frequencies of Religious Doubts

4. It is hypothesized that the high orthodoxy group will report fewer doubts than middle and low CO groups overall, consistent with McKenzie & Hunsberger's (1988) finding of stronger reported levels of doubt for low CO

than high CO groups.¹⁵

Further expectations

No specific hypotheses are offered, but the relationship between integrative complexity of thought about reported religious doubts and CO will be examined. Also, the relationship between integrative complexity of thought about reported religious doubts and RWA will be examined.

¹⁵ It should be noted that this hypothesis deals with the reported **frequency** of religious doubt, while the previous research by McKenzie and Hunsberger (1988) examined intensity of religious doubts.

Method

Participants

A screening questionnaire (see Appendix D) was completed by approximately 700 students in 8 introductory psychology classes during regular class time at Wilfrid Laurier University in the Fall of 1987. CO scores from this screening questionnaire were used to select participants from the upper, middle and lower 20 percent of the CO distribution for a subsequent follow-up interview in the Spring of 1988. The interview study included 28 high (10 males and 18 females), 25 middle (11 males and 14 females) and 27 low (13 males and 14 females) CO participants ranging in age from 18 to 50. Thus, the total sample size for this interview study was 80 (46 females and 34 males).

Materials

The interview schedule (see Appendix E) presented 4 vignettes about dilemmas in life to assess integrative complexity (relevant to a separate investigation). The final two pages of the interview schedule (pages 14 and 15) included open-ended questions about sources of religious doubts, their causes, resolution and when they had occurred. Of particular interest were items related to the types of doubts that people spontaneously report experiencing¹⁶ (questions 1, 5 and 6). Responses to items dealing with

¹⁶ The questions of interest here are: 1) What would you say is (or was) the most serious doubt about religion or religious beliefs that you have had in the last few years? (Describe the doubt); 5) Have you had any other doubts about religion

causes of religious doubt¹⁷ (questions 4 and 8) were subjected to an attribution analysis. Items one and three¹⁸ combined, as well as items four and eight, were scored for integrative complexity.

Procedure

The interview was administered on an individual basis in March and April, 1988. Participants selected from the earlier questionnaire study, as described above, were contacted by telephone and asked to participate in this interview study. All participants agreed to have the session tape recorded, and all interviews were transcribed (maintaining anonymity of participants) for analysis purposes. The interviews took approximately 45 minutes, on average, and were conducted by two female interviewers, one a fourth year honours student, and the other a Masters student. All interviews were conducted in a small room on the psychology floor of a main academic building on campus.

or religious beliefs in the last few years which are as serious, or almost as serious as (above)?; and 6) In general, do you think highly religious people secretly have doubts about their religion?

¹⁷ The questions being assessed here are: 4) What do you think caused the doubt in the first place?; and 8) What do you think are the main causes of people doubting their religion or religious beliefs, in general?

¹⁸ The third question asked was: Have you resolved this doubt? This response was combined with the question which asked participants to name the most serious doubt experienced. Scoring the initial question which simply asked participants to name a doubt (i.e., there was no discussion, simply naming) was bound to lead to relatively low complexity even though the thinking leading to that doubt might have been complex. It was also believed that the explanation of how the doubt was resolved would not be easily understood without the doubt itself being included in the scoring, thus the two responses were combined.

Results

All analyses were conducted using the SPSSX (1986) computer statistics package.

Treatment of the Data

The CO Scale and High, Medium and Low Orthodoxy Groups

The means and standard deviations for the high, medium and low CO groups as well as means for the background religious questions can be found in Appendix F. The cells were not balanced for gender since there was an unequal distribution of males and females in the original questionnaire sample. The sample selected approximated the proportion of males and females in the larger sample which had 90 females and 38 males in the high CO group, 81 females and 50 males in the middle CO group, and 65 females and 64 males in the low CO group.

The Preliminary Religious Doubt Scale

A preliminary version of Altemeyer's (1988) Religious Doubt (RD) scale was included in the fall screening questionnaire. Mean inter-item correlation for the eight items was .27 and Cronbach's alpha was .75. While the items are not exactly the same as the ones used in Study 2, many were reworded and included in the later RD scale. The items do demonstrate some internal consistency. Analyses using this preliminary scale are included in Study 1 for comparison to Study 2.

Attributional Scoring

Based on scoring procedures described by Elig and Frieze (1975), causes of religious doubt were categorized into situational (environmental) and dispositional (self) causal explanations (for questions 4 and 8) by two separate raters, who scored all responses independently. Interrater reliability for attributions was $r = .78$, $n = 65$, $p < .001$ for the question about the causes of personal doubts (question 4) and $r = .71$, $n = 68$, $p < .001$ for the question about the doubts for people in general (question 8). For each question some respondents were not included in the analysis since they were classified as having "no response" to the question (six respondents for question 4 and three respondents for question 8).

Scoring for Integrative Complexity

Integrative complexity was coded by a trained scorer blind to other information. Four standard questions from the interview were scored. Responses to the first two questions "What is the most serious doubt about religion or religious beliefs that you have had in the past few years?" and "Have you resolved this doubt?" were combined to provide a single score. Two others were scored separately: "What do you think caused the doubt in the first place?" and "What do you think are the main causes of people doubting their religious beliefs, in general?" Integrative complexity was scored on a 1-7 scale (see page 16), following the procedures of Suedfeld and Tetlock (1977). The scorer was trained in a workshop by expert scorers to a criterion of over .80 on standard workshop materials. A second similarly qualified scorer coded a sample of 10 of these protocols to check interrater reliability with the first scorer and correlations ranged from

.75 to .97 (see Table 1) for each of the 3 complexity scores. The three individual scores were then summed and the overall interrater reliability correlation was .83.

Table 1
Interrater Reliability Scores for Raters Scoring Complexity

Complexity Item	Interrater reliability
Doubt and its resolution	$r = .80$ *
What caused the doubt	$r = .97$ **
Main causes for people doubting	$r = .75$ *
Overall complexity score	$r = .83$ **

* $p < .01$

** $p < .001$

Attributional Analyses

We asked first whether respondents would make more situational attributions for their own doubts (question 4) and more dispositional attributions for others' doubts (question 8). As can be seen in Table 2, responses were largely situational, and few responses were dispositional for others' doubts ($n = 7$), thus failing to support the hypothesis. For example, if respondents mentioned tragedies, car accidents, hypocrisy of religion, being forced by others, these were coded as situational attributions. If questioning or wondering about one's faith or personal insecurities or depression were mentioned, these items were coded as dispositional attributions. The McNemar test for significance of changes (see Siegel, 1956) was used to

compare the two related samples. Significant differences were found for self versus others with respect to situational versus dispositional attributional tendencies, $\chi^2 (1, n = 23) = 13.47, p < .001$, such that participants overall made significantly more situational attributions for others than for themselves.

Table 2

*Situational and Dispositional Responses to Religious Doubts
for Self and Others*

	Other attributions	
	Dispositional	Situational
Situational	4	46
Self attributions		
Dispositional	3	19

People apparently do not make more dispositional attributions for others' doubts relative to their own doubts. In fact they make more situational attributions for others' doubts (see Table 2). However, do low orthodoxy participants make more dispositional attributions for their own doubts than high CO participants?⁷ The answer is no. As can be seen in Table 3, situational attributions accounted for most of the responses for

⁷ The investigation here did not include middle CO respondents since we were interested in possible attributional differences between the **extremes** of the CO distribution.

both the high (21 of 28) and low (14 of 22) CO groups. No significant differences were found for high versus low orthodoxy groups in their attributional tendencies, $\chi^2 (1, n = 50) = 0.31$. Thus, the hypothesis that high CO participants would make more situational attributions than low CO participants was not supported.

Table 3

*Situational and Dispositional Responses to Religious Doubts
for High and Low Orthodoxy Groups*

	Orthodoxy groups	
	Low	High
Situational	14	21
Self attributions		
Dispositional	8	7

In attempting to examine the self-based false consensus effect, those reporting doubts were to be compared to those reporting no doubts. There were too few participants who did not report doubts ($n = 2$) to make any statistical comparison. Thus this part of the hypothesis could not be tested. This also meant attribution bias comparisons between CO and the RWA scale were not possible, again because too few respondents reported "no doubts".

We next asked whether the high CO individuals would be more likely than low CO individuals to believe that "the highly religious secretly have

religious doubts". The frequency of (yes/no/not sure) responses was examined for high versus low CO respondents. However, two of the cells in this three by two analysis had expected frequencies of less than five, which is greater than 20 percent of the cells. Ott (1984) recommended that categories could be combined when expected frequencies were too small (i.e., more than 20% of the cells had frequencies of less than 5). Ott argued that such combinations should be done carefully to prevent changing the essence of the hypothesis of interest. With respect to the present comparisons, it seemed reasonable to combine the "maybe" responses with "yes" responses since both indicated some evidence of religious doubts. The combined analysis indicated that high CO respondents were more likely to believe the highly religious secretly had doubts than were those in the low orthodoxy group, as revealed by the responses shown in Table 4, $\chi^2 (1, n = 55) = 4.74, p < .05$.

The high CO group may be more likely to believe highly religious people secretly doubt, but are they more likely to believe that the nonreligious secretly need or want religion? The (yes/no/not sure)²⁰ responses (see Table 5) again revealed that the high CO group was more likely to believe that the nonreligious secretly needed religion than was the low CO group, $\chi^2 (2, n = 55) = 7.38, p < .05$ in response to the question, "In general, do you think nonreligious people secretly need religion, or want to believe in religion?"

²⁰ Since expected frequencies were greater than 5 for all cells, it was not necessary to collapse the classifications for this question. A supplementary analysis indicated that the comparison remained significant when the "yes" and "not sure" categories were combined, $\chi^2 (1, n = 55) = 3.96, p < .05$.

Table 4

Responses (Yes, No, Maybe) to Whether Highly Religious People Secretly Have Doubts by CO Groups

Orthodoxy Group	Type of Response		
	Yes	No	Maybe
Low	13	9	4
High	24	3	2

Table 5

Responses (Yes, No, Not Sure) to Whether Nonreligious People Secretly Need Religion by CO Groups

Orthodoxy Group	Type of Response		
	Yes	No	Not Sure
Low	11	11	4
High	19	3	7

Integrative Complexity Analysis

It was predicted that a positive association would hold between the extent to which people doubted religious teachings and the complexity of their thinking about religious doubts. As Table 6 reveals, those who had experienced greater doubts²¹ did, in fact, think more complexly about doubt. Pearson correlations were calculated for each of the complexity scores based on: (a) personal doubts and their resolution; (b) the main cause of the doubt; (c) the causes of people doubting their religious beliefs in general; and (d) a mean complexity score for each individual (i.e., averaged across the 3 individual complexity scores for each participant). Self-reported religious doubts showed a significant positive correlation with integrative complexity for each of these complexity scores, as can be seen in the first column of Table 6.

Next, Pearson correlations were used to analyze the association between the preliminary RD scale and integrative complexity for thinking about religious doubts. Although complexity of thought about causes of personal doubts was not significantly related to scores on the RD scale, all other correlations were significant, as can be seen in column 2 of Table 6. Finally, comparisons were made for CO²² and RWA with complexity. As can be seen in columns three and four of Table 6, complexity of thinking about

²¹ Self-reported religious doubts are based on responses (on a 0-5 scale) given for the question "If you were brought up under some religious influence, to what extent have you doubted the beliefs taught?"

²² It should be noted that the interview sample did not include the entire CO distribution (i.e., only those scoring in the top, middle and bottom 20% of the distribution were included) which meant that the distribution was not continuous and this could have affected the correlations.

personal doubts was not significantly correlated with either CO or RWA. There was, however, a significant negative correlation for both CO and RWA with complexity scores based on thinking about "causes of people in general doubting their religion or religious beliefs." Thus, doubt and the RD scale showed similar patterns, with significant positive correlations for almost all measures of complexity (i.e., seven of eight), while CO and RWA were significantly negatively associated with complexity measures only for thinking about the causes of (other) people's doubts (i.e., two of eight correlations were significant).

Table 6

Correlations Between Complexity and Religious Doubt, Christian Orthodoxy (CO) and Right Wing Authoritarianism (RWA), for Thinking About Religious Doubts

Complexity of Thinking About Religious Doubts	Doubt ^a	Dtscale ^b	CO	RWA
Doubts and their resolution	.21 * (n=68)	.26 * (n=72)	-.02 (n=78)	-.03 (n=73)
What caused the doubt	.28 * (n=63)	.11 (n=62)	-.20 (n=69)	-.12 (n=67)
Causes of people doubting their religion	.32 ** (n=68)	.30 ** (n=72)	-.21 * (n=79)	-.23 * (n=74)
Average Doubt Complexity	.30 ** (n=63)	.27 * (n=62)	-.15 (n=69)	-.15 (n=66)

* $p < .05$

** $p < .01$

^aDoubt refers to the single item which asked "If you were brought up under some religious influence, to what extent have you doubted the religious beliefs taught?".
^bDtscale refers to scores on Altemeyer's preliminary religious doubts scale.

Frequency of Religious Doubts

It was predicted that the high orthodoxy group would report fewer doubts than the middle or low CO groups overall. In particular, the number of doubts reported for the two questions about serious doubts they had experienced (i.e., questions 1 and 5), were totalled and compared across orthodoxy groups. A one-way analysis of variance (ANOVA) was computed, with CO (high, medium, low) as the between subjects variable and number of reported doubts as the dependent variable. No significant differences were found in the frequency of reported doubts for the high ($M = 1.72$), middle ($M = 1.62$) and low ($M = 1.88$) CO groups, $F_{2,76} = 0.59$. Additional analysis revealed a nonsignificant correlation between frequency of reporting doubts and orthodoxy, $r = -.13$, $n = 80$.

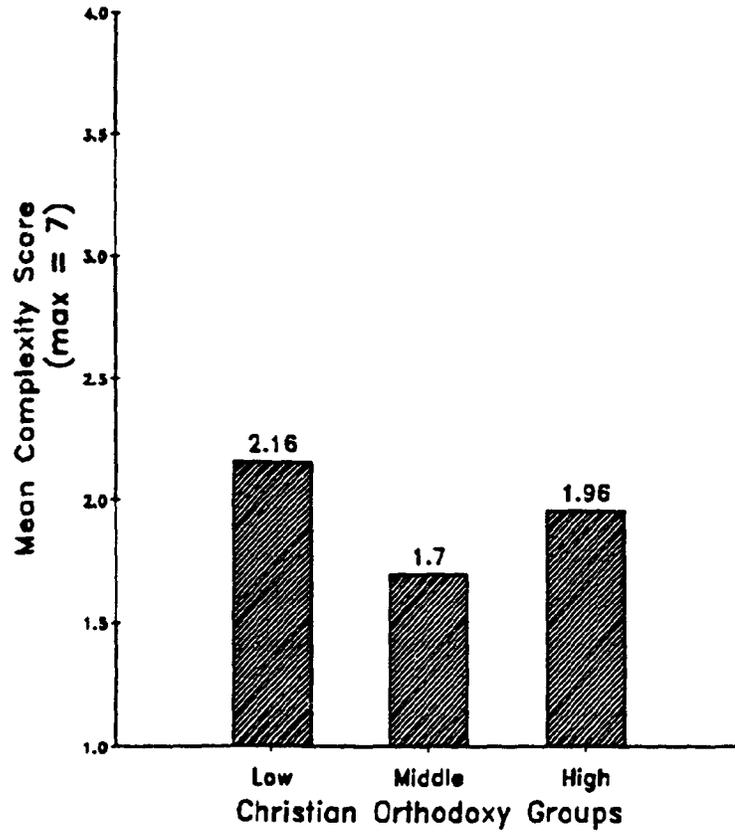
Further Expectations²³

An ANOVA with CO level (high, medium and low) as a between subjects variable, and average doubt complexity as a dependent variable revealed no significant effect²⁴, $F_{2,64} = 2.45$, $p < .1$. However, previous research reported a curvilinear relationship between complexity and extremity

²³ Of course, as more data analyses are carried out, the possibility of "significant" findings appearing (by chance) increases. Caution is thus advised in interpreting the results of the numerous statistical analyses.

²⁴ An ANOVA was used rather than Pearson correlations since the entire distribution had not been included in the interview sample (i.e., interviews were conducted with participants from the top 20%, the middle 20% and the bottom 20%).

Figure 2
Mean Complexity Scores Based on Thinking About Religious Doubts for Christian Orthodoxy Groups



of one's own position, such that those who were more extreme in attitude in either direction on the issue of capital punishment had lower complexity scores when they wrote an essay on capital punishment (De Vries & Walker, 1988). Similarly, Hunsberger et al. (1988) suggested that a curvilinear relationship might account for not finding linear correlations between orthodoxy and complexity when only high and low CO individuals were included. Since we had included high, middle and low CO groups, a trend analysis was conducted, revealing a significant quadratic relationship, $F_{1,64} = 4.29, p < .05$. Fisher's Least Significant Difference (LSD) procedure (α at .05) revealed that the low CO group was significantly more complex in their thinking about religious doubts than the middle CO group, but no other groups were significantly different. A graph of the means can be found in Figure 2.

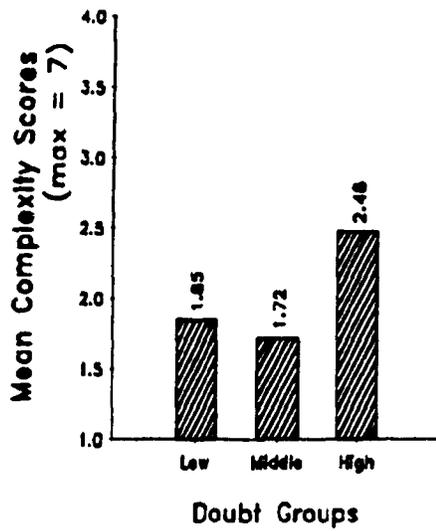
When the three contributing complexity scores (i.e., doubts and their resolution, causes of personal doubts, and causes for people doubting in general) were examined in separate ANOVA's with CO group as the between subjects variable, no significant main effects or quadratic relationships were found. However, in the analysis for people's doubts in general, the main effect approached significance, $F_{2,75} = 2.61, p < .1$, as did the quadratic term, $F_{1,75} = 2.82, p < .1$.

For comparison to Study 2, participants were categorized into high, middle and low doubt groups, using one-third splits based on scores from the preliminary RD scale. Graphs for the mean complexity scores (see Figure 3) show that the high doubt group was more complex for all questions. One-way ANOVA's were computed with doubt (high, medium and low) as the between-subjects variable and the measures of integrative

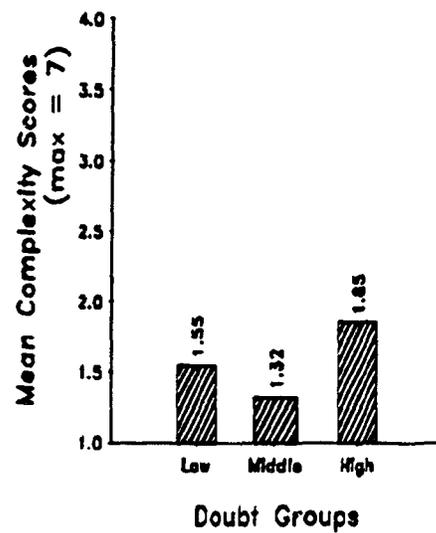
Figure 3

Graphs of Mean Complexity Scores for Thinking About (A) Doubts and Their Resolution (B) Causes of Personal Doubts (C) People Doubting in General and (D) Overall Complexity Average for Religious Doubt Groups

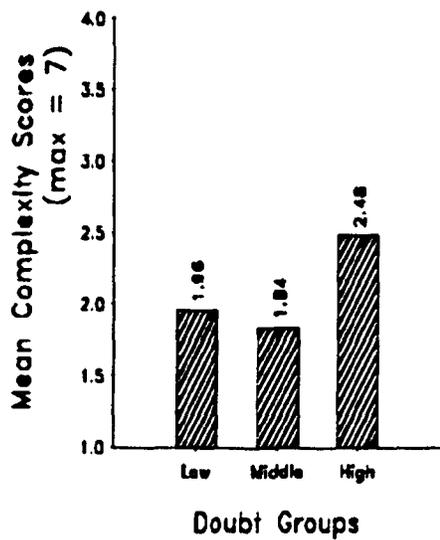
Graph A



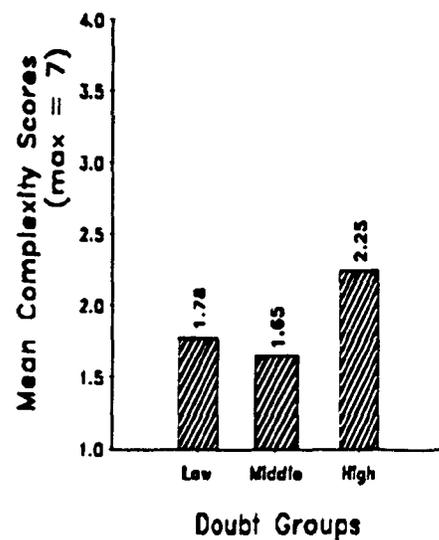
Graph B



Graph C



Graph D



complexity as dependent variables. Integrative complexity for thinking about doubts and their resolution significantly differed across doubt groups, $F_{2,69} = 5.22$, $p < .01$. Complexity of thinking about causes for one's own religious doubts (i.e., Graph B of Figure 3) did not vary significantly across doubt groups, $F_{2,59} = 1.98$. The question which asked about the causes of people doubting in general showed significant differences in complexity across doubt groups, $F_{2,69} = 3.91$, $p < .05$. The overall average complexity score also differed significantly across doubt groups, $F_{2,59} = 4.63$, $p < .05$. (Relevant ANOVA Tables can be found in Appendix F.) With the exception of the question about "causes of their own doubts," Fisher's LSD tests (α at .05) further indicated that there were no significant differences between the middle and low doubters, for 2 of the 3 complexity questions. The high doubters were significantly more complex when they discussed religious doubts than were the middle or low doubters.

An ANOVA was performed with complexity as the dependent variable, the three doubt items as a within subjects variable and CO groups as a between subjects variable. It revealed a significant main effect for the three doubt items, $F_{2,128} = 10.65$, $p < .001$. Further analysis determined that this effect was attributable to responses to the question about causes of personal doubts ($M = 1.61$) being significantly lower in complexity than (a) personal doubts and their resolution ($M = 2.06$), $t(67) = 2.15$, $p < .05$ and (b) causes for people doubting in general ($M = 2.12$), $t(67) = 4.19$, $p < .001$. Neither the main effect for CO group, $F_{2,64} = 2.45$, $p < .1$, nor the interaction of CO group with complexity scores, $F_{4,128} = 0.46$, $p = .76$, was significant.

In order to compare the present study to McKenzie and Hunsberger

(1988), an ANOVA with the preliminary doubt scale as the dependent variable and CO group as the independent variable was conducted. Scores on the preliminary doubt scale were not significantly different for CO groups. $F_{2,70} = 1.40$ (low CO, $M = 11.58$; middle CO, $M = 9.00$; high CO, $M = 9.15$) for the interview sample. However scores on the preliminary doubt scale were significantly different for low, middle and high CO scorers for the sample from which respondents were selected, $F_{2,595} = 25.05$, $p < .001$ (low CO, $M = 11.27$; middle CO, $M = 8.87$; high CO, $M = 7.87$). When the single doubt item was used as the dependent variable, with CO group as the independent variable, there were significant differences by CO groups for the interview sample, $F_{2,68} = 23.63$, $p < .001$ (low CO, $M = 4.00$; middle CO, $M = 2.21$; high CO, $M = 1.64$).

Discussion

Hypothesis 1

It was expected that participants would make more situational attributions for their own doubts (question 4) and more dispositional attributions for others' doubts (question 8). However, the attributions tended to be situational overall, with 70 per cent of the self attributions, and 90 per cent of the attributions for causes of others' doubts, falling in this category. This difference (i.e., in the opposite direction to that hypothesized) was significant. A methodological difference between this and other attributional studies may have contributed to this unexpected finding. In most investigations of the actor-observer bias, the contrast is between oneself and a specific other. In the present study comparisons were to other people in general and this may have limited dispositional attributions.

When participants make comparisons to others in general they may find it more difficult to see the person as being separate from the situation. Thus dispositional attributions would be less likely. When a specific individual with certain characteristics is the person being considered it may be easier to see that person as responsible. In this situation, dispositional attributions would be more likely.

Additionally, it was expected that low orthodoxy participants would make more dispositional attributions for their own doubts than would the high orthodoxy participants. This hypothesis was not supported since both high and low CO respondents made largely situational attributions. Perhaps doubts tend to arise after some precipitating event or situation (thus leading

to a situational attribution), and this minimizes dispositional/situational differences.

These results failed to support the expected actor-observer bias with respect to perceived causes of religious doubts. In fact, the results were in the opposite direction, with people overall making significantly more situational attributions for others than for themselves. This finding might suggest that these widely observed biases do not occur for attributions related to people's religious beliefs. These results are consistent with Hunsberger (1983), who reported a failure to find an actor-observer bias for attributions regarding the religious beliefs (positions) of hypothetical religious and nonreligious persons²⁵. As with the present results, there was a tendency in the direction of a reverse actor-observer bias.

Why would an actor-observer bias not exist or be reversed for religious beliefs and/or doubts? It is possible that doubts are viewed as being caused by some specific event which led participants to question their beliefs. Since an event would more likely be viewed as precipitated externally, it would lead to situational rather than dispositional attributions. Also, religious groups emphasize external causes as sources of beliefs (e.g., God, Christ, a vision) and doubts can also be seen as externally caused (e.g., evil, the devil, or associating with the wrong people). Starbuck (1899), for example, noted that clergy and laypersons believed doubt was closely allied with sin. Finally, as suggested by Hunsberger (1983), religious beliefs are abstract notions. It is possible that being abstract, they may be less

²⁵ The (hypothetical) religious person "believes firmly in the idea of Christianity, is active in church work, and attends services regularly" (Hunsberger, 1983, p. 5) while the nonreligious person does none of these.

likely to be seen as caused by the individual (i.e., dispositionally attributed) than behaviour. This might be the case since attributing beliefs cannot be based upon direct observations. Most research on the actor-observer bias has examined observations of particular behaviours of specific others. Thus, it may be the case that when one assesses beliefs such as one's religiosity or religious doubts, they may be less prone to an actor-observer bias since they are more abstract and not directly observable. Such speculation suggests that further research should explore whether the actor-observer bias is only found for behaviour and cannot be found for beliefs.

People are more likely to make situational attributions for negative events which affect them (Taylor & Koivumaki, 1976). If doubts are seen as negative, as would probably be the case for highly orthodox participants, then it is not surprising that more external or situational attributions are made for their own doubts. But this does not explain why more situational attributions are made for others' doubts than for one's own doubts. Possibly because attributions were made for others in general rather than a specific other, this led to diminished dispositional attributions.

Saulnier and Periman (1981) argued that engaging in a behaviour oneself enhances identifying with others who do the same thing. Here, respondents reported doubts for themselves and they attributed their doubts to situational causes. Thus, it is quite possible that they identify with others who experience doubts, and also situationally attribute the causes for others' doubts. In the present study, the two attributions were not significantly correlated, $r = .17$, $n = 70$. This is not to suggest that the actor-observer bias only occurs when one has not engaged in the behaviour, but it does provide one possible explanation for the failure to support the

actor-observer bias in the current study.

In any further research, an additional issue should be addressed. Taylor and Koivumaki (1976) have demonstrated that whether participants perceive events positively or negatively affects the types of attributions they make. Thus, it could be important to determine whether participants saw doubts positively or negatively as this could well affect the types of attributions (i.e., situational or dispositional) they would make.

Most research examining the actor-observer effect has incorporated scales to assess situational and dispositional causes. In our study, the participants did not specifically make forced choice or scaled situational or dispositional attributions. Rather, judges categorized their open-ended responses into the attributional groupings. Elig and Frieze (1975) have argued that asking respondents to generate their own causal explanations provides **greater** external validity since participants' choices are not limited by preselected alternatives. The present results suggest that attributions for causes of doubts are largely situational when "free responses" are elicited. Participants were giving attributions for self-generated doubts, so it is possible that attributions were more situational, since they were based on their own experiences.

It is also possible that people really do believe that doubts and religious beliefs are strongly influenced by one's upbringing and other situational factors. Thus, even if one is religiously orthodox, the response to causes for doubts or beliefs is largely situational. This general agreement on situational causes of religious doubts would tend to work against the actor-observer bias found in many other contexts (e.g., Goldberg, 1981; Jones & Nisbett, 1972).

Hypothesis 2

Based on the self-based false consensus effect, if participants themselves reported doubts, they were expected to believe that "highly religious individuals secretly have doubts" (question 6). However there were too few participants reporting "no doubts" ($n = 2$) to make any statistical comparison and it was not possible to assess this hypothesis. The responses of high and low orthodox participants were compared to determine if the highly orthodox seemed to be more prone to the self-based false consensus effect, since previous research has suggested that the highly orthodox are more susceptible to attribution biases (Lupfer & Wald, 1985).

High orthodoxy participants, when compared to low CO participants, revealed a significant tendency to believe that religious others could secretly have religious doubts. On the other hand, low orthodox respondents were significantly less likely to believe highly religious people could have doubts. This difference in expectations suggested that there was a difference between high and low orthodoxy participants which might be due to differences in the self-based false consensus effect. However further investigation is required since it was not possible in the present study to directly address the self-based false consensus effect. Perhaps because low orthodoxy participants do not view themselves as religious, and they themselves do doubt, they find it difficult to believe those who are religious also doubt.

It is possible that this tendency for estimations of doubts of highly religious people to differ for high versus low orthodoxy participants may result from a belief by the less orthodox that highly religious people accept

their faith blindly. One might speculate that the low orthodox may have to defend their position more often than the high orthodox. Since being nonreligious or anti-religious is not viewed as a traditional or typical position in our society, it is likely that they are frequently presented with conflicting arguments. This could make them better equipped to deal with such contradictory positions and more skeptical of religious positions. Further research should address the issue of whether the low religious see themselves as different from the highly religious as outlined above, although the highly religious do not make such distinctions. Altemeyer (1988) has found that high Right Wing Authoritarians tend to view their position as more like others while low Right Wing Authoritarians do not. Perhaps similar perceptions occur for the high and low religiously orthodox.

As predicted, high CO respondents also reported being more likely to believe that the nonreligious needed religion than did the low CO participants. The self-based false consensus effect would suggest that people believe others act as they would in the same situation. Thus, the highly religious believe religion is important to all people, since it is important to them. Certainly other literature (Altemeyer, 1981; Hunsberger, 1989) has indicated that highly orthodox people think religion is important to them. This may be an important factor in understanding the efforts of some highly religious people to introduce their religion into others' lives (e.g., proselytizing), since they view it as "needed for all." From their perspective, it may be that if someone is not religious, he or she really wants religion, even if s/he does not admit it.

We are not the first to suggest that orthodox individuals are not responsive to what others say. Batson and Ventis (1982) discussed a series

of studies conducted by Batson and his colleagues on helping behaviour. They found that orthodoxy did not predict helping behaviour. Often, however, the **type** of help offered by the highly orthodox was not responsive to the individual's needs, rather

it usually involved the subject's attempting to carry through a preset plan (e.g., taking the subject for a cup of coffee or revealing to him the strength to be found in Christ), and did not allow information from the victim to change that plan (Darley & Batson, 1973, p.107).

They stated that "the underlying motivation seems to be self-concern rather than concern for others, for at a behavioral level this orientation is not associated with either increased tolerance or increased responsiveness to the needs of others" (Batson & Ventis, 1982, p. 298). In a similar vein, highly orthodox participants in our study seem to have decided, possibly based on their own needs, that the nonreligious actually **do** need religion. It is probably a small step for these highly orthodox individuals to exhibit proselytizing behaviour. They **know** what nonreligious people **need** and they feel they can help these people by **giving** them religion. Thus, proselytizing behaviour might be an attempt to **give** people what they need in their lives. All of this is, of course, speculation, but could provide a basis for future research on proselytizing behaviour.

In retrospect, it may have been unreasonable to expect a self-based false consensus effect between high and low orthodoxy participants. Given that these two groups are so different, it may not be likely for them to generalize from themselves to the other group. Previous research found differences for high and low authoritarians (Alteneyer, 1988). Thus it seemed possible that high and low orthodox participants might be differentially affected by the self-based false consensus effect.

The present research had proposed to compare authoritarianism and orthodoxy in terms of the likelihood of making attribution errors (i.e., actor-observer bias and self-based false consensus effect). The present data did not permit comparisons for the self-based false consensus effect since too few participants reported no doubts. In terms of the actor-observer bias, no obvious patterns were discerned with the high authoritarians and high orthodox both being more likely to believe nonreligious individuals need or want religion than their low counterparts. No significant differences were found in terms of highly religious individuals secretly having doubts, and as noted before, these questions inadequately addressed both sides of the issue of the self-based false consensus effect. It will be necessary to leave the answer to the question, "Are high authoritarians more prone to attribution errors than the highly orthodox?" as suggested by Lupfer, Hopkinson and Kelley (1988), to future research.

Hypothesis 3

The prediction that there would be a positive correlation between self-reported doubt and integrative complexity scores for thinking about religious doubts was supported, not only for thinking about one's own doubts but also for thinking about the doubts of others. It is possible, of course, that greater complexity of thought leads to people having more doubts. Thus, individuals who are more complex may have more doubts due to their ability to consider alternatives (i.e., differentiate) and to integrate alternatives.

It is alternately possible that those who experienced doubts spent

more time thinking about such issues and thus were able to differentiate either different aspects of religious doubts or different areas about which they experience doubts. It could be that people who report experiencing greater doubt had not resolved their doubt and thus still entertained different alternatives on a doubt issue, displaying greater complexity than those who resolved their doubts. Those who experienced greater doubts also appeared to differentiate more regarding the doubts experienced by people in general. In part, they may have simply assumed others experienced similar doubts by generalizing their own doubts to others.

This speculation was assessed by examining the types of doubts reported for self and for people in general. Of the 35 respondents reporting doubts for "people doubting in general", just six respondents (17 per cent) reported one of the doubts they had experienced themselves. However, since the coding scheme used did not allow for categorizing more than one doubt in this final question about **others'** doubts, the overlap might have been greater had people been encouraged to suggest multiple doubts. At any rate, there is not much evidence to suggest that people are merely generalizing their own doubts to others.

Generally speaking, people who did not report doubts for themselves ($n = 10$) (i.e., no response or no doubts), failed also to report doubts for highly religious people or people in general. Of those respondents who personally reported experiencing doubts ($n = 71$), almost equal numbers reported no doubts for others ($n = 29$) as those reporting doubts for others ($n = 35$). No discernable patterns could be found in this regard, in terms of either the RD scale or the CO scale, as can be seen in Table 5 of Appendix F.

Complexity of thinking about religious doubts was further examined to determine if doubt groups (low, middle, high) or CO groups (low, middle, high) revealed differential complexity. It was found that doubt groups did differ, with the high doubt group being significantly more complex than the middle or low groups, for all but the question about the causes of one's own religious doubts. This difference was apparently due to differentiation (but not integration) of material on the part of high doubt participants. Complexity scores of 4 and above indicate some level of integration, but only 8 of 243 possible responses (less than 4%) scored 4 or above across the three doubt items (see Table 6, Appendix E). Thus, very few responses revealed any integration. It might be argued that, in a sense, the doubt scale itself measures differentiation since it is based on **different** types of religious doubts. A person with none, or just one type of doubt would likely score quite low overall on the RD scale and might also tend to score low on complexity because of a failure to differentiate types of doubts. It should be noted, however, that the participants had completed the scale several months prior to the interview, and probably they were not merely remembering issues mentioned within the scale when discussing religious doubts.

Why did the question about causes of one's own religious doubts elicit lower complexity for thinking about religious doubts than did the other doubt complexity items? In part, this may have been due to the fact that respondents were asked for a single versus multiple causes. Asking "what caused something" generally requires a conclusion on the part of the respondent. A conclusion can be integrative in nature and thus at a high level of complexity. However it can also lead to a simplistic response, thus

lowering complexity. Given the results of Lea et al. (1989), it would seem that it is difficult for most people to integrate readily in many problem areas, and thus requesting a cause for their doubts likely led to a "simpler" response, lowering complexity for this question.

CO groups were not found to be significantly different in complexity of thought, with the exception of a curvilinear relationship found between CO group and overall complexity for discussing religious doubts. This suggests that the relationship between complexity of thinking about doubts and CO group is not as reliable as that found for doubt groups. A significant relationship was found for three of the four doubt group analyses. Only one of the orthodoxy group analyses was significant, and that was for the combined complexity measure. When this significant curvilinear relationship was further broken down, the only significant difference was between the middle and low orthodoxy groups. Perhaps the low orthodox are more complex in discussing doubts because they have considered doubt issues more than the middle orthodoxy group.

Additionally, these results suggest that complexity may be affected by topic domain, since the relationship between the religious doubt scale and complexity for thinking about doubts was within the sphere of religious doubt. While complexity was expected to be significantly different for orthodoxy groups, this was only found for overall complexity. It is possible that orthodoxy may only predict complexity for existential issues in the religious domain as found by Lea et al. (1988) and Hunsberger et al. (1989). This is not to suggest that doubt issues cannot be existential issues. In fact, many of them are likely to be existential. For example, individuals can question whether there is life after death. Perhaps the

differences in complexity found for religious doubts reflect personal involvement in such issues. However, when people are asked to write paragraphs on existential issues, they may not use personal reflection to develop their responses to such issues and their responses are less complex.

Hypothesis 4

It was expected that frequencies for reported doubts would differ across orthodoxy groups. The failure to support this hypothesis may have been due to limitations inherent in the questions asked. Participants were asked to report the most serious doubt experienced (question 1) and if they had any other doubts which were almost as serious (question 5). Generally speaking, people reported just one or two doubts, limiting variability for frequency of reporting doubts. When responses regarding experiencing additional doubts were examined, only 12 respondents reported any further doubts. It is possible that had the interviewer probed more fully for additional doubts, variability would have increased.

Additionally, it is possible that other doubts were not reported because participants had not viewed them as being serious in nature (the question requested "serious" doubts). Respondents were not asked to list **any** or **all** doubts they had ever experienced. Such a question could well reveal frequency differences not apparent in the present study.

Of course, it is also conceivable that there were no significant differences to be detected regarding frequency of doubts. Highly orthodox people may have experienced doubts at certain times in their lives, just like

anyone else. Since they were asked "to give any serious doubts experienced in the last few years," they may not have felt their current religious beliefs were threatened and thus were more likely to admit experiencing doubts than in previous research (McKenzie & Hunsberger, 1988). Also, they may have resolved these doubts and are thus willing to report them because they are no longer an issue for them.

Altemeyer (1988) found that one third of his authoritarian participants reported "secret" religious doubts (in a metaphorical "hidden observer" framework) never reported to anyone before. Perhaps the questions used in the present interview schedule were innocuous enough to allow people to reveal their previously unreported doubts. Alternately, it is possible that a measure such as a bogus pipeline²⁸ or lie detector test would not have revealed significant differences in orthodoxy groups in the frequency of reporting doubts, since such measures might show that everyone does experience religious doubts to some extent. At present, we can merely speculate, given the weak frequency measure (i.e., simply reporting "doubts") used in the current study.

It will be remembered that McKenzie and Hunsberger (1988) found differences in intensity of experiencing religious doubts by orthodoxy groups, with the low orthodox experiencing the strongest doubts. In the present study, the preliminary doubt scale did not show differences for the interview sample. However, when the sample from which they were selected was examined there were significant differences in intensity for experiencing

²⁸ Participants are told that their "true opinions" will be revealed by physiological measurements of their reactions when responding to questions. Thus, they are less likely to "fake" responses believing that the experimenter will know if they do so (see Baron & Byrne, 1984, pp. 133-134).

religious doubts for orthodoxy groups, with the low orthodoxy group experiencing the strongest doubts. The single doubt item also was significantly different for orthodoxy groups, with the high orthodox experiencing the least doubt, as found by McKenzie and Hunsberger. The one exception to replication of McKenzie and Hunsberger was that of the nonsignificant relationship of the preliminary doubt scale with orthodoxy groups in the interview sub-sample. Two factors operated against finding this relationship. First, a preliminary version of the doubt scale was used with relatively weaker psychometric properties. Second, the selection process whereby individuals were selected based on CO scores may have inadvertently counteracted the relationship. Certainly results from the larger sample displayed a significant difference in intensity of doubts across CO groups²⁷. These results suggest that, across orthodoxy groups, there are significant differences in **intensity** for experiencing religious doubts. Thus the lack of relationship for **frequency** in our interview sample is all the more interesting. Further research is needed to determine whether weak measures led to not finding frequency differences or whether frequency and intensity are truly independent measures.

Further research should address the relationship between frequency and intensity of religious doubts. For example, a bogus pipeline technique could assess frequency and intensity of reported doubts, comparing them to a control group which is merely asked to report doubts. This would

²⁷ This suggested that the interview sub-sample may not have been a representative sample since significant differences were not found for the sub-sample. The selection criteria had been their Christian Orthodoxy scores and any failure to have a representative sample for religious doubts was likely a chance occurrence. Also, this should have operated against finding significant differences in integrative complexity for thinking about self-reported doubts.

help to determine if there are frequency and intensity differences for orthodoxy groups and whether these differences only occur when people are not "forced" to tell the truth.

When types of doubts reported (questions 1 and 5 combined) were examined for high, middle and low orthodoxy groups, it appeared that some doubts were reported more by certain groups than by others. However, Chi square analysis revealed no significant differences across CO groups. Doubts about the existence of God were reported more than any others overall, accounting for 31 per cent of the doubts reported. Trauma or tragedy accounted for 20 per cent, and intellectual doubts accounted for 15 per cent. The category "trauma or tragedy" might be somewhat overrepresented (as a source of doubt) in the present study because earlier in the interview participants were asked a series of questions about an unexpected death. At any rate, overall these three types of doubts accounted for 66 per cent of the doubts spontaneously reported. All of the categories of doubts, and the number of people reporting them, can be found in Table 4 of Appendix F, as well as the breakdown by CO groups.

It is important to note that the meaning and interpretation of the "same doubt" might differ considerably for different individuals and groups. For example, while both low or high CO participants could (and often did) report the existence of God as a source of doubt, the high may be more likely to feel one must "believe in God based on faith" while the low orthodox tend to say they "don't believe in God." Thus, **responses** to the issue can be quite different. Support for this contention can be found in the ways in which doubts are reportedly resolved by respondents, which

differed significantly across orthodoxy groups, χ^2 ($df = 4, n = 53$) = 17.47, $p < .01$. As can be seen in Table 5 of Appendix F, the high CO group was far more likely to resolve their doubts by accepting a religious position (15 of 26), while low CO participants rarely made this choice (2 of 21). Accepting a nonreligious position was more likely amongst low CO participants (7 of 21, compared to only 1 of 26 high CO participants). Of the remaining responses, 16 stated they had not resolved their doubts and 19 were classified as other, which included respondents who reported that they were unsure or searching for an answer. As can be seen in Table 5, these latter two categories did not differ for orthodoxy groups.

Future research should focus upon how participants resolve their doubts and what factors influence the decisional outcome. For example, interviews could be conducted with those who have rejected a religious position as well as those accepting a religious position to determine if they considered different aspects of the issue, if other persons were consulted (and if so whom) and how they feel about their current position (i.e., are they happy with their solution). Much of this could be investigated using integrative complexity to assess their decision making processes. It is expected that those who have rejected a religious position would have considered both the religious and nonreligious positions in arriving at their decision. Those who have accepted a religious position could well have rejected the nonreligious position as being unreasonable and not worthy of consideration. This expectation is based on the supposition that increased complexity is required to change one's position. Consistent with this expectation, several researchers have found that disaffiliation or apostasy is not a sudden occurrence, but rather tends to occur gradually over time after

much deliberation (Balch, 1980; Hunsberger, 1980; Wright, 1984). Thus, complexity could be useful in studying disaffiliation processes.

Based upon the present research, adopting an attributional framework for studying religious doubts has some merit. The self-based false consensus effect observed in the present study provides support for the existence of attributional biases in people's religious perspectives. An actor-observer bias does not appear to operate for beliefs or doubts (overall they are viewed as largely situationally caused), although limitations of measurement may have interfered with the emergence of the actor-observer bias.

The significant positive correlations between self-reported doubt and complexity of thinking for religious doubts were observed within the specific topic domain of religious doubt. The second study addresses the possibility that the relationship between complexity and doubt could be generalized to other (religious and nonreligious) topic domains.

STUDY 2:

A QUESTIONNAIRE STUDY OF RELIGIOUS DOUBTS

Study 1 examined how individuals made causal attributions for religious doubts, as well as the level of integrative complexity for reported religious doubts and their resolution. In particular, Study 1 revealed that those experiencing high levels of religious doubts demonstrated greater complexity of thought about religious doubts. Christian Orthodoxy was not related to complexity of thinking about religious doubts. This second study was undertaken to determine if the extent to which people report experiencing religious doubts is associated with complexity for other (religious and nonreligious) topic domains. Specifically, this study investigated the relationship between religious doubts, as measured by Altemeyer's (1988) Religious Doubts (RD) scale, and integrative complexity of thinking about (a) a religious issue (the existence of God) and (b) a nonreligious issue (capital punishment). Thus, the present study used a 3 x 2 factorial design with high, medium and low doubts as one between subjects factor and paragraph type (religious - nonreligious) as a second between subjects factor.

Hypotheses

Religious Doubts and Integrative Complexity

1. It is expected that the high doubt group will be more complex in their thinking about a religious issue than the middle or low doubt groups. This expectation is based on the fact that religious doubts occur when people are aware of religious beliefs, and thus they are expected to be aware of and express the two alternate positions (i.e., the belief and an alternate questioning or disbelief position), possibly attempting to integrate these positions. This tendency should generalize from thinking about religious doubts, to thinking about other religious issues (here, the existence of God). Since thinking about religious doubts requires reflection upon religious issues, it is expected that this contemplation should generalize to other religious issues.

Religious Doubts and Complexity for Topic Domain

2. Following the logic of the first hypothesis, an interaction is expected for doubt groups with topic domain. It is expected that complexity scores will be greatest for the high doubt group on religious issues, compared to nonreligious issues, while it is expected that complexity for the low doubt group will be greatest for nonreligious issues compared to religious issues. Additionally, since previous research has found significant differences for topic domains (Hunsberger, et al., 1988; Lea et al., 1988; Pancer, Lea, Pratt & Hunsberger, 1989), a main effect is likely for paragraph type (i.e., religious

versus nonreligious issues), such that responses to the nonreligious topic will be more complex than those to the religious topic.

Further Expectations

It is expected that Altemeyer's RD scale (1988) will be negatively correlated with Right Wing Authoritarianism (Altemeyer, 1981) and Christian Orthodoxy (Fullerton & Hunsberger, 1982), replicating the findings of Altemeyer (1988).

Method

Participants

Two hundred and seventy-six students in three introductory psychology classes at Wilfrid Laurier University completed the questionnaire (Appendix G). This sample included 111 males and 163 females (2 individuals did not give their gender). There were 179 Protestants, 65 Roman Catholics, 21 "personal religion", 12 other, 1 Jewish person and 57 no religion which included 50 self-reported agnostics and 7 atheists. Two people were excluded from the analysis because they were not from Judeo-Christian backgrounds (i.e., Buddhist or Islam).

Materials

Part one of the questionnaire (see Appendix G) asked participants to write a brief essay in a 5 minute period. One-half of the participants wrote about the existence of God, the others about capital punishment. These essays were scored for integrative complexity. Part two contained 39 structured response items assessing integrative complexity (items 1-38), the 24-item CO scale (Fullerton & Hunsberger, 1982; items 40-63), the 30-item RWA scale (Altemeyer, 1981; items 65-94) and a Religious Socialization scale (Hunsberger, 1987; items 95-106) as well as filler items (numbers 39 and 64). For all of the above items, participants were asked to give the extent of their agreement with the presented statements on a seven-point response format, ranging from strong agreement (+3) to strong disagreement (-3). Part

three contained three objective items to assess how conflict is generally resolved in one's life as well as how the participant deals with issues of capital punishment and the existence of God. Part four contained questions about general background information: gender, age, year of studies and major, present and past religious affiliation (questions 5 & 6), religious emphasis while growing up (question 7), agreement with and doubts about beliefs taught (questions 8 & 9), church attendance (question 10) and interest in religion (question 11). This was followed by Altemeyer's (1988) 10-item religious doubts (RD) scale (items 12-21) which involved a response format ranging from 0 ("no doubt at all") to 5 ("a great deal of doubt"). Many of the items were included in this questionnaire for a separate research project and thus are not relevant for the present study. The main items of interest for the present research are the essay, which will be used to assess integrative complexity, the CO scale, the RWA scale, Altemeyer's RD scale and the background information contained in part 4.

Procedure

The questionnaire for this research was administered during regular class time to three introductory psychology classes in October and November, 1988. Students were asked to voluntarily complete the 15 page "attitude survey" (Appendix G). Respondents were informed of the confidential nature of their responses and their right to withdraw from the research at any time.

Results

The RD Scale and High, Medium and Low Doubt Groups

Altemeyer's (1988) RD scale was used to assess religious doubt. The mean inter-item correlation for the 10 items was .40 and Cronbach's alpha was .87. Thus, the revised scale seemed to have stronger psychometric properties than the preliminary Doubt scale used in Study 1 which had a .27 mean inter-item correlation and a Cronbach's alpha of .75.

Participants were divided into high, medium and low doubters (each comprising one-third of the distribution), based on their RD scores, as had been done with CO scores in previous research (McKenzie & Hunsberger, 1988; Hunsberger, Lea, McKenzie, Pancer & Pratt, 1988). Those who scored 13 or less were in the low doubt group, those scoring 14 to 23 were in the middle doubt group and scores of 24 and above led to classification as "high doubt." High, medium and low doubt levels were then used as a between subjects factor for the present study.

The RWA Scale and the CO Scale

Right Wing Authoritarianism as measured by the RWA scale (Altemeyer, 1981), and Christian Orthodoxy as measured by the CO scale (Fullerton & Hunsberger, 1982), were used as between subjects variables in separate analyses. Again, the distributions were divided into thirds (high, medium, low). Those participants having scores 108 and below on the CO scale were in the low CO group, those from 109 to 155 comprised the

middle CO group and those 156 and above were in the high CO group. Those scoring 112 or below on the RWA scale were in the low RWA group, those 113 to 130 were in the middle RWA group and those 131 and above were in the high RWA group. These variables were used for comparison purposes to determine if RD was a better predictor of complexity scores than CO or RWA.

Since the above one-third splits (i.e., for RD, CO and RWA) were based on the entire sample distribution, this resulted in unequal Ns when broken further into religious and nonreligious essay domains (i.e., creating the six experimental cells). Cell sizes varied from 39 to 51 for doubt groups, from 36 to 54 for CO groups, and from 42 to 49 for RWA groups, across the two topic domains. The means, standard deviations and number of participants per cell are reported in Tables 1 and 2 of Appendix H for religious doubt groups, broken down by topic domain and various background variables. Similarly, information pertaining to CO groups can be found in Appendix I and RWA groups in Appendix J.

If participants were divided into high, middle and low CO groups based on one-third splits **within** each of the paragraph types, the cell Ns were of course almost perfectly balanced, but another problem arose. The cell means for the CO groups were quite different in some cases (e.g., 74 and 92 for low CO for the religious and capital punishment topic domains respectively). This suggested that the cells might not be matched. An analysis of variance run on the cells with Christian Orthodoxy scores as the dependent variable and CO groups and topic domain as independent variables revealed not only an effect of CO group (as expected), but also an interaction with topic. A similar interaction was found for RWA group and

topic. Doubt groups did not yield such interactions. However, to be consistent, all the analyses reported for doubt, CO and RWA groups use the unbalanced cells.

Since unbalanced cells were being used for analysis, the possibility that homogeneity of variance had been violated was assessed using Cochran's C. These analyses were conducted with complexity as the dependent variable and topic and groups (i.e., doubt groups, CO groups and RWA groups in separate analyses) as independent variables. In each analysis, the probabilities for Cochran's C were $p < .001$. Therefore homogeneity of variance had not been violated in these analyses.

Scoring for Integrative Complexity

Integrative complexity for the essay topics (capital punishment [NR] and the existence of God [R]) was coded by a trained scorer blind to other information, as in study 1.²⁸ A second scorer, who had been trained in a series of weekly sessions to score these materials, coded a subset of these materials as a check for interrater reliability. This subset included both religious and nonreligious items and, as shown in Table 7, there was strong interrater reliability for the subsets and overall.

²⁸ This scorer had been trained in a complexity scoring workshop conducted by two experts from Suedfeld's laboratory at the University of British Columbia (UBC) using the most recent draft of a manual currently being developed by the UBC group. The minimum training criterion had been $r = .80$ on a series of items. This correlation was obtained between the scorer and each of the two experts from UBC.

Table 7
*Interrater Reliability Scores for Religious and Nonreligious
Essay Completions*

Essay Type	Interrater Reliability	Number Scored
Religious Existence of God	$r = .90 *$	10
Nonreligious Capital Punishment	$r = .90 *$	10
All Items	$r = .87 *$	20

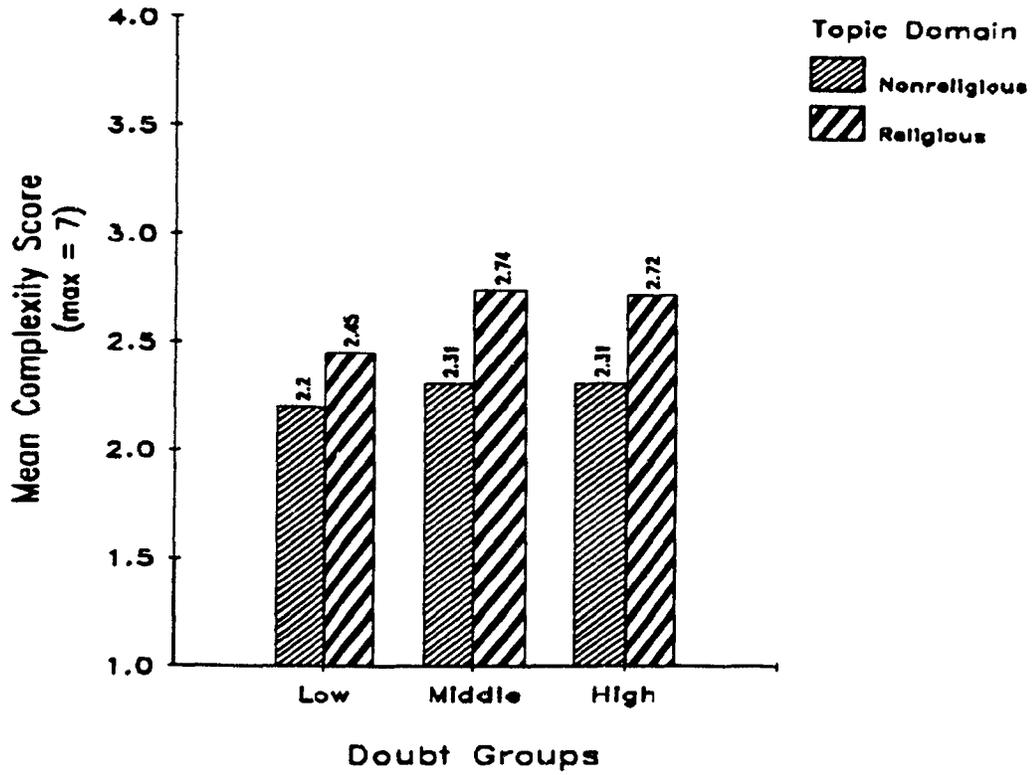
* significant at $p < .001$

Hypothesis Analysis

To recapitulate, the central expectations for the present study were that (1) high doubters would be more complex in thinking about religious issues than medium or low doubters, and (2) high doubters would be more complex on religious compared to nonreligious issues, while low doubters would be more complex on nonreligious compared to religious issues. Since the low doubters were expected to be somewhat more dogmatic in dealing with a religious topic it was expected that this would lead to lowered complexity of thinking about a religious issue. No comparable reduction of complexity of thinking was expected to occur for the low doubters on a nonreligious topic. Finally, it was expected that thinking about the nonreligious topic domain would be more complex than for the religious domain. None of these predictions was supported by the two-way factorial

Figure 4

Mean Complexity Scores by Topic and Religious Doubt Groups



analysis of variance with doubt groups (high, medium, low) and paragraph type (religious, nonreligious) as two between subjects variables and integrative complexity as the dependent variable. Paragraph type (i.e., religious or nonreligious) had a significant main effect on complexity of thinking. However religious paragraphs ($M = 2.63$) revealed more complex thinking than nonreligious paragraphs ($M = 2.24$), $F_{1,252} = 14.40$, $p < .001$.

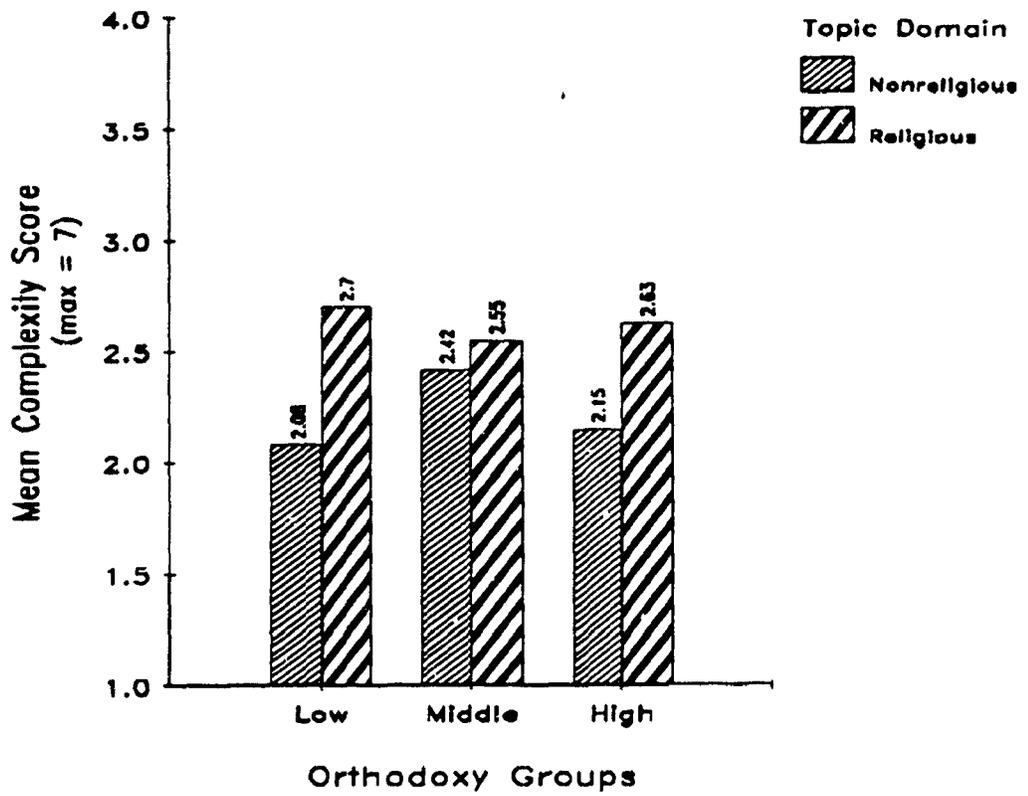
Doubt group (low, medium and high) had no significant main effect on complexity of thinking, $F_{2,252} = 1.83$. Means for the six experimental cells (doubt group by essay type) can be found in Appendix H (Table 3), and a graph of these means can be found in Figure 4. The analysis revealed a nonsignificant interaction of doubt group with paragraph type, $F_{2,252} = 0.35$. An a priori contrast revealed a nonsignificant difference between the high and low doubt groups for complexity scores, $F_{1,252} = 2.58$.

A two-way factorial analysis of variance was conducted with CO groups (high, medium, low) and paragraph type (religious, nonreligious) as two between subjects variables and integrative complexity as a dependent variable. Paragraph type (i.e., religious or nonreligious) had a significant main effect on complexity of thinking such that religious paragraphs were associated with more complex thinking than nonreligious paragraphs, $F_{1,266} = 19.27$, $p < .001$. Means for the six experimental cells can be found in Table 3 of Appendix I. The analysis revealed a nonsignificant main effect for CO group, $F_{2,266} = 0.43$ as well as a nonsignificant interaction between CO groups and paragraph type, $F_{2,266} = 2.39$, as can be seen in the graph shown in Figure 5.

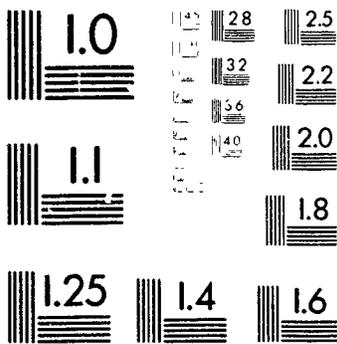
It was hypothesized that having doubts would lead people to be more complex because they would have thought about the related issues more.

Figure 5

Mean Complexity Scores by Topic and Christian Orthodoxy Groups



2



MICRO

Therefore it was expected that the relationship between religious doubts and complexity should be linear. On the other hand, it might be argued that the relationship of complexity and orthodoxy was not as likely to be linear, since holding an extreme position could possibly lead to a rather one-sided and less flexible consideration of issues. Thus, it was expected that the relationship between orthodoxy and complexity would be curvilinear, while no curvilinear relationship would be found between doubt groups and complexity. Orthogonal polynomials revealed a nonsignificant curvilinear relationship with orthodoxy, $F_{1,266} = 0.85$ and a significant curvilinear relationship for the orthodoxy by topic interaction, $F_{1,266} = 4.40$, $p < .05$ (see Table 5, Appendix I). However, orthogonal polynomials revealed a nonsignificant curvilinear main effect for doubt groups, $F_{1,266} = 1.01$ and a nonsignificant curvilinear relationship for the doubt group by topic interaction, $F_{1,266} = 0.23$ (see Table 5, Appendix H).

Further Analyses

One-way ANOVA's were conducted with each of the topics as dependent variables and CO groups as independent variables. Each analysis examined whether a curvilinear relationship could be found for orthodoxy groups. The nonlinear components were nonsignificant; $F_{1,135} = 0.56$ for the religious topic, however orthodoxy had a significant curvilinear effect on the nonreligious topic (capital punishment), $F_{1,133} = 5.12$, $p < .05$.

While hypotheses for this study were based on an analysis of variance, this analysis collapses much of the information available. Since scales were used to measure CO, RWA and doubt, reducing the information

to three groups (high, medium and low) could well conceal relationships existing between the individual scales and complexity for thinking about topics. By using Pearson correlations, the relationship between each scale and complexity could be assessed. Furthermore, Pearson correlations allowed a more direct comparison of results between Study 1 and Study 2. Additionally, by using multiple regression, the independent contribution of each scale to complexity, along with the effects of topic domain, could be evaluated.

Pearson correlations were conducted to assess the relationship between complexity and responses to the single doubt item "If you were brought up under some religious influence, to what extent have you doubted the religious beliefs taught?". The single doubt item was not significantly correlated with complexity ($r = .07$, $n = 246$) overall. However, when complexity was separated by topic domain, the correlation between the single doubt item and complexity for the religious domain (i.e., the existence of God) was significant ($r = .16$, $n = 124$, $p < .05$), while it was nonsignificant ($r = -.03$, $n = 122$) for the nonreligious domain (i.e., capital punishment). A test of significance of differences showed that these two correlations were not significantly different from each other, $z = 1.48$. The single doubt item was correlated $r = .58$, $n = 241$, $p < .001$ with Altemeyer's (1988) RD scale.

Similarly, Pearson correlations were used to assess the relationship between complexity and Altemeyer's RD scale. A significant positive correlation ($r = .11$, $n = 258$, $p < .05$) was found overall, and the correlation for the religious topic domain approached significance, $r = .14$, $n = 130$, $p = .052$, while the relationship between complexity and RD for the nonreligious topic was nonsignificant ($r = .05$, $n = 128$).

A two way factorial analysis of variance was conducted with RWA group (high, medium, low) and paragraph type (religious, nonreligious) as two between subjects variables and integrative complexity as a dependent variable. Paragraph type (i.e., religious or nonreligious) had a significant main effect on complexity of thinking such that religious paragraphs were associated with more complex thinking than nonreligious paragraphs, $F_{1,265} = 16.76$, $p < .001$. Means for the six experimental cells can be found in Table 2 of Appendix J. RWA group had no significant main effect on complexity of thinking, $F_{2,265} = 0.17$. The analysis revealed a nonsignificant interaction between RWA groups and paragraph topics for complexity scores, $F_{2,265} = 0.53$. Therefore it can be concluded that RWA groups did not have a significant effect upon complexity of thinking in this study.

Pearson correlations were used to assess the relationship between complexity and Altemeyer's RWA scale. A nonsignificant correlation, $r = -.02$, $n = 273$ was found with complexity overall. The correlation between the religious topic and complexity was nonsignificant, $r = -.08$, $n = 138$ and the correlation between the nonreligious topic and complexity was nonsignificant, $r = .07$, $n = 135$. Thus RWA does not appear to be associated with complexity for either the individual religious or nonreligious topics, or with overall complexity.

It was expected that religious doubt would be negatively associated with orthodoxy and authoritarianism. This expectation was supported, with Altemeyer's (1988) RD scale being negatively associated with the Fullerton and Hunsberger (1982) CO scale, $r = -.66$, $n = 259$, $p < .001$ and Altemeyer's (1982) RWA scale, $r = -.47$, $n = 257$, $p < .001$, thus replicating previous research (Altemeyer, 1988). Correlations of the religious doubt scale

with background variables were as expected, with degree of emphasis placed on religion ($r = -.26$, $n = 259$, $p < .001$), acceptance of religious beliefs while growing up ($r = -.60$, $n = 247$, $p < .001$), as well as current church attendance ($r = -.47$, $n = 257$, $p < .001$) all being negatively associated with the RD scale. Orthodoxy was positively associated with emphasis placed on religion ($r = .51$, $n = 270$, $p < .001$), acceptance of religious beliefs ($r = .67$, $n = 254$, $p < .001$), and church attendance ($r = .57$, $n = 266$, $p < .001$). A breakdown of means for these background variables by Doubt groups can be found in Table 2 of Appendix H, while the breakdown by CO groups is found in Table 2 of Appendix I.

Continuing our comparison to the first study as well as to McKenzie and Hunsberger (1988), an ANOVA with the doubt scale scores as the dependent variable and CO group as the independent variable was conducted. Scores on the doubt scale were significantly different for orthodoxy groups, $F_{2,258} = 75.65$, $p < .001$. The means for the three groups were: high CO, $M = 11.23$; middle CO, $M = 18.33$, and low CO, $M = 27.47$. Thus, it can be seen that the low CO group reportedly experienced the strongest doubts. Additionally, when the single doubt item was used as the dependent variable and CO group as the independent variable there were significant differences for orthodoxy groups, $F_{2,245} = 31.55$, $p < .001$. The means for the three groups were: high CO, $M = 1.60$, middle CO, $M = 1.91$, and low CO, $M = 3.14$.

Finally, multiple regression was used to assess the contribution of topic domain and the CO, RWA and Doubt scales in predicting complexity scores. A complete model with all variables included was compared to a model with only topic domain as a variable. The complete model, $F_{4,252} =$

4.65, $p < .01$, $r^2 = .068$, was not significantly better in predicting complexity scores than the reduced model (i.e., topic alone), $F_{1,255} = 14.92$, $p < .001$, $r^2 = .055$, since the contribution to r^2 of the CO, RWA and Doubt scales, $r^2 = .013$ was nonsignificant, $F_{3,236} = 1.5$. However, even the reduced model only weakly predicted complexity scores, since only 5.5 per cent of the variance was accounted for by the model.

Discussion

Although a significant main effect of topic domain (religious, nonreligious) was found for the topic by doubt group analysis of variance with complexity as the dependent variable, the prediction that there would be a significant main effect of doubt group on complexity was not supported. It was also expected that the two factors would interact, but again this effect was nonsignificant. Additionally, the planned comparison between high and low doubt groups was nonsignificant. Thus, doubt group failed to have any significant effects on integrative complexity in the ANOVA analyses. Finally, although the main effect of topic domain was significant, it was in the opposite direction to that hypothesized. This hypothesis had been based on previous research (Hunsberger et al., 1988; Lea et al., 1988; Pancer et al., 1989). Of these previous investigations however, only Pancer et al. (1989) examined complexity for essay topics (i.e., a religious and a nonreligious topic) comparable to the present study. Other studies had used paragraph completion tasks and are thus less directly relevant to the present study. Pancer et al. found that responses to a nonreligious item, $M = 2.59$ (capital punishment) were more complex than those to a religious topic, $M = 2.04$ (life after death). In the present study, responses to the nonreligious item, $M = 2.24$ (capital punishment) were less complex than those to the religious topic, $M = 2.63$ (the existence of God). There are a number of possible explanations for this unexpected finding, relative to previous research.

First, there is concern that current methods of assessing integrative

complexity by means of raters scoring a single item per person should be reexamined. It might be better if each topic domain were represented by several paragraph completions, so that an **index** of complexity could be determined for each participant within a single topic domain, giving a more reliable measure of complexity as was used in research by Pratt et al. (1989). This could have been accomplished by using a within subjects design and having participants complete more than one paragraph for each topic domain.

The failure of the present study to replicate previous results suggests that measures of complexity which are based on a single verbal or written response may be too variable from one study to the next to yield consistent results. However, there are several other factors which may have contributed to the difference in outcomes.

It may be that subtle differences in the stimulus materials may result in differences in complexity of thinking about the item. For example, in some previous research conducted by the WLU complexity research team (unpublished data, see page 18), means for the religious item "life after death" ($M = 2.66$) did not differ from the current study ($M = 2.63$). However substantially lower means for capital punishment were found in the present study ($M = 2.24$) compared to the previous unpublished data ($M = 3.02$), which was somewhat unexpected. It is possible that the differences for capital punishment could have resulted from the raters in the present study being more conservative overall in their scoring than raters in previous studies. If this is the case, then there might have been differences in the complexity scores for the religious items from the former study to the present one. Thus, it is possible that the Existence of God

topic could elicit more complex responses than does the Life after Death topic. However this supposition has not been empirically tested. Such speculations suggest the need for more direct comparison between the two religious paragraphs to assess whether merely changing the topic from one study to the next was sufficient to reverse the effects found previously, or whether there are differences in mean complexity scores for the two paragraphs.

An alternate explanation is that the reliability of integrative complexity for the previous study (Fall 1987) was questionable. The interrater reliabilities were $r = .56$, $n = 25$ for life after death and $r = .47$, $n = 22$ for capital punishment. Thus, any differences between the two studies might have been an artifact of weak interrater reliability in the Fall 1987 scoring. However, interrater reliabilities for a third study (Pancer et al., 1989) were more acceptable, $r = .73$, and that study did find that indeed responses to the topic of capital punishment were more complex than were those to life after death. Since high reliability was obtained for the present study's scoring (Fall 1988), $r = .90$, it would seem that the present results were not merely due to problems with interrater reliability.

One component which may have contributed to lower complexity scores for capital punishment in the second study, is the fact that Canada had a vote on Capital Punishment in the House of Commons prior to the first study (June 29, 1987). Previous to this vote, there was a great deal of discussion on the issue of capital punishment, within the House of Commons, as well as more generally. While at first glance, it would seem that this would lead to greater complexity (associated with general awareness of pro and con arguments), it is also possible that this debate

led to people making choices. Having an established position on capital punishment (or any other issue for that matter) over a long period of time might lower complexity. Respondents might not present the arguments with which they disagree, or simply dismiss them out of hand.

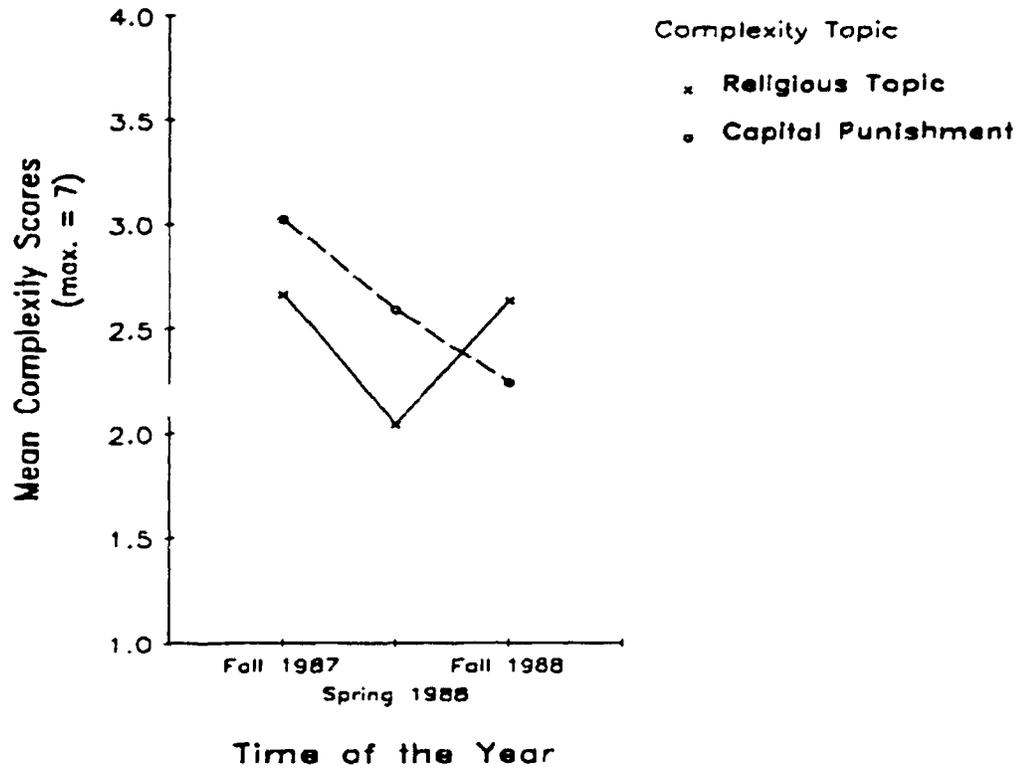
Alternatively, the passage of time could have led to less discussion about the issue of capital punishment, making the pro and con arguments less salient. It is thus possible that capital punishment was less familiar as an issue at the time of this study (i.e., Fall 1988) than was the case in the Fall, 1987 study immediately following the debate, or even than in the Spring of 1988, which was a mid-point between the other two studies. Figure 6 lends credence to this suggestion. A graph of complexity scores for capital punishment, as well as the religious topic, can be found in Figure 6. When comparing these complexity scores, it should be remembered that the religious topic for the Fall of 1987 and the Spring of 1988 time periods was "Life after Death," while the religious topic for the Fall of 1988 was the "Existence of God." Thus, diminished relevance and familiarity with the issue of capital punishment may have contributed to the lower complexity scores observed in the present study.

The failure to obtain significant differences for doubt groups might have been due to the effects of thinking about doubt (found in Study 1) not generalizing to other topic domains. Study 1 found that reported doubts (as measured by the doubt scale) were correlated with complexity for thinking about these doubts, while Study 2 revealed a weaker relationship between complexity and thinking about a religious topic.

In this second study, the correlations between the religious doubt scale and complexity for the two topic domains were in the direction

Figure 6

Mean Complexity Scores for Religious and Nonreligious Paragraph Topics over Time (1987 to 1988)



hypothesized. That is, the doubt scale was weakly but positively correlated with complexity of thinking about a religious topic but there was no relationship between the doubt scale and complexity of thinking about a nonreligious topic. This would support our hypothesis that those scoring high on the doubt scale would be more complex in their thinking about a religious topic than those low on the doubt scale. No relationship had been predicted for the nonreligious topic. Low doubters were expected to be relatively more complex in their thinking about the nonreligious topic than the religious topic, especially since we expected them to score very low on complexity for the religious topic. However the expected interaction between doubt and topic was not significant. These findings support the notion that complexity of thinking generalizes to some extent from religious doubts to a religious domain but does not generalize to a nonreligious domain. This would suggest that complexity may well be domain specific as has been suggested by other researchers (Lea et al., 1988; Tetlock, Burnzweig, & Gallant, 1985). However, this effect was not strong enough to reveal significant differences in the ANOVA (i.e., doubt groups did not interact with topic). As was suggested in the results section, the ANOVA may not have been the strongest test of our expectations. Since much of the (interval scale) information available in the scales used was lost when scores were "forced" into three categorical groupings (high, medium, low), it may have obscured any existing linear relationship.

Additionally, it is possible that the existence of God is a topic many people have considered. Given the predominance of this topic as a doubt-provoking issue in Study 1 (i.e., 35 per cent of respondents reported this as the single most doubt-provoking issue for them), it appears that many

people have thought about the issue at some time. It would seem that such consideration should lead to higher complexity scores for those who have addressed the issue. Indeed, the relationship between the doubt scale and complexity of thinking regarding the existence of God approached significance, and the single doubt item revealed a significant positive correlation with complexity of thinking about the existence of God, suggesting at least a marginal relationship between religious doubts and complexity of thought for this religious topic. Deliberation might well have led to greater complexity at the time when it was an unresolved issue for people. However, if they have resolved the issue in their own minds, they might not reveal this complexity when asked to discuss the topic. Rather they might present their current (one-sided) position on the topic, especially when the experimental instructions did not include any request for differing perspectives or positions. Thus, complexity scores for an essay topic, such as the existence of God, may not reveal as strong a relationship with religious doubt scores as would thinking about a personally involving doubt issue (i.e., one that has been self-generated).

The significant curvilinear orthodoxy by topic interaction found in the present study is quite intriguing. It would appear that the relationship is in part due to the curvilinear relationship found for capital punishment, while no relationship was found for the religious topic. Nonetheless, the curvilinear effect for capital punishment was not powerful enough to give a curvilinear main effect, perhaps because the religious topic, if anything, reversed this effect.

De Vries and Walker (1988) found a significant curvilinear relationship between complexity of thought (assessed by means of a written paragraph)

on capital punishment and extremity of one's own position on the issue of capital punishment, such that participants with more extreme attitudes on capital punishment tended to have lower complexity scores. Respondents in our study were categorized based on religious orthodoxy scores. The extremes (i.e., the upper and lower thirds) tended to be less complex on capital punishment (i.e., a nonreligious item) and they were more complex on a religious item (i.e., the existence of God). This is parallel to de Vries and Walker's findings. While our findings are similar to those of de Vries and Walker, our respondents were not assessed for their attitudinal positions on capital punishment. If this position had been assessed, one expects that we would have replicated de Vries and Walker's finding for the prediction of complexity on capital punishment.

It is entirely possible, then, that within topic domains, the relationship found between complexity and a scale or item assessing that domain would be curvilinear, with extremes having lower complexity scores. The present results, however, do not fully support this contention since a curvilinear effect was not found within the religious domain. It is possible that an existential religious item would have yielded a curvilinear relationship. In fact, no differentiation was made in our study between existential and traditional religious items. Alternately, it is possible that complexity of thinking about capital punishment is affected by one's religious position. Certainly some individuals rely on religious arguments to support their position, pro or con, on capital punishment (e.g., "an eye for an eye"; "judge not lest ye be judged").

Additionally, it should be noted that within a specific topic domain, one's measurement tool must tap both attitude extremes for such a

curvilinear relationship to occur. In the case of the religious doubt scale, the measurement is from no doubt to a great deal of doubt and thus it tends to measure one and not two extreme (i.e., pro and anti) positions on a particular topic. When people express "a great deal of doubt" they are not necessarily holding an extreme position. Rather they could be merely reserving judgement. A curvilinear relationship under these circumstances is unlikely (indeed, no curvilinear relationship was found for religious doubts). Our result for orthodoxy, while suggestive and interesting, clearly needs replication. Ideally, a future project should include existential, traditional and nonreligious topic domains with checks to ensure that participants perceive the content in these ways.

Similar trends are expected to exist for other content domains such as religious doubt. Possibly, as the topic area moves further away from the specific domain of religious doubt, the relationship between a religious doubt scale and complexity of thinking becomes weaker. Discussing or thinking about one's own doubts allows individuals to reflect on their own personal experiences. However when asked to write a paragraph on a specified topic (e.g., the existence of God) they may be less likely to draw from personal experiences, which could lead to lower complexity scores. Our results (from both studies) are certainly consistent with this possibility. In our first study, those who had experienced more doubt were more complex in discussing those doubts. In our second study, those experiencing more doubts were only marginally more complex when writing a paragraph on the existence of God. And no relationship existed when the topic area was unrelated to religion (i.e., capital punishment).

Also, previous research has found significant differences in complexity

for religious and orthodoxy groups when existential items (see page 17) are used (Batson & Raynor-Prince, 1983; Hunsberger et al., 1989). When comparing the religious topics used in the Fall 1987 and Fall 1988 questionnaires, it might be argued that these topics are not directly inviting existential responses since they do not deal with "our existence". The items in this study were not personalized and thus personal considerations need not have been addressed in the responses made. Previous "existential questions" had included reference to personal considerations or questioning or being questioned by others (e.g., "When I consider my own death. . ."). Thus, the lack of relationship for these questions (i.e., the life after death topic [1987] and the existence of God [1988]) might be due to the types of questions asked. The lack of significant differences for religious doubt groups and for the most part for orthodoxy groups (the one exception being the significant curvilinear interaction of CO groups with topic) may have been due to the religious items not directly inviting existential responses.

It will be remembered that RWA groups had no significant relationship to complexity of thinking in this study. Neither the main effect of RWA groups nor the interaction of RWA groups with topic domain was significant. In light of the above argument, it would seem logical to suggest that RWA could well be related to complexity if the issue involved was "authoritarian" in nature. For example, if a topic, such as "respect for authority" or "the rights of a homosexual" were used, it could well reveal a relationship between integrative complexity and RWA scores.

GENERAL DISCUSSION

Several interesting findings have been reported in this paper. The main objective was to examine a largely unexplored phenomenon in the psychology of religion, that of religious doubt. However, it must be noted that there are limitations in generalizing from a student sample to the population more generally. Let us first deal with the limitations of the present research and then return to address the objectives and findings.

University students are better educated than the general population, and thus they are more likely to demonstrate complexity of thinking (Pratt, Pancer, Hunsberger, & Manchester, in press). On the other hand, they may have had limited experience with religious issues due to their youth. For example, they typically have not had to address issues such as whether they should raise children in a religious environment. Nor are they as likely to have dealt with trauma, such as death of a parent, sibling or spouse. Thus, their religious experiences and their ability to be complex within the religious domain may not parallel an older population.

In spite of these limitations, however, the investigation of attribution styles and their applicability to religious doubt in Study 1 supported previous research by Hunsberger (1983), suggesting that religious beliefs are not susceptible to an actor-observer bias. This would imply that religious beliefs and doubts do not follow the pattern traditionally found for various other behaviour domains (Jones & Nisbett, 1972; Goldberg, 1981). It was argued earlier that abstract (e.g., religious) beliefs might be generally attributed to situational causes for both others and the self. That is,

abstract beliefs, being less observable than behaviours, may be less susceptible to an actor-observer bias. It may be that direct observation is conducive to actor-observer errors. Conversely, when people must rely on abstract thought processes, they might be less likely to exhibit such attributional biases.

However, our results do suggest that attributional biases have a place in the study of religious orientation and beliefs. A self-based false consensus effect was suggested to differ for orthodoxy groups, such that, relatively speaking, the highly orthodox seemed more likely to generalize their personal views to others. Thus they may have displayed a self-based false consensus effect. However it appeared that the low orthodoxy participants viewed highly religious people as different from themselves and were less affected by the self-based false consensus effect when referring to dissimilar (highly religious) people. As noted earlier (see pages 61-62), the above findings might be used to help understand the dynamics involved in proselytizing by religious groups, and the related resistance to this shown by nonreligious individuals. Further research however is required to examine the self-based false consensus effect since many aspects of it could not be assessed in the present study.

One possible improvement on the interview format used in Study 1 would be to counterbalance the order for discussing one's own and others' religious doubts. As mentioned in the discussion of Study 1, calling attention to one's own doubts and their causes might have led to greater situational attributions for others' doubts. Additionally, questions about doubts should not have been preceded by a vignette dealing with the issue of a tragic death and God being a loving God. This may have affected the

sources of doubts reported in the interview, making tragic events more salient.

There is some evidence to suggest that frequency and intensity of religious doubts are independent variables. Previous research (McKenzie & Hunsberger, 1988) found intensity of religious doubts was associated with orthodoxy, with the low orthodox being more likely to report intense doubts. A significant negative correlation between the Doubt scale and the Christian Orthodoxy scale replicated these results in both Study 1 and Study 2, with one minor exception in Study 1. Thus it does appear that intensity of religious doubting is negatively related to Christian Orthodoxy. Also, intensity may be related to one's rejection of a religious position. Religious doubts, as suggested by Study 1, are experienced by almost all people and frequency of doubting does not appear to be related to one's orthodoxy. At the same time, it is likely that the way in which the question was asked led to limited variability and this might well have obscured a relationship between frequency and intensity. Further research (as outlined on page 70) should directly address the relationship between frequency and intensity of doubting.

Another area needing further research exploration is that of apostasy or disaffiliation. This should be compared to maintaining affiliation with a religious group, in light of the finding that religious doubts seem to be closely related to these processes. Integrative complexity might provide a vehicle for examining such doubt resolutions toward and away from affiliation. This could be done either through an interview format in a cross-sectional study (as suggested on page 72) or by following participants over time, to assess changes in affiliation as they relate to complexity of thinking

about religious topics.

In our first study, reported experience of religious doubt (both for the doubt scale and for the single religious doubt item) was significantly positively related to integrative complexity of thinking about religious doubts, suggesting that doubting was associated with greater differentiation. Integrative complexity may well be linked with topic knowledge or interest, as suggested by Batson and Raynor-Prince (1983) and Lea et al. (1988). However, the present study did not directly address such an issue. Perhaps future research could ask respondents if they have thought about doubt provoking issues to determine if consideration of the issue is important to complexity of thought about that issue.

In our second study, the relationship between religious doubts and integrative complexity was further examined. It was expected that religious doubters would be more complex when discussing more general religious questions. Previous research has suggested that this type of religious question (existential vs. traditional) affected complexity differences (Batson & Raynor-Prince, 1983; Hunsberger et al., 1989; Lea et al., 1988). When an essay topic was more existential, the highly orthodox were less complex in their thinking about that topic. Since our religious item was more traditional, this might account for the lack of complexity differences between orthodoxy groups. Correlations between doubt scores and complexity of thinking for the religious topic suggested that there was some generalizability to the broader religious domain. However, significant differences were not obtained in the analysis of variance dealing with this issue. These relationships might be examined in further research where complexity of thinking about existential and traditional religious topics is compared to

complexity of thinking about religious doubt. It is expected that level of religious doubts will be related to complexity for existential religious items. In part, this is expected because orthodoxy has been linked with complexity for existential religious items but not for traditional religious items (Lea et al., 1988). Additionally, the weak correlations found between complexity for a religious item and the religious doubt scale in the present study suggest that some link exists between religious doubt and complexity of thought in the more general religious domain. The religious item used was neither clearly traditional nor clearly existential. Thus, further research is necessary to examine the existential/traditional relationship with religious doubts.

Previously, neither integrative complexity nor attribution theory had been used to investigate religious doubts. Thus, the present findings provide a broadened perspective and increased understanding of religious doubt. Attributions may shed light on the phenomenon of proselytizing and integrative complexity might aid in the exploration of disaffiliation. Thus, both of these social psychological vehicles have theoretical and practical application in the study of religion.

Currently religious groups are faced with decreasing membership (Bibby, 1987), and this trend toward disaffiliation is of some concern to these groups. As noted by Bahr and Albrecht (1989), many churches view disaffiliates as being "unfaithful, misguided, ignorant and/or sinful - or they never would leave the 'true fold'" (p. 181). One approach to this issue has been suggested in the present study. As membership declines, it is entirely possible that churches increase the pressures on members to proselytize. For example, in a recent church newspaper, Anglicans were exhorted to evangelize by inviting friends to go to church with them (Grant, 1989). In

the past, this was less likely to have been a demand placed upon that religious group. The present study would suggest that care should be taken when promoting one's religious position since we tend to believe others think like us and one's position may not be as acceptable to others as might be assumed. If individuals fail to recognize that others hold different positions, it is possible that they will encounter resistance when promoting their religious position. Both proselytization and disaffiliation are important issues for religious groups and deserve further investigation using methods employed in the present study.

Summary

The present research investigated religious doubts in two separate studies, the first being an interview study and the second being a questionnaire-based survey.

In the interview study, attributional biases were examined. Individuals were asked about the causes of religious doubts for themselves and others. It was expected that participants would believe the situation was more likely to be the source for their own doubts than for others' doubts, demonstrating an actor-observer bias. In fact, attributions were predominantly situational and when self attributions for personal religious doubts were compared to those for others' doubts, participants made significantly more situational attributions for others' doubts than for their own. This suggested that attributions for causes of others' doubts are not prone to an actor-observer bias, possibly because they cannot be based on direct observation. Additionally, it appeared that highly religious individuals tended to believe others were more like them than they actually were, suggesting support for a self-based (false) consensus effect. However, further research is required to determine whether a self-based false consensus effect differentially affects high and low orthodox individuals.

Several practical implications of this project have been discussed earlier. These include the applicability of attribution biases for understanding proselytization. Additionally religious doubts could well be related to disaffiliation and should be further explored in an effort to understand the processes of disaffiliation with the church.

Complexity of thinking for religious doubts was also examined. It was expected that those who had higher scores on the religious doubt scale would be more complex in their thinking about religious doubts. It was found for three of the four complexity measures that complexity of thinking about religious doubts was related to experiencing religious doubts, and overall those who experienced more doubts were more complex in their thinking about religious doubts.

In the questionnaire-based survey (Study 2), religious and nonreligious content areas were included to investigate complexity of thinking in these domains, and its possible relationship to religious doubt. It was found that religious doubts were not correlated with complexity of thinking about a nonreligious issue and were only weakly correlated with a religious issue. In light of previous research, it is tempting to speculate that, had the religious issue been more existential in nature, the positive correlation between religious doubts and complexity of thinking would have been stronger. At any rate, these results are consistent with the speculation that complexity of thinking is domain-specific. That is, complexity of thinking was moderately related to religious doubts for the religious doubt domain, weakly related for more traditional religious content, and there was no relationship for capital punishment (nonreligious domain).

Authoritarianism was unrelated to complexity of thinking about religious or nonreligious domains in Study 2, consistent with our speculation that complexity of thinking is domain-specific. Also, orthodoxy interacted with topic domain and was found to have some nonlinear (i.e., curvilinear) effects on complexity of thinking about religious doubts. This suggests that those who hold extreme positions may well differ from those who are more

moderately orthodox; however this was inconsistent from one topic to the next (i.e., religious to nonreligious).

Overall, one is struck by the utility of complexity and attribution theory in helping us to understand the religious doubt process (although many questions remain given the current research findings). For example, it would appear that the self-based false consensus effect may vary by orthodoxy groups with the highly orthodox being more prone to such attribution biases. Additionally, it seems that a reverse actor-observer effect may occur for religious doubts and such an effect deserves further research. Finally, complexity of thinking about one's own doubts apparently varies across doubt groups, with high doubters being more complex in their thinking about their doubts. As evidenced by our correlational findings, this relationship weakens for more general religious (but not specifically religious **doubt**) topics, and then seems to disappear for a nonreligious (capital punishment) domain. This suggests the importance of domain in studying cognitive complexity. Overall this research has confirmed the relevance of religious doubt for complexity of thinking and has further broadened the application of attribution theory to the psychology of religion, lending insight into attribution biases.

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APPENDIX A

Allport's (1950) Varieties of Religious Doubt

Allport's (1950) Varieties of Religious Doubt

1. *Reactive Doubt.* Individuals doubt as a reaction against religion and anything religious is viewed negatively leading to doubts. These people were viewed as "genuine doubters" with many atheists fitting in this category.

2. *Self-interested doubt.* This doubt arises because self-centered expectations, such as unanswered prayer, have not been fulfilled. Self-interested doubt is characteristic of an extrinsic religious orientation. "The extrinsically motivated individual uses his religion whereas the intrinsically motivated lives his" (Allport & Ross, 1967, p. 434). Allport felt self-interested doubt was immature and doomed to failure, since it was based on religion serving personal needs or advantages.

3. *Hypocritical doubt.* The "shortcomings of organized religion" (Allport, 1961, p. 105) such as wars fought in God's name and other atrocities, often produce doubt. The hypocritical doubter notes that within organized religion many individuals do not live up to religious ideals, while many individuals outside the realm of organized religion are seen to live up to Christian ideals, thus leading to questioning religion's validity.

4. *Theological doubt.* God's image has changed through historical and cultural evolution from many gods to one God and a God in closer proximity to people. This fact has led some people to conclude that God is humanity's projection or creation and thus, He does not really exist.

5. *Self-deceptive doubt.* This type of doubt arises because people question whether or not religion has developed due to people's need to manufacture God and an after-life to deal with fear and anxiety. Thus it is a form of rationalization.

6. *Scientific doubt.* This doubt involves the reluctance to "accept statements unless they can be verified by individuals employing acceptable operations" (Allport, 1961, p. 111).

7. *Referential doubt.* This "commonest" mode of doubting was linked to "common sense" and questions religious statements which "if taken literally, would offend the ordinary canons of comprehension" (Allport, 1961, p. 117). In part, Allport saw this type of doubt as a result of semantic problems. Religious feelings and experiences lose something when put into words. If the Bible is understood metaphorically this doubt is less likely.

8. *Ritual doubt.* An additional type of doubt, discussed by Clark (1958), derived from confusion between magic and religion. Belief in the effectiveness of religious rites gave religion a magical overtone. For example, faith healers could lead to doubts in other aspects of religion if they failed to cure someone.

APPENDIX B

Vignette Items Used by McKenzie and Munsberger (1988)

Vignette Items (McKenzie & Hunsberger, 1988)

1. Darwin's theory of evolution has gained a good deal of acceptance in the scientific community. Can Darwin's theory, and the Bible's story of creation both be accepted?

(6 *Scientific doubt*)

2. Suppose that a very close friend, an excellent student, who has been enjoying fine health has been killed in a car accident. How can you explain such an incident relative to God being a loving God? (*Doubt about a specific event - not one of Allport's categories*)

3. There are many different world religions, including Hinduism, Judaism, Buddhism, Islam, and Christianity. Many of these are very old and established, having many believers, and all seem to claim having "the truth". How do you deal with this, based upon your religious beliefs?

(5 *Self-deceptive doubt*)

4. The Bible says that "God is love" (1 John 4: 7). Life often seems to make that a lie, especially if God is believed to be all powerful. Natural disasters occur where thousands, and millions die. The famine in Africa is an example of such massive disasters. Has this ever made you doubt that God is all-loving, or that He exists at all?

(3 *Hypocritical doubt*)

5. Many modern biblical scholars believe that many of the recorded sayings of Jesus were spoken by others, and not by Jesus. These scholars suggest that many of the events in Jesus' life as recorded in the gospels were probably myths used by the gospel writers to increase the believability of what they wrote. Has any of this ever crossed your mind?

(7 *Referential doubt*)

6. It often seems that prayers go unanswered. The words don't go beyond the ceiling, they float into the air and are blown away by the merest breeze. Has this happened to you?

(2 *Self-interested doubt*)

7. The Bible teaches that the 2nd Commandment is to "love your neighbour as yourself." History shows that in the name of Christ many atrocities have been committed. The war between the Protestants and Catholics in Ireland might be an example of Christians hypocritically practicing their faith. Does this ever cause you to doubt Christianity?

(3 *Hypocritical doubt*)

8. Some people question the basis of religious beliefs, considering them to be man's creation to explain how we came to be, rather than the divine inspiration of God as the Bible would have us believe. To believe in God is thus really just a way of deceiving ourselves.
(4 *Theological doubt*)

9. Faith healers can become well known quickly, and reportedly "cure" serious physical illnesses. Often, however, such healings simply don't occur. The healer is unsuccessful. Has this ever caused you to doubt that God can heal?
(8 *Ritual doubt*)

10. The more that scientists discover about the universe, the more it might seem that God is not present. there seems to be no physical place for heaven or hell and in fact science seems to explain the universe without any need to bring up the concept of "God". Has this ever crossed your mind? Have you ever doubted the existence of God?
(1 *Reactive doubt*)

APPENDIX C

Responses to Vignette Items Used by McKenzie and
Hunsberger (1988)

Examples of Responses to Doubt Vignettes**Vignette 1**

The Bible story of creation is the only true belief of how man came into being, therefore there is no doubt whatsoever. (42 year old female, high CO)

I assume not everything written in the Bible is literally accurate. Most of it was written long after events occurred, and need to be placed in historical context. In addition, translations and revisions may contain inaccuracies not present in the original (45 year old female, middle CO)

Darwin's theory is scientific in nature. The creation story is social documentation and as such provides a context for religion to exist. The two have different purposes. (23 year old male, low CO)

Vignette 2

God has a plan for everyone - that was His plan. (19 year old female, high CO)

Again, the God concept must be viewed in the light of existential limitations - as a guidance and inspiration more than over intervention. (33 year old male, middle CO)

At the funeral, if it is a religious one, the minister would most likely describe how my friend's suffering is over and how he sits with God. My question would be for the minister to explain why or how religion can justify the suffering my friend's family must endure or the suffering my friend himself endured before his death. Why does God make his own creations suffer so? (20 year old male, low CO)

Vignette 6

All prayers are heard, but not always answered the way we hope. (36 year old female, high CO)

While prayers may go unanswered, I feel that God may be listening. Man must also make efforts to achieve goals it cannot solely be left up to God. We have free will. Prayer also has the benefit of making one feel better through confession and asking for help even if this is not provided. (37 year old female, middle CO)

Most people who pray, don't really expect to be answered, but just knowing they are venting their feelings to a "higher" power helps them to cope. (22 year old female, low CO)

Vignette 10

God has existed before the world. There is a heaven and a hell. Satan lives in Hell and is waiting to devour lost souls. (21 year old female, high CO)

I keep questioning the source or origin of our physical earth - and why it is so orderly yet so complex. It's harder for me to not believe in some divine being - what I question is his/her character or form of existence. (25 year old female, middle CO)

Heaven and hell are symbolic and therefore don't need to physically exist (23 year old male, low CO)

APPENDIX D

Fall 1987 Screening Questionnaire

STUDENT SURVEY

This survey deals with your attitudes on a variety of topics, including religion and social issues, as well as aspects of your background.

Your individual responses will be kept in the strictest confidence. The information obtained will be analyzed on a group basis only, not on an individual basis.

You are free to withdraw from this study at any time, in which case none of your responses will be included in the analysis. Should you wish further information about the study, please contact the person listed below. Thank you for your cooperation.

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Part I: Mini Essay

In the space below and on the next page, we would like you to write a short essay on life after death. We need to get some idea of what university students think about this topic, and how they think about the issue. You will have approximately 10 minutes to write your essay. Do your best to present a thoughtful analysis of the topic, in the limited time available. You will be warned when there are just 2 minutes remaining, so that you can bring your paper to a conclusion. Please begin now, and do the best job you can.

(additional space for mini essay, if needed)

3

-- Please Do Not Turn The Page Until Told To Do So --

PART II: Attitude Survey

This survey includes a number of statements related to specific religious beliefs and other issues. You will probably find that you AGREE with some of the statements, and DISAGREE with others, to varying extents. Please mark your opinion on the line to the left of each statement, according to the amount of agreement or disagreement, by using the following scale:

Write a -3 in the space if you STRONGLY DISAGREE with the statement.
Write a -2 in the space if you MODERATELY DISAGREE with the statement.
Write a -1 in the space if you SLIGHTLY DISAGREE with the statement.

Write a +1 in the space if you SLIGHTLY AGREE with the statement.
Write a +2 in the space if you MODERATELY AGREE with the statement.
Write a +3 in the space if you STRONGLY AGREE with the statement.

If you feel exactly and precisely NEUTRAL about an item, write down "0" in the space provided.

1. _____ The only real result of prayer is the comfort one may get from saying it.
2. _____ God exists as: Father, Son, and Holy Spirit.
3. _____ Man is NOT a special creature made in the image of God, he is simply a recent development in the process of animal evolution.
4. _____ Jesus Christ was the divine Son of God.
5. _____ The Bible is the word of God given to guide man to grace and salvation.
6. _____ Those who feel that God answers prayers are just deceiving themselves.
7. _____ It is ridiculous to believe that Jesus Christ could be both human and divine.
8. _____ Jesus was born of a virgin.
9. _____ The Bible may be an important book of moral teachings, but it was no more inspired by God than were many other such books in the history of Man.
10. _____ The concept of God is an old superstition that is no longer needed to explain things in the modern era.
11. _____ Christ will return to the earth someday.
12. _____ Most of the religions in the world have miracle stories in their traditions; but there is no reason to believe any of them are true, including those found in the Bible.

-3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

13. _____ God hears all of our prayers.
14. _____ Jesus Christ may have been a great ethical teacher, as other men have been in history. But he was not the divine Son of God.
15. _____ God made man of dust in His own image and breathed life into him.
16. _____ Through the life, death, and resurrection of Jesus, God provided a way for the forgiveness of man's sins.
17. _____ Despite what many people believe, there is no such thing as a God who is aware of Man's actions.
18. _____ Jesus was crucified, died, and was buried but on the third day He arose from the dead.
19. _____ In all likelihood there is no such thing as a God-given immortal soul in Man which lives on after death.
20. _____ If there ever was such a person as Jesus of Nazareth, he is dead now and will never walk the earth again.
21. _____ Jesus miraculously changed real water into real wine.
22. _____ There is a God who is concerned with everyone's actions.
23. _____ Jesus' death on the cross, if it actually occurred, did nothing in and of itself to save Mankind.
24. _____ There is really no reason to hold to the idea that Jesus was born of a virgin. Jesus' life showed better than anything else that he was exceptional, so why rely on old myths that don't make sense.
25. _____ The Resurrection proves beyond a doubt that Jesus was the Christ or Messiah of God.
26. _____ Spanking a child only teaches him resentment and fear, and does nothing to teach him right from wrong.
27. _____ The way things are going in this country, it's going to take a lot of "strong medicine" to straighten out the troublemakers, criminals and perverts.
28. _____ It is wonderful that young people today have greater freedom to protest against things they don't like, and to "do their own thing."

-3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

29. _____ It is always better to trust the judgment of the proper authorities in government and religion, than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.
30. _____ People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.
31. _____ It would be best for everyone if the proper authorities censored magazines and movies to keep trashy material away from the youth.
32. _____ It may be considered old fashioned by some, but having a decent, respectable appearance is still the mark of a gentleman and, especially, a lady.
33. _____ The sooner we get rid of the traditional family structure, where the father is the head of the family and the children are taught to obey authority automatically, the better. The old-fashioned way has a lot wrong with it.
34. _____ There is nothing wrong with premarital sexual intercourse.
35. _____ The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers if we are going to save our moral standards and preserve law and order.
36. _____ There is nothing immoral or sick in somebody's being a homosexual.
37. _____ It is important to protect fully the rights of radicals and deviants.
38. _____ Obedience and respect for authority are the most important virtues children should learn.
39. _____ Rules about being "well-mannered" and respectable are chains from the past which we should question very thoroughly before accepting.
40. _____ Once our government leaders and the authorities condemn the dangerous elements in our society, it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within.
41. _____ "Free speech" means that people should even be allowed to make speeches and write books urging the overthrow of the government.

-3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

42. _____ Some of the worst people in our country nowadays are those who do not respect our flag, our leaders, and the normal way things are supposed to be done.
43. _____ In these troubled times laws have to be enforced without mercy, especially when dealing with the agitators and revolutionaries who are stirring things up.
44. _____ Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.
45. _____ Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
46. _____ The self-righteous "forces of law and order" threaten freedom in our country a lot more than most of the groups they claim are "radical" and "godless."
47. _____ The courts are right in being easy on drug users. Punishment would not do any good in cases like these.
48. _____ If a child starts becoming unconventional and disrespectful of authority, it is his parents' duty to get him back to the normal way.
49. _____ In the final analysis the established authorities, like parents and our national leaders, generally turn out to be right about things, and all the protestors don't know what they're talking about.
50. _____ A lot of our rules regarding modesty and sexual behaviour are just customs which are not necessarily any better and holier than those which other people follow.
51. _____ It is best to treat dissenters with leniency and an open mind, since new ideas are the lifeblood of progressive change.
52. _____ The real keys to the "good life" are obedience, discipline, and sticking to the straight and narrow.
53. _____ There is absolutely nothing wrong with nudist camps.
54. _____ The biggest threat to our freedom comes from the Communists and their kind, who are out to destroy religion, ridicule patriotism, corrupt the youth, and in general undermine our whole way of life.

- 3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

55. _____ Students in high school and university must be encouraged to challenge their parents' ways, confront established authorities, and in general criticize the customs and traditions of our society.
56. _____ One reason we have so many troublemakers in our society nowadays is that parents and other authorities have forgotten that good old-fashioned physical punishment is still one of the best ways to make people behave properly.

NOTE: For the remaining items in this section, please try to think back to the time when you were about 10 years old. (If it is too hard to think of a specific 1 year period, try to think more generally of the time when you were 8 to 12 years old.) Then indicate what your opinion would have been when you were about 10. Using the same +3 to -3 response format shown above, indicate the extent of your agreement or disagreement with each statement. Remember, answer as you would have when you were 10 years old.

57. _____ When things go wrong, I can always turn to others at church for support and understanding.
58. _____ My father doesn't really care whether I am religious or not.
59. _____ If anything, my experiences at school have encouraged me to be more religious.
60. _____ Other people respect my father for his religious beliefs.
61. _____ I do not have many friends at my church.
62. _____ When it comes right down to it, I'm not sure where my mother stands on religion.
63. _____ As I look back on it, I would have to say that the time I spent in church-related activities was a waste of time.
64. _____ I often socialize with people from my church.
65. _____ I get along well with my minister/priest.
66. _____ I hardly ever go to church.
67. _____ When it comes to religion, I look up to my mother as a model.
68. _____ I would have to say that the overall impact of my educational experience has been to make me less religious.

Part III: Background Information

Please check (or write in) the appropriate answer in the space provided.

1. Sex: Male _____ Female _____
2. Age: _____
3. Year of studies: 1. ___ 2. ___ 3. ___ 4. ___ Other ___ (Specify: _____)
4. What is your major? _____
5. In which of the following religious groups were you raised?
 - _____ Protestant (which denomination? _____)
 - _____ Catholic
 - _____ Some other religious group (specify: _____)
 - _____ No religion
6. With which religious group do you presently identify yourself or think of yourself as being?
 - _____ Protestant (which denomination? _____)
 - _____ Catholic
 - _____ Personal religion (no affiliation to any religious group)
 - _____ Some other religion (specify: _____)
 - _____ No religion, though I am not an atheist ("agnosticism")
 - _____ No religion, since I am an atheist
7. To what extent would you say that your family emphasized observing the family religion and religious practices as you were growing up?
 - 5 _____ a very strong emphasis was placed on religion
 - 4 _____ a strong emphasis was placed on religion
 - 3 _____ a moderate emphasis was placed on religion
 - 2 _____ a mild emphasis was placed on religion
 - 1 _____ a very slight emphasis was placed on religion
 - 0 _____ no emphasis was placed on religion
8. If you were brought up under some religious influence, to what extent have you doubted the religious beliefs taught?
 - 5 _____ I have had very strong doubts about the beliefs
 - 4 _____ I have had strong doubts about the beliefs
 - 3 _____ I have had moderate doubts about the beliefs
 - 2 _____ I have had mild doubts about the beliefs
 - 1 _____ I have had only slight doubts about the beliefs
 - 0 _____ I have had no doubts about the beliefs at all
9. To what extent do you still hold the religious beliefs taught you when you were growing up?
 - 5 _____ I am now in complete agreement with the beliefs taught
 - 4 _____ I am now in nearly complete agreement with the beliefs taught
 - 3 _____ I am now in moderate agreement with the beliefs taught
 - 2 _____ I am now in mild agreement with the beliefs taught
 - 1 _____ I am now in very slight agreement with the beliefs taught
 - 0 _____ I now do not agree at all with the beliefs taught

APPENDIX E

Spring 1988 Interview Schedule

1988 (Feb - Mar) Interview Study (WLU)

Respondent # _____

Introduction:

My name is [], and I am interviewing about 100 people as part of some funded research, under the supervisor of Dr. Bruce Hunsberger. We really appreciate your willingness to participate in this study - I think you will find the interview quite interesting. Of course, you do not have to answer anything you do not want to, and you may withdraw from the research at any time - we would not include your answers in any data analyses if you did not want us to. Your responses are confidential - we will not identify you by name or any other information which could give away your identity, in any reports we write. The university and granting agency do require that you sign a form indicating your willingness to participate in this study - I would point out that this does not obligate you to complete the interview. You may still withdraw at any time. So if you would please sign this form, we can begin the interview.

[sign consent form]

The interview itself usually takes less than an hour. We are quite interested in how students resolve various dilemmas in life, how they feel about other attitudes on the issues, and so on. So I will be giving you some brief vignettes to read, each describing a dilemma or conflict situation, and I will then be asking you some questions concerning how you feel about it all - essentially the same questions for each paragraph. In order to keep the interview moving along, and to ensure we have a complete record of responses, we are tape recording the interviews. Do you have any questions before we get started?

Vignette I

The two Smith boys (ages 9 and 11) are constantly arguing and fighting. It used to be rather minor, but now they hit, scratch, pull hair, pinch, swear at each other, and so on. The parents, Tom and Anna, are quite concerned that the boys will harm one another. They have tried different approaches to dealing with the problem, but nothing seems to work. They even went as a family to a counsellor, but he implied that this "sibling rivalry" wasn't too serious, and the boys would eventually "grow out of it." Tom and Anna are not satisfied, and want things to change now.

The dilemma: How should parents deal with situations like this?

1. First, how much conflict does this dilemma cause for you personally?

1	2	3	4	5	6	7
none at all		some		quite a bit		a great deal

2. To what extent do you feel this is a difficult dilemma to resolve?

1	2	3	4	5	6	7
not diffi- cult at all		somewhat difficult		quite difficult		extremely difficult

3. How much would you say you have thought about this kind of issue overall in your life?

1	2	3	4	5	6	7
not at all		some		quite a bit		a great deal

4. How do you personally feel this dilemma should be resolved?

5. How certain are you that this is how the dilemma should be resolved?

1	2	3	4	5	6	7
not certain at all		somewhat certain		quite certain		very certain

6. Ideally, what else would you like to know, to help you more confidently make a decision about what the parents should do?

7. If you were asked to resolve th's dilemma personally, is it possible you would go to anyone else for more information? (To whom?)

8. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

9. Would you consider going to someone with a very different perspective from your own on this issue? To whom?

10. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

11. Let's go back to resolving the dilemma. [remind of response to #4] What other alternatives are there in this case? [Are there any other solutions to the dilemma?] [In each case ask S how reasonable the alternative is on 7-point scale.] (up to max. of 2 alternatives)?

a)

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

b)

1	2	3	4	5	6	7
not at all		somewhat		quite		<u>very</u>
reasonable		reasonable		reasonable		reasonable

12. [If not mentioned in #11 above, outline the most "opposite" point of view (i.e., to S's preferred solution in #4), and ask how reasonable an approach this is (on 7-point scale).] Why/why not?

1	2	3	4	5	6	7
not at all		somewhat		quite		<u>very</u>
reasonable		reasonable		reasonable		reasonable

13. Is there any chance of compromise or reconciliation here? [Instead of choosing one alternative or another, would it be possible to work out a compromise?] (If yes, how?)

14. Are the various alternatives to dealing with this problem related to one another to any extent? What are the implications of accepting these various approaches?

15. Is there any way in which some different approaches to this problem of what the parents should do, are really part of, or feed into, an overall system or philosophy? That is, is there a broader framework that lies behind all of this?

Vignette II

A man has been sentenced to prison for 10 years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Jim Thompson. For 8 years he worked hard, gradually saved enough money to buy his own business, and married a local girl. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day Mike Jones, an old neighbour, recognized Thompson as the man who escaped from prison 8 years before, and whom the police had been looking for.

The dilemma: What is the right thing to do in this kind of situation?

1. First, how much conflict does this dilemma cause for you personally?

1	2	3	4	5	6	7
none at all		some		quite a bit		a great deal

2. To what extent do you feel this is a difficult dilemma to resolve?

1	2	3	4	5	6	7
not diffi- cult at all		somewhat difficult		quite difficult		extremely difficult

3. How much would you say you have thought about this kind of issue overall in your life?

1	2	3	4	5	6	7
not at all		some		quite a bit		a great deal

4. How do you personally feel this dilemma should be resolved?

5. How certain are you that this is how the dilemma should be resolved?

1	2	3	4	5	6	7
not certain at all		somewhat certain		quite certain		very certain

6. Ideally, what else would you like to know, to help you more confidently make a decision about what the right thing is to do in this situation?

7. If you were asked to resolve this dilemma personally, is it possible you would go to anyone else for more information? (To whom?)

8. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

9. Would you consider going to someone with a very different perspective from your own on this issue? To whom?

10. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

11. Let's go back to resolving the dilemma. [remind of response to #4] What other alternatives are there in this case? [Are there any other solutions to the problem of what is right?] [In each case ask S how reasonable the alternative is on 7-pt scale.] (max. of 2 alternatives)

a)

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

b)

1	2	3	4	5	6	7
not at all		somewhat		quite		<u>very</u>
reasonable		reasonable		reasonable		reasonable

12. [If not mentioned in #11 above, outline the most "opposite" point of view (i.e., to S's preferred solution in #4), and ask how reasonable an approach this is (on 7-point scale).] Why/why not?

1	2	3	4	5	6	7
not at all		somewhat		quite		<u>very</u>
reasonable		reasonable		reasonable		reasonable

13. Is there any chance of compromise or reconciliation here?
[Instead of choosing one alternative or another, would it be possible to work out a compromise?] (If yes, how?)

14. Are the various alternatives to dealing with this problem related to one another to any extent? What are the implications of accepting these various approaches?

15. Is there any way in which some different approaches to this problem of what is the right thing to do, are really part of, or feed into, an overall system or philosophy? That is, is there a broader moral framework that lies behind all of this?

Vignette III

Doug and Mary have recently suffered a great tragedy. Their daughter, Jill, who was an excellent student enjoying fine health was killed in an awful automobile accident when her car skidded into a concrete abutment, on an icy bridge. The parents have always considered religion to be an integral part of their lives, and have been faithful believers all their lives. However, they are now struggling with the question, "How could God, if He is a loving God, take their only child away from them?"

The dilemma: How can God, if He is a loving God, make innocent people suffer like this?

1. First, how much conflict does this dilemma cause for you personally?

1	2	3	4	5	6	7
none at all		some		quite a bit		a great deal

2. To what extent do you feel this is a difficult dilemma to resolve?

1	2	3	4	5	6	7
not diffi- cult at all		somewhat difficult		quite difficult		extremely difficult

3. How much would you say you have thought about this kind of issue overall in your life?

1	2	3	4	5	6	7
not at all		some		quite a bit		a great deal

4. How do you personally feel this dilemma should be resolved?

5. How certain are you that this is how the dilemma should be resolved?

1	2	3	4	5	6	7
not certain at all		somewhat certain		quite certain		very certain

6. Ideally, what else would you like to know, to help you more confidently make a decision about how God could allow this to happen?

7. If you were asked to resolve this dilemma personally, is it possible you would go to anyone else for more information? (To whom?)

8. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

9. Would you consider going to someone with a very different perspective from your own on this issue? To whom?

10. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

11. Let's go back to resolving the dilemma. [remind of response to #4] What other alternatives are there in this case? [Are there any other solutions to the dilemma?] [In each case ask S how reasonable the alternative is on 7-point scale.] (up to max. of 2 alternatives)

a)

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

b)

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

12. [If not mentioned in #11 above, outline the most "opposite" point of view (i.e., to S's preferred solution in #4), and ask how reasonable an approach this is (on 7-point scale).] Why/why not?

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

13. Is there any chance of compromise or reconciliation here?
[Instead of choosing one alternative or another, would it be possible to work out a compromise?] (If yes, how?)

14. Are the various alternatives to dealing with this problem related to one another to any extent? What are the implications of accepting these various approaches?

15. Is there any way in which some different approaches to this problem of how God could allow innocent people to suffer, are really part of, or feed into, an overall system or philosophy? (That is, is there a broader religious framework that lies behind all of this?)

Vignette IV

A large mining company in northern Ontario has been having a tough time financially the last few years. Now, as part of a government clampdown on polluters, John (the company president) has been ordered to make costly changes in order to reduce pollution. Unfortunately, this requirement will likely push the company into bankruptcy, cause the company to go out of business and the entire operation to be shut down, and this will result in thousands of workers losing their jobs.

The dilemma: How should our society deal with this kind of conflict between business and the environment?

1. First, how much conflict does this dilemma cause for you personally?

1	2	3	4	5	6	7
none at all		some		quite a bit		a great deal

2. To what extent do you feel this is a difficult dilemma to resolve?

1	2	3	4	5	6	7
not diffi- cult at all		somewhat difficult		quite difficult		extremely difficult

3. How much would you say you have thought about this kind of issue overall in your life?

1	2	3	4	5	6	7
not at all		some		quite a bit		a great deal

4. How do you personally feel this dilemma should be resolved?

5. How certain are you that this is how the dilemma should be resolved?

1	2	3	4	5	6	7
not certain at all		somewhat certain		quite certain		very certain

6. Ideally, what else would you like to know, to help you more confidently make a decision about how this conflict between business and the environment can be resolved?

7. If you were asked to resolve this dilemma personally, is it possible you would go to anyone else for more information? (To whom?)

8. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

9. Would you consider going to someone with a very different perspective from your own on this issue? To whom?

10. How likely is it that you would actually go to this person for more information?

1	2	3	4	5	6	7
not likely at all		possible		quite likely		almost certain

11. Let's go back to resolving the dilemma. [remind of response to #4] What other alternatives are there in this case? [Are there any other solutions to the dilemma?] [In each case ask S how reasonable the alternative is on 7-point scale.] (up to max. of 2 alternatives)

a)

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

b)

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

12. [If not mentioned in #11 above, outline the most "opposite" point of view (i.e., to S's preferred solution in #4), and ask how reasonable an approach this is (on 7-point scale).] Why/why not?

1	2	3	4	5	6	7
not at all reasonable		somewhat reasonable		quite reasonable		<u>very</u> reasonable

13. Is there any chance of compromise or reconciliation here?
[Instead of choosing one alternative or another, would it be possible to work out a compromise?] (If yes, how?)

14. Are the various alternatives to dealing with this problem related to one another to any extent? What are the implications of accepting these various approaches?

15. Is there any way in which some different approaches to this problem of conflict between business and the environment, are really part of, or feed into, an overall system or philosophy? That is, is there a broader framework that lies behind all of this?

Religious Doubt

That is the last of the dilemmas I will be showing you. But before we finish, I would like to ask you just a few questions about another topic we are interested in. We have found that most people, whether they are religious or not, have some serious doubts about religion at some time in their lives. We want to find out as much as we can about these doubts, how they develop, and how they are resolved. To begin, I wonder if you would think about your religious beliefs, and your religious development.

1. What would you say is (or was) the most serious doubt about religion or religious beliefs that you have had in the last few years? (Describe the doubt.) [prod if necessary: Most people have at least some doubts, even if they are rare or not too severe]

2. How long ago was that? How old were you then?

3. Have you resolved this doubt? [If yes, describe how. If no, what is your thinking on this issue now?]

4. What do you think caused the doubt in the first place?

5. Have you had any other doubts about religion or religious beliefs in the last few years, which are as serious, or almost as serious as (above)? [If yes, repeat above 3 questions once only.]

6. In general, do you think highly religious people secretly have doubts about their religion?

If yes, what kinds of doubts do they have? What causes these doubts? How do they resolve them?

If no, why don't they have doubts?

7. In general, do you think nonreligious people secretly need religion, or want to believe in religion?

If yes, why?

If no, why not?

8. What do you think are the main causes of people doubting their religion or religious beliefs, in general?

APPENDIX F

Supplementary Analyses and Tables For Study 1

Table 1*Mean CO Scores of Christian Orthodoxy Groups (High, Medium, Low)*

Christian Orthodoxy Groups		
Low	Middle	High
65.56 sd=18.65 (n = 27)	124.54 sd=7.01 (n = 24)	165.24 sd=3.50 (n = 29)

Table 2*Mean Scores for Background Religious Variables by CO Groups*

Item	Low	CO Medium	High
Church Attendance	0.44 [sd=0.58] (n = 27)	1.75 [sd=1.33] (n = 24)	2.82 [sd=1.49] (n = 28)
Accept Religious Teachings	1.10 [sd=1.12] (n = 20)	2.58 [sd=0.72] (n = 24)	4.07 [sd=0.66] (n = 28)
Family Emphasis on Religion	1.26 [sd=1.38] (n = 27)	2.74 [sd=1.42] (n = 23)	3.71 [sd=1.08] (n = 28)
Doubt of Beliefs Taught	4.00 [sd=1.17] (n = 17)	2.21 [sd=1.06] (n = 24)	1.64 [sd=1.16] (n = 28)

Table 3*ANOVA Summary Tables for Integrative Complexity Scores by Religious Doubt Groups***Doubts and their Resolution:**

Source	df	Mean Square	F
Doubt Groups	2	3.94	5.22 **
Error	69	.75	
Total	71		

What Caused the Doubt:

Source	df	Mean Square	F
Doubt Groups	2	1.48	1.98
Error	59	.75	
Total	61		

Causes of People Doubting in General:

Source	df	Mean Square	F
Doubt Groups	2	2.72	3.91 *
Error	69	.70	
Total	71		

Overall Average Complexity Score:

Source	df	Mean Square	F
Doubt Groups	2	2.04	4.63 *
Error	59	.44	
Total	61		

Table 4

Types of Personal Doubts Reported for the Entire Sample and for Christian Orthodoxy Groups

Categorization of Doubt	Overall Sample		Christian Orthodoxy Groups		
	Q.1	Q.1&5	Low	Middle	High
No Doubts	3	3	2		1
Belief in God	22	25	10 (2)	5	10 (1)
Other Religious Teachings (dogmas)	5	10	5 (3)	1	4 (2)
Hypocrisy, Organized Religion	11	12	2	4	5
Scientific Issues (no proof)	3	4	2		2 (1)
Rebellion, Reaction	1	2	1 (1)	1	
Trauma, Tragedy, Death	14	14	2	6	6
Intellectual Doubts (superstition, crutch)	13	15	7 (1)	5	2 (1)
Lifestyle too Confining	2	2			2
No Answer	7	7	3	2	2

Note - Q.1 refers to doubts given in response to question one which asked about the most serious doubt they had experienced. Q.1&5 includes responses to both questions about personal doubts experienced.

- Numbers in brackets indicate the responses which were given to the second question about personal doubts (i.e., question 5) and are included in the totals given in the table. Thus, responses to Question 1 are the totals minus the number in brackets.

Table 5
Ways in Which Doubts are Resolved by Orthodoxy Groups

Resolution	Low	Middle	High	
Not resolved	5	6	5	16
Accept Religious Position	2	4	15	21
Accept Nonreligious Position	7	4	1	12
Other	7	7	5	19
Totals	21	21	26	68

Table 6
Complexity Scores of Respondents for each Doubt Question

Complexity Item	Complexity Score							NR	
	1	2	3	4	5	6			
Doubts and their Resolution	25	30	19	3	1	-	3	81	
What Caused the Doubt	38	24	6	-	-	1	12	81	
Causes of People's Doubts	22	31	23	3	-	-	2	81	
	85	85	48	6	1	1	17		

Table 7

Types of Doubts by Ways in Which Doubts are Resolved, Broken Down by Orthodoxy Groups

Types of Doubts		Not Rslvd	Accept Rel.	Accept Nonrel.	Other	Totals	
Belief in God	L	4	1	1	2	8	22
	M	1	2	1	1	5	
	H	1	5		3	9	
Dogmas, Rituals	L			2		2	5
	M			1		1	
	H	2				2	
Organized Religion	L	1			1	2	11
	M	2		1	1	4	
	H		5			5	
Scientific, No proof	L			1	1	2	3
	M						
	H				1	1	
Rebellion	L						1
	M				1	1	
	H						
Trauma, Tragedy	L			1		1	12
	M	2	1		2	5	
	H	1	4		1	6	
Intellectual	L		1	2	3	6	12
	M	1	1	1	2	5	
	H		1			1	
Lifestyle	L						2
	M						
	H	1		1		2	
	L	5	2	7	7	21	68
	M	6	4	4	7	21	
	H	5	15	1	5	26	
Totals		16	21	12	19		

APPENDIX G

Fall 1988 Questionnaire

Survey Number: _____

STUDENT SURVEY

This survey deals with your attitudes on a variety of topics, including social issues, religion, how we think about things, and aspects of your background.

Your individual responses will be kept in the strictest confidence. The information obtained will be analyzed on a group basis only, not on an individual basis.

You are free to withdraw from this study at any time, in which case none of your responses will be included in the analysis. Should you wish further information about the study, please contact the person listed below. Thank you for your cooperation.

Researcher: Dr. Bruce Hunsberger,
Dept. of Psychology,
Rm. 3-113, CTB,
Wilfrid Laurier University,
Waterloo, Ontario

Telephone: (519) 884-1970, ext. 2219

Part I: Mini Essay

In the space below and on the next page, we would like you to write a short essay on the existence of God. We need to get some idea of what university students think about this topic, and how they think about the issue. You will have approximately 5 minutes to write your essay. Do your best to present a thoughtful analysis of the topic, in the limited time available. You will be warned when there is just 1 minute remaining, so that you can bring your paper to a conclusion. Please begin now, and do the best job you can.

(additional space for mini essay, if needed)

-- Please Do Not Turn The Page Until Told To Do So --

PART II: Attitude Survey

Below you will find various statements concerning how and what you think about many different issues. There are no right or wrong answers to these items. Simply indicate the extent to which you personally AGREE or DISAGREE with each statement by writing the appropriate number in the space to the left of each item, using the following scale:

Write a -3 in the space if you STRONGLY DISAGREE with the statement.
 Write a -2 in the space if you MODERATELY DISAGREE with the statement.
 Write a -1 in the space if you SLIGHTLY DISAGREE with the statement.

Write a +1 in the space if you SLIGHTLY AGREE with the statement.
 Write a +2 in the space if you MODERATELY AGREE with the statement.
 Write a +3 in the space if you STRONGLY AGREE with the statement.

If you feel exactly and precisely NEUTRAL about an item, write down "0" in the space provided.

1. ____ There are always at least two sides to an issue.
2. ____ When two people disagree with one another, there is usually a way of solving the disagreement so that both will be satisfied.
3. ____ Things are usually not as complicated as many people seem to think.
4. ____ When I have a difficult problem to solve, I like to carefully consider all the angles before reaching a conclusion.
5. ____ In general I have found that people who disagree with me usually have good reasons for their positions.
6. ____ Rules in our society need to be constantly changed and updated.
7. ____ I am always ready to listen to new ideas even if they contradict my own.
8. ____ Problems usually boil down to a simple solution.
9. ____ When I have a difficult problem to solve, I like to come to a conclusion as quickly and straightforwardly as I can.
10. ____ In general, I have found that people who disagree with me usually don't know what they are talking about.
11. ____ We need rules in our society, and everyone should follow them.
12. ____ I am suspicious of new ideas that radically differ from my own.
13. ____ I always listen to new ideas, even if they contradict my own.

+1 = slightly agree -1 = slightly disagree
 +2 = moderately agree -2 = moderately disagree 0 = neutral
 +3 = strongly agree -3 = strongly disagree

14. _____ In order to solve difficult problems, there is no point in considering different perspectives and their interrelationships. This often just makes simple problems into complex ones.
15. _____ Choosing one side or the other in a dispute is often better than trying to achieve a compromise solution.
16. _____ Usually it is possible to put two alternative solutions to a problem together, and come up with an entirely new idea.
17. _____ Philosophers may try to consider every alternative to a problem, the implications of the alternatives and their various solutions, and a global overview of the problem. This is fine for those who have the time to do it, but it really doesn't contribute much to the solution of important problems in this world.
18. _____ When considering an issue like abortion, you have to be on one side or the other; there is no middle ground.
19. _____ The United States and Russia have a great deal in common, despite the differences in their political systems.
20. _____ The impression you form when you first meet someone is often the most accurate.
21. _____ One should consider a great many things in choosing a career, not just focus on one important aspect such as whether it will be an enjoyable thing to do.
22. _____ I don't usually bother to analyze and explain people's behaviour.
23. _____ I believe it is important to analyze and understand our own thinking processes.
24. _____ Children have to be treated differently as they grow older.
25. _____ Fathers cannot raise their children as well as mothers.
26. _____ It is not easy to define a good home because it is made up of many different things.
27. _____ Parents must keep to their standards and rules no matter what their child is like.
28. _____ There is no one right way to raise children.
29. _____ Children's problems seldom have a single cause.

+1 = slightly agree -1 = slightly disagree
 +2 = moderately agree -2 = moderately disagree 0 = neutral
 +3 = strongly agree -3 = strongly disagree

30. _____ Once I have figured out a single cause for a person's behaviour I don't usually go any further.
31. _____ I have found that the causes for people's behaviour are usually complex rather than simple.
32. _____ I think very little about the different ways that people influence each other.
33. _____ I really enjoy analyzing the reasons or causes for people's behaviour.
34. _____ I usually find that complicated explanations for people's behaviour are confusing rather than helpful.
35. _____ To understand a person's personality/behaviour I have found it is important to know how that person's attitudes, beliefs, and character traits fit together.
36. _____ I prefer simple rather than complex explanations for people's behaviours.
37. _____ I tend to take people's behaviour at face value and not worry about the inner causes for their behaviour (e.g., attitudes, beliefs, etc.).
38. _____ I have thought very little about my own family background and personal history, and how they have interacted with society and my own experiences, in order to understand why I am the sort of person I am.
39. _____ The only real result of prayer is the comfort one may get from saying it.
40. _____ God exists as: Father, Son, and Holy Spirit.
41. _____ Jesus Christ was the divine Son of God.
42. _____ The Bible may be an important book of moral teachings, but it was no more inspired by God than were many other such books in the history of Man.
43. _____ The concept of God is an old superstition that is no longer needed to explain things in the modern era.
44. _____ Through the life, death, and resurrection of Jesus, God provided a way for the forgiveness of man's sins.

+1 = slightly agree -1 = slightly disagree
 +2 = moderately agree -2 = moderately disagree 0 = neutral
 +3 = strongly agree -3 = strongly disagree

45. _____ Despite what many people believe, there is no such thing as a God who is aware of Man's actions.
46. _____ Jesus was crucified, died, and was buried but on the third day He arose from the dead.
47. _____ Man is NOT a special creature made in the image of God, he is simply a recent development in the process of animal evolution.
48. _____ The Bible is the word of God given to guide man to grace and salvation.
49. _____ Those who feel that God answers prayers are just deceiving themselves.
50. _____ It is ridiculous to believe that Jesus Christ could be both human and divine.
51. _____ Jesus was born of a virgin.
52. _____ Christ will return to the earth someday.
53. _____ Most of the religions in the world have miracle stories in their traditions; but there is no reason to believe any of them are true, including those found in the Bible.
54. _____ God hears all of our prayers.
55. _____ Jesus Christ may have been a great ethical teacher, as other men have been in history. But he was not the divine Son of God.
56. _____ God made man of dust in His own image and breathed life into him.
57. _____ In all likelihood there is no such thing as a God-given immortal soul in Man which lives on after death.
58. _____ If there ever was such a person as Jesus of Nazareth, he is dead now and will never walk the earth again.
59. _____ Jesus miraculously changed real water into real wine.
60. _____ There is a God who is concerned with everyone's actions.
61. _____ Jesus' death on the cross, if it actually occurred, did nothing in and of itself to save Mankind.

-3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

62. _____ There is really no reason to hold to the idea that Jesus was born of a virgin. Jesus' life showed better than anything else that he was exceptional, so why rely on old myths that don't make sense.
63. _____ The Resurrection proves beyond a doubt that Jesus was the Christ or Messiah of God.
64. _____ Spanking a child only teaches him resentment and fear, and does nothing to teach him right from wrong.
65. _____ The way things are going in this country, it's going to take a lot of "strong medicine" to straighten out the troublemakers, criminals and perverts.
66. _____ It is wonderful that young people today have greater freedom to protest against things they don't like, and to "do their own thing."
67. _____ It is always better to trust the judgment of the proper authorities in government and religion, than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.
68. _____ People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.
69. _____ It would be best for everyone if the proper authorities censored magazines and movies to keep trashy material away from the youth.
70. _____ It may be considered old fashioned by some, but having a decent, respectable appearance is still the mark of a gentleman and, especially, a lady.
71. _____ The sooner we get rid of the traditional family structure, where the father is the head of the family and the children are taught to obey authority automatically, the better. The old-fashioned way has a lot wrong with it.
72. _____ There is nothing wrong with premarital sexual intercourse.
73. _____ The facts on crime, sexual immorality, and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers if we are going to save our moral standards and preserve law and order.

-3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

74. _____ There is nothing immoral or sick in somebody's being a homosexual.
75. _____ It is important to protect fully the rights of radicals and deviants.
76. _____ Obedience and respect for authority are the most important virtues children should learn.
77. _____ Rules about being "well-mannered" and respectable are chains from the past which we should question very thoroughly before accepting.
78. _____ Once our government leaders and the authorities condemn the dangerous elements in our society, it will be the duty of every patriotic citizen to help stomp out the rot that is poisoning our country from within.
79. _____ "Free speech" means that people should even be allowed to make speeches and write books urging the overthrow of the government.
80. _____ Some of the worst people in our country nowadays are those who do not respect our flag, our leaders, and the normal way things are supposed to be done.
81. _____ In these troubled times laws have to be enforced without mercy, especially when dealing with the agitators and revolutionaries who are stirring things up.
82. _____ Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.
83. _____ Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
84. _____ The self-righteous "forces of law and order" threaten freedom in our country a lot more than most of the groups they claim are "radical" and "godless."
85. _____ The courts are right in being easy on drug users. Punishment would not do any good in cases like these.
86. _____ If a child starts becoming unconventional and disrespectful of authority, it is his parents' duty to get him back to the normal way.

- 3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree

87. _____ In the final analysis the established authorities, like parents and our national leaders, generally turn out to be right about things, and all the protestors don't know what they're talking about.
88. _____ A lot of our rules regarding modesty and sexual behaviour are just customs which are not necessarily any better and holier than those which other people follow.
89. _____ There is absolutely nothing wrong with nudist camps.
90. _____ The real keys to the "good life" are obedience, discipline, and sticking to the straight and narrow.
91. _____ It is best to treat dissenters with leniency and an open mind, since new ideas are the lifeblood of progressive change.
92. _____ The biggest threat to our freedom comes from the Communists and their kind, who are out to destroy religion, ridicule patriotism, corrupt the youth, and in general undermine our whole way of life.
93. _____ Students in high school and university must be encouraged to challenge their parents' ways, confront established authorities, and in general criticize the customs and traditions of our society.
94. _____ One reason we have so many troublemakers in our society nowadays is that parents and other authorities have forgotten that good old-fashioned physical punishment is still one of the best ways to make people behave properly.

NOTE: For the remaining items in this section, please try to think back to the time when you were about 10 years old. (If it is too hard to think of a specific 1 year period, try to think more generally of the time when you were 8 to 12 years old.) Then indicate what your opinion would have been when you were about 10. Using the same +3 to -3 response format shown above, indicate the extent of your agreement or disagreement with each statement. Remember, answer as you would have when you were 10 years old.

95. _____ When things go wrong, I can always turn to others at church for support and understanding.
96. _____ My father doesn't really care whether I am religious or not.
97. _____ If anything, my experiences at school have encouraged me to be more religious.
98. _____ Other people respect my father for his religious beliefs.

-3 = strongly disagree +3 = strongly agree
 -2 = moderately disagree +2 = moderately agree 0 = neutral
 -1 = slightly disagree +1 = slightly agree
 (answer as you would have when you were 10 years old)

99. _____ I do not have many friends at my church.
100. _____ When it comes right down to it, I'm not sure where my mother stands on religion.
101. _____ As I look back on it, I would have to say that the time I spent in church-related activities was a waste of time.
102. _____ I often socialize with people from my church.
103. _____ I get along well with my minister/priest.
104. _____ I hardly ever go to church.
105. _____ When it comes to religion, I look up to my mother as a model.
106. _____ I would have to say that the overall impact of my educational experience has been to make me less religious.

Part III: Resolving Conflict

A) General Conflict: Conflicts arise between people on many issues. Although it might depend on the issue involved, or whom you are disagreeing with, etc., think about how you generally feel in situations where you disagree quite strongly with another person. Do you typically: (check the one alternative which comes closest to your reaction)

- _____ feel that you are correct, and almost never accept the other person's position
- _____ feel that you are usually correct, but try to at least acknowledge and understand the other person's position
- _____ feel that you must consider all the evidence and weigh the arguments before making up your mind about who is right
- _____ feel that most issues are more complex than they first appear, and that one must consider (for example) the implications of the different resolutions of the disagreement
- _____ feel that most such disagreements are understandable. There is usually a "bigger picture" into which your disagreements fit.
- _____ feel that the issue on which you disagree is only one aspect of the various frameworks that all of us use in understanding the world

B) Specific Issues:

1) Now think about the controversy over CAPITAL PUNISHMENT. People often have strong feelings about this issue, and heated arguments can result. Think about your own feelings on capital punishment. Which of the following best captures your position? (Check one)

- Capital punishment is wrong and there is no question about it.
- Capital punishment can be justified and there is no question about it.
- While I tend to have firm opinions about this issue, it is true that there are some legitimate arguments on both sides of the issue.
- The issue is a complex one and is not easily resolved. There are numerous good arguments on both sides.
- The issue is complex. There are many good arguments on both sides, but it is also clear that the various implications of the two sides are complex and need to be taken into account.
- One must go beyond the issue of capital punishment, since it is just part of a much larger, more important framework which has implications for many issues.

2) Now, think about the controversy over the EXISTENCE OF GOD. People often have strong feelings about this issue, and heated arguments can result. Think about your own feelings on the existence of God. Which of the following best captures your position? (Check one)

- God exists and there is no question about it.
- God does not exist and there is no question about it.
- While I tend to have firm opinions about this issue, it is true that there are some legitimate arguments on both sides of the issue.
- The issue is a complex one and is not easily resolved. There are numerous good arguments on both sides.
- The issue is complex. There are many good arguments on both sides, but it is also clear that the various implications of the two sides are complex and need to be taken into account.
- One must go beyond the issue of the existence of God, since it is just part of a much larger, important more framework which has implications for many issues.

Part IV: Background Information

Please check (or write in) the appropriate answer in the space provided.

1. Sex: Male _____ Female _____
2. Age: _____
3. Year of studies: 1. ___ 2. ___ 3. ___ 4. ___ Other ___ (Specify: _____)
4. What is your major? _____
5. In which of the following religious groups were you raised?
 - _____ Protestant (which denomination? _____)
 - _____ Catholic
 - _____ Some other religious group (specify: _____)
 - _____ No religion
6. With which religious group do you presently identify yourself or think of yourself as being?
 - _____ Protestant (which denomination? _____)
 - _____ Catholic
 - _____ Personal religion (no affiliation to any religious group)
 - _____ Some other religion (specify: _____)
 - _____ No religion, though I am not an atheist ("agnosticism")
 - _____ No religion, since I am an atheist
7. To what extent would you say that your family emphasized observing the family religion and religious practices as you were growing up?
 - 5 _____ a very strong emphasis was placed on religion
 - 4 _____ a strong emphasis was placed on religion
 - 3 _____ a moderate emphasis was placed on religion
 - 2 _____ a mild emphasis was placed on religion
 - 1 _____ a very slight emphasis was placed on religion
 - 0 _____ no emphasis was placed on religion
8. If you were brought up under some religious influence, to what extent have you doubted the religious beliefs taught?
 - 5 _____ I have had very strong doubts about the beliefs
 - 4 _____ I have had strong doubts about the beliefs
 - 3 _____ I have had moderate doubts about the beliefs
 - 2 _____ I have had mild doubts about the beliefs
 - 1 _____ I have had only slight doubts about the beliefs
 - 0 _____ I have had no doubts about the beliefs at all

9. To what extent do you still hold the religious beliefs taught you when you were growing up?
- 5 _____ I am now in complete agreement with the beliefs taught
 4 _____ I am now in nearly complete agreement with the beliefs taught
 3 _____ I am now in moderate agreement with the beliefs taught
 2 _____ I am now in mild agreement with the beliefs taught
 1 _____ I am now in very slight agreement with the beliefs taught
 0 _____ I now do not agree at all with the beliefs taught
10. On the average how often do you now attend formal religious services (not including weddings, funerals, etc.)?
- 5 _____ more than once a week
 4 _____ once a week
 3 _____ once every two weeks
 2 _____ once a month
 1 _____ once or twice a year
 0 _____ not at all
11. How interested in religion are you? (please circle appropriate number)
- | | | | | | | | | |
|------------|---|---|---|---|---|---|---|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| not at all | | | | | | | | extremely |

Finally, below are some reasons that people sometimes give for doubting traditional religious teachings. Please indicate the extent to which you have had these doubts, according to the following scale:

- 0 = not at all
 1 = a little bit
 2 = a mild amount
 3 = a moderate amount
 4 = quite a bit
 5 = a great deal

12. _____ Doubts that religious writings, such as the Bible, could really be the word of God, because the writings seemed contradictory, irrational, or wrong.
13. _____ Doubts about the existence of a benevolent, good God, caused by the suffering or death of someone I knew.
14. _____ The feeling that I had not really developed my own ideas about religion, but instead was just a copy of other people's ideas. (Or, if you were raised in no religion, that Christians, Jews, etc. in general do not develop their own ideas, but instead are copies of other people's ideas.)

- 0 = not at all
1 = a little bit
2 = a mild amount
3 = a moderate amount
4 = quite a bit
5 = a great deal

15. _____ The feeling that religion didn't really make people better; people who went to church were still unkind, cheated others, etc., but pretended they were better.
16. _____ The feeling that religion exists basically because people are afraid of death and want to believe life does not end then.
17. _____ The feeling that today's religions are based on a collection of superstitions from the past developed to "explain" things primitive people did not understand.
18. _____ The feeling that religion makes people narrow-minded and intolerant and causes conflict between groups who believe different things.
19. _____ A feeling that the overall religious teachings are contradictory or that they don't make very much sense.
20. _____ Resentment or rebelliousness when someone (say, a minister, priest, or rabbi) tried to tell me how I should behave or what I should believe. (If you were raised in no religion, how resentful would you have been had this happened?)
21. _____ The feeling that religion makes people do stupid things and give up perfectly wholesome pleasures for no good reason.

End of Questionnaire - Thank You for Your Cooperation!

APPENDIX H

Supplementary Tables and Analyses for the
Religious Doubt Scale (Study 2)

Table 1

Mean Religious Doubt Scores of Religious Doubt Groups (High, Medium, Low) For Religious and Nonreligious Topic Domains

Paragraph Type	Religious Doubt Groups		
	Low	Middle	High
Religious	7.74 sd=3.69 n = 42	18.33 sd=2.84 n = 42	32.13 sd=6.01 n = 46
Nonreligious	7.76 sd=3.81 n = 50	18.77 sd=2.80 n = 39	30.85 sd=5.86 n = 39

Table 2

Mean Scores for Background Religious Variables by Doubt Groups

Background Religious Variables	Religious Doubt Groups		
	Low	Middle	High
Church Attendance	2.52 [sd=1.59] (n = 93)	1.67 [sd=1.37] (n = 81)	0.95 [sd=0.92] (n=1.51)
Accept Religious Teachings	3.81 [sd=1.05] (n = 91)	3.01 [sd=1.13] (n = 77)	2.11 [sd=1.46] (n = 81)
Family Emphasis on Religion	3.15 [sd=1.38] (n = 91)	2.90 [sd=1.51] (n = 81)	2.20 [sd=1.52] (n = 87)
Doubt of Belief Taught	1.43 [sd=1.10] (n = 91)	2.16 [sd=1.22] (n = 76)	3.08 [sd=1.42] (n = 76)

Table 3*Mean Complexity Scores for Paragraphs by Doubt Group*

Doubt Group	Paragraph Type	
	Nonreligious	Religious
High Doubt	2.31 [sd = 0.69] (n = 39)	2.72 [sd = 0.72] (n = 46)
Medium Doubt	2.31 [sd = 0.77] (n = 39)	2.74 [sd = 0.70] (n = 42)
Low Doubt	2.20 [sd = 0.88] (n = 50)	2.45 [sd = 0.80] (n = 42)

Note. - - Higher scores indicate greater integrative complexity.

Table 4

*ANOVA Summary Table for Integrative Complexity
by Religious Doubt Groups and Topic*

Source	df	MS	F
Doubt group (D)	2	1.02	1.73
Topic (T)	1	8.39	14.28 *
D X T	2	0.26	0.44
Error	254	0.59	

* significant at $p < .01$

Table 5

*ANOVA Summary Table for Integrative Complexity
Scores by Religious Doubt Groups and Topic*

Source	df	MS	F
Doubt group - linear	1	1.52	2.59
Doubt group - quadratic	1	0.59	1.01
Topic (T)	1	8.49	14.40 *
Doubt X T (linear)	1	0.27	0.46
Doubt X T (quadratic)	1	0.14	0.23
Error	252	0.59	

* $p < .001$

APPENDIX I

Supplementary Analyses and Tables for Christian Orthodoxy
Groups (Study 2)

Table 1

Mean Orthodoxy Scores of CO Groups (Low, Medium, High) for Religious and Nonreligious Topic Domains

Paragraph Type	Christian Orthodoxy Groups		
	Low	Middle	High
Religious	78.22 sd=23.04 (n = 54)	136.82 sd=13.92 (n = 40)	162.81 sd =4.32 (n = 43)
Nonreligious	87.03 sd=19.59 (n = 36)	135.09 sd=14.52 (n = 53)	163.15 sd =4.34 (n = 46)

Table 2

Mean Scores for Background Religious Variables by CO Groups

Background Religious Variables	Christian Orthodoxy Groups		
	Low	Middle	High
Church Attendance	0.72 [sd=0.80] (n = 87)	1.58 [sd=1.23] (n = 93)	2.80 [sd=1.51] (n = 86)
Accept Religious Teachings	1.84 [sd=1.39] (n = 77)	3.06 [sd=1.04] (n = 91)	4.05 [sd=0.85] (n = 86)
Family Emphasis on Religion	1.77 [sd=1.48] (n = 91)	2.72 [sd=1.42] (n = 93)	3.71 [sd=1.03] (n = 86)
Doubt of Beliefs Taught	3.14 [sd=1.37] (n = 72)	1.92 [sd=1.17] (n = 88)	1.60 [sd=1.29] (n = 86)

Table 3
*ANOVA Summary Table for Integrative Complexity
 With CO Groups*

Source	df	MS	F
CO Group (CO)	2	0.25	0.43
Topic (T)	1	11.21	19.27 *
CO X T	2	1.41	0.09
Error	266	0.58	

* significant at $p < .001$

Table 4
Mean Complexity Scores for Paragraphs by CO Group

CO Group	Paragraph Type	
	Nonreligious	Religious
High CO	2.15 [sd = 0.79] (n = 46)	2.63 [sd = 0.69] (n = 43)
Medium CO	2.42 [sd = 0.77] (n = 53)	2.55 [sd = 0.75] (n = 40)
Low CO	2.08 [sd = 0.77] (n = 36)	2.70 [sd = 0.79] (n = 54)

Note. - - Higher scores indicate greater integrative complexity.

Table 5

*ANOVA Summary Table for Integrative Complexity
With CO Groups*

Source	df	MS	F
CO group (linear)	1	0.00	0.00
CO group (quadratic)	1	0.49	0.85
Topic (T)	1	11.21	19.27 **
Linear by Topic	1	0.23	0.39
Quadratic by Topic	1	2.59	4.40 *
Error	266	0.58	

* significant at $p < .05$

** significant at $p < .001$

APPENDIX J

Supplementary Analyses and Tables for Right Wing
Authoritarian Groups (Study 2)

Table 1

Mean Authoritarianism Scores of RWA Groups (Low, Middle, High) for Religious and Nonreligious Topic Domains

Paragraph Type	Right Wing Authoritarian Groups		
	Low	Middle	High
Religious	94.48 [sd = 18.73] (n = 48)	120.64 [sd = 5.08] (n = 42)	143.66 [sd = 11.27] (n = 47)
Nonreligious	99.77 [sd = 11.99] (n = 44)	122.02 [sd = 5.07] (n = 49)	139.68 [sd = 8.61] (n = 41)

Table 2

ANOVA Summary Table for Integrative Complexity With RWA Groups

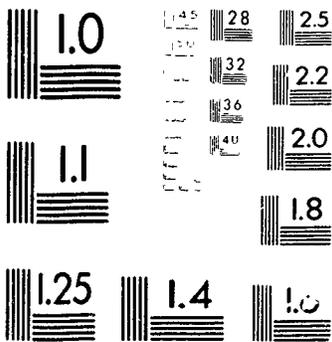
Source	df	MS	F
RWA group (RWA)	2	0.10	0.17
Topic (T)	1	9.95	16.76 *
RWA X T	2	0.38	0.53
Error	265	0.59	

* significant at $p < .01$

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Table 3
Mean Complexity Scores for Paragraphs by RWA Groups

RWA Group	Paragraph Type	
	Nonreligious	Religious
High RWA	2.55 [sd = 0.80] (n = 47)	2.32 [sd = 0.76] (n = 41)
Medium RWA	2.62 [sd = 0.70] (n = 42)	2.18 [sd = 0.83] (n = 49)
Low RWA	2.71 [sd = 0.74] (n = 48)	2.23 [sd = 0.77] (n = 44)

Note. - - Higher scores indicate greater integrative complexity.